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As filed with the Securities and Exchange Commission on April 18, 2014

Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

ZAFGEN, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**2834**	**20-3857670**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification No.)**

One Broadway, 8th Floor
Cambridge, Massachusetts 02142
(617) 401-3041

(Address, including zip code and telephone number, including area code, of Registrant's principal executive offices)

Thomas E. Hughes, Ph.D.
President and Chief Executive Officer
Zafgen, Inc.
One Broadway, 8th Floor
Cambridge, Massachusetts 02142
(617) 401-3041

(Name, address, including zip code and telephone number, including area code, of agent for service)

Copies to:

Mitchell S. Bloom, Esq. **Michael J. Minahan, Esq.** **Goodwin Procter LLP** **Exchange Place** **Boston, Massachusetts 02109** **(617) 570-1000**	**Thomas E. Hughes, Ph.D.** **President and Chief Executive Officer** **Zafgen, Inc.** **One Broadway, 8th Floor** **Cambridge, Massachusetts 02142** **(617) 401-3041**	**Patrick O'Brien, Esq.** **Ropes & Gray LLP** **Prudential Tower** **Boston, Massachusetts 02199** **(617) 951-7000**

Approximate date of commencement of proposed sale to public: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box: ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☐	Accelerated Filer	☐
Non-Accelerated Filer	☒ (Do not check if a smaller reporting company)	Smaller Reporting Company	☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price(1)**	**Amount of Registration Fee(2)**
Common Stock, par value $0.001 per share	$86,250,000	$11,109

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act. Includes the offering price of shares that the underwriters have the option to purchase to cover over-allotments, if any.

(2) Calculated pursuant to Rule 457(o) under the Securities Act based on an estimate of the proposed maximum aggregate offering price.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS (Subject to Completion, dated April 18, 2014)

Shares

COMMON STOCK

This is the initial public offering of shares of common stock of Zafgen, Inc. We are selling shares of common stock.

Prior to this offering, there has been no public market for our common stock. The initial public offering price is expected to be between $ and $ per share.

We have applied to list our common stock on The NASDAQ Global Market under the symbol "ZFGN."

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, and, as such, we have elected to take advantage of certain reduced reporting requirements for this prospectus and may elect to comply with certain reduced public company reporting requirements for future filings.

	Per Share	Total
Initial public offering price	$	$
Underwriting discounts and commissions (1)	$	$
Proceeds to Zafgen, Inc. before expenses	$	$

(1) See "Underwriting" beginning on page 140 for additional information regarding underwriting compensation.

We have granted the underwriters an option to purchase up to additional shares of common stock to cover over-allotments.

Investing in our common stock involves a high degree of risk. See " Risk Factors" beginning on page 12.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on or about , 2014.

Leerink Partners **Cowen and Company**

Canaccord Genuity **JMP Securities**

, 2014

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Prospectus

We and the underwriters have not authorized anyone to provide any information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

Until , 2014, all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

For investors outside of the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes included elsewhere in this prospectus. You should also consider, among other things, the matters described under "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case appearing elsewhere in this prospectus. Unless otherwise stated, all references to "us," "our," "ZFGN," "we," the "Company" and similar designations refer to Zafgen, Inc. and its subsidiaries.

Overview

We are a biopharmaceutical company dedicated to significantly improving the health and well-being of patients affected by obesity. Beloranib, our lead product candidate, is a novel, first-in-class, twice-weekly subcutaneous injection being developed for the treatment of multiple indications, including obesity and hyperphagia, or insatiable life-threatening hunger and hunger-related behaviors, in Prader-Willi Syndrome, or PWS, craniopharyngioma-associated obesity, and severe obesity in the general population.

Beloranib for the Treatment of Obesity and Hyperphagia in PWS

PWS is a rare and complex genetic disorder characterized by physiologic, cognitive and behavioral symptoms, including hyperphagia and obesity. We recently completed two Phase 2a clinical trials evaluating beloranib's ability to reduce body weight and to improve hyperphagia, one in PWS patients and one in severely obese patients. In our Phase 2a clinical trials, we observed reductions in body weight, body mass and body fat content in both patient populations and reductions in hyperphagia-related behaviors in PWS patients. In January 2013, the U.S. Food and Drug Administration, or FDA, granted orphan designation for our application to treat PWS with beloranib. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014 after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities. We filed an application to obtain orphan drug designation for beloranib as a treatment for PWS in the European Union in early 2014. We believe that rare conditions such as PWS afford us an opportunity to rapidly develop and commercialize beloranib using smaller, more focused and less costly clinical trials, relative to those required to develop beloranib for the broader severe obesity population.

PWS is characterized by hyperphagia resulting at least in part from impaired functioning of the hypothalamus, an area of the brain responsible for many functions including the desire to eat. Hyperphagia impairs the PWS patients' ability to live independently, requiring costly and constant supervision to prevent overeating. Without supervision, PWS patients are likely to die prematurely as a result of choking, stomach rupture or tissue necrosis, or from complications caused by morbid obesity, such as right heart failure and respiratory failure. Based on our evaluation of published survival data, the average life expectancy of PWS patients is approximately 32 years of age. While a small number of PWS patients are cared for in costly group homes, the majority of PWS patients are cared for in their homes, and their families undertake substantial effort to create physical barriers to eating. These efforts result in extremely stressful environments, as caregivers often place locks and alarms on cabinets and refrigerators that contain food to impede PWS patients' efforts to obtain food at all times. We estimate the typical annual cost of treating a PWS patient is $100,000 to $200,000, excluding the often significant costs of drug therapies related to other medical and psychological conditions and the costs of any lost time from work experienced by their families due to responsibilities related to the care of a PWS patient.

Published population studies estimate that the prevalence of PWS in the United States and in the European Union ranges from 1 in 8,000 to 1 in 50,000. PWS is diagnosed at an early age, typically in the first year of life, and we believe that, due to the severity of the condition and its unique attributes, the vast majority of patients affected by PWS are diagnosed. Approximately 50% of PWS patients are 13 years of age or older. We believe

that further information regarding the prevalence of PWS will become available through a patient registry that is currently being developed by the Foundation for Prader-Willi Research.

There are currently no effective pharmacological treatments for obesity and hyperphagia in PWS. Furthermore, bariatric surgery is contraindicated in PWS patients due to poor outcomes related to an increased risk of rupture of the reduced stomach in the setting of sleeve gastrectomy or gastric bypass procedures, or rupture of the restricted esophagus in the setting of gastric banding procedures with the consequence of life-threatening gastric perforation.

Beloranib for the Treatment of Craniopharyngioma-Associated Obesity

Craniopharyngioma is a rare form of benign brain tumor that occurs near the optic nerve, pituitary gland and hypothalamus. Approximately 30% to 50% of cases of craniopharyngioma are diagnosed in childhood and adolescence. Manifestations of craniopharyngioma include visual disturbances, headaches and impairment to the hypothalamus-pituitary axis affecting hormone secretion. Treatment of these tumors commonly involves radical surgical removal of the tumor mass by endoscopy or craniotomy, followed by radiation treatment, which results in disruption or removal of neighboring structures including the hypothalamus. Depending on the degree of damage to the hypothalamus caused by tumor removal and subsequent radiation, there may be greater variation in hyperphagia and obesity prevalence in craniopharyngioma patients than PWS patients. Post-treatment hypothalamic dysfunction results in hyperphagia in approximately 50% of these patients, resulting in obesity and a worsened quality of life.

We plan to seek orphan drug designation for the treatment of craniopharyngioma-associated obesity in the United States and the European Union, and anticipate initiating a Phase 2a clinical trial, ZAF-221, evaluating the impact of beloranib treatment on body weight, body composition and hyperphagia in patients with craniopharyngioma-associated obesity in the first half of 2014.

Published population studies estimate that the incidence of craniopharyngioma is 0.13 to 0.17 per 100,000 per year, or approximately 400 to 500 cases per year in the United States and 650 to 850 cases per year in the European Union. We believe patients with craniopharyngioma-associated obesity have a longer life expectancy than PWS patients, which contributes to an increased risk of developing obesity-related co-morbid conditions such as type 2 diabetes in such patients.

Currently, there are no pharmacological agents for the treatment of hyperphagia and resultant obesity seen in patients with craniopharyngioma-associated obesity, and bariatric surgery is not frequently employed in this patient population. We believe this is related to perceived risks of surgical interventions in this population including increased risk of post-surgical complications.

Treatment of Severe Obesity in the General Population

In 2013, we completed a 12-week Phase 2a clinical trial of beloranib administered twice weekly in obese patients. We observed placebo-adjusted weight loss, or weight loss observed beyond that seen in the control arm, of up to 10.3% after 12 weeks of treatment with beloranib. In addition, we observed reductions in levels of low density lipoprotein cholesterol, C-reactive protein and systolic blood pressure. Patients treated with beloranib also reported reduced hunger, as assessed using a visual analog scale, a widely used self-reported measure of hunger and related endpoints.

Our long-term intention is to pursue clinical development of beloranib or another methionine aminopeptidase 2, or MetAP2, inhibitor as a treatment for severely obese patients in the general population. We believe this patient population would benefit from MetAP2 inhibitor treatment through the reduction of body

weight and through improvement of severity or symptoms of other co-morbid conditions. We believe that MetAP2 inhibitors have the potential to offer this patient population, most of which is not adequately responsive to available therapies, substantial health and quality of life benefits. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. We are also evaluating additional proprietary MetAP2 inhibitors beyond beloranib as potential development candidates that would provide increased patient convenience in the form of oral dosing, or an otherwise improved clinical profile. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical program of beloranib in PWS patients and discussions with regulatory authorities.

The most effective current treatment for severe obesity is bariatric surgery, including procedures such as the Roux-en-Y gastric bypass, adjustable gastric banding, sleeve gastrectomy and biliopancreatic diversion. Bariatric surgery produces dramatic and sustained weight loss, ranging on average from 20% to 35% one year post-procedure, and reduces overall mortality, but it can result in numerous complications and adverse events including thrombotic events, such as pulmonary embolism, infection, internal bleeding, pulmonary disease and gastrointestinal obstruction, which sometimes requires reoperation during the post-operative period. Longer-term side effects of bariatric surgery, such as poor nutrient absorption, strictures and hernias, have also been observed.

Bariatric surgery eligibility criteria generally identify surgical candidates as those patients with body mass indices, or BMIs, greater than 40 kg/m ^{2}, or those with BMIs over 35 kg/m^2 who also have a significant and uncontrolled co-morbid condition. Based on these criteria, it is estimated conservatively that there will be at least 16 million adults in the United States eligible for bariatric surgery by the time beloranib or another MetAP2 inhibitor could become available commercially. In addition to the BMI and co-morbidity eligibility criteria, patients need to satisfy a number of other criteria in order to have bariatric surgery: a severely obese patient must not have any known endocrine causes of obesity, a drug or alcohol problem, or an uncontrolled psychological condition, and must understand and appreciate the risks of the surgical intervention. According to the American Society for Metabolic & Bariatric Surgery and to HealthGrades, the average cost of bariatric surgery in the United States is approximately $22,000-$38,000. As a result of these limiting criteria and the financial commitments required, only a few hundred thousand patients undergo bariatric surgery each year even though over 16 million patients in the United States are eligible for the surgery based on BMI alone.

The pharmaceutical industry has undertaken several waves of activity to discover and develop new drugs for the treatment of obesity. Relative to bariatric surgery, pharmaceutical treatments have produced modest efficacy. In addition, existing pharmacotherapeutics for obesity often have undesirable adverse event profiles.

Our Product Pipeline

The following table summarizes our product pipeline and development status of our product candidates for the treatment of indications we are currently pursuing:

Indication	Product Candidate	Stage of Development	Development Status
Obesity and hyperphagia in PWS patients	Beloranib	Phase 2a	• Phase 2a clinical trial completed • Phase 2a clinical trial report expected to be ready in the second quarter of 2014 • Phase 3 clinical program design being finalized and expected to begin in 2014, pending input from regulatory authorities
Craniopharyngioma-associated obesity	Beloranib	Phase 2a	• Phase 2a clinical trial expected to start in the first half of 2014
Severe obesity in the general population	Beloranib	Phase 2a	• Phase 2a clinical trial completed • Phase 2b clinical trial expected to begin in the second half of 2014 • Advancement into pivotal trials under consideration
	Second-generation MetAP2 inhibitors	Pre-clinical	• Development candidates under consideration
Nonalcoholic steatohepatitis, or NASH, nonalcoholic fatty liver disease, abdominal obesity and type 2 diabetes	ZGN-839	Pre-clinical	• Pre-clinical studies ongoing • Investigational New Drug Application, or IND, filing anticipated by the first half of 2015

Company History

Zafgen was founded in 2005 to explore novel approaches to obesity therapeutics, including agents known to inhibit MetAP2 that had been found to drive unprecedented weight loss and metabolic improvements in mice. After performing a wide range of experiments to validate the effects of MetAP2 inhibitors in validated animal models, we committed the full resources of the company to testing the efficacy and safety of MetAP2 inhibition in obese patients and to establishing the feasibility of MetAP2 inhibitors for eventual commercialization. We identified beloranib as a suitable in-licensing candidate, and, in parallel with preparing beloranib for use in otherwise healthy but obese patients, we conducted our own chemistry program to identify compounds with complementary characteristics. After completing studies to establish preliminary safety, mechanism of action, manufacturing feasibility and clinical proof of concept, we advanced beloranib as a clinical development candidate and explored its application in severely obese patient populations. Our early clinical experience highlighted several key aspects of beloranib's actions, including rapid and robust weight loss, changes in circulating hormones known to impact fat metabolism, clinically significant reductions in cardiovascular disease risk markers and a particularly striking impact on hunger.

Beloranib Mechanism of Action

Beloranib is a novel, first-in-class injectable small molecule therapy with a unique mechanism of action that reduces hunger while stimulating the use of stored fat as an energy source. Beloranib is the first anti-obesity agent with the potential to address two important abnormalities that are present in the obese patient—hunger that is inappropriate relative to the amount of energy stored as fat and dysregulation of fat metabolism, which causes more fat to be made and stored in an obese patient than in a lean person. Beloranib acts through potent inhibition of MetAP2, an enzyme that modulates the activity of key cellular processes that control metabolism. MetAP2

inhibitors work, at least in part, by directing MetAP2 binding to cellular stress mediators, thereby reducing the tone of signals that drive lipid synthesis by the liver and fat storage throughout the body. In this manner, MetAP2 inhibition serves the purpose of re-establishing balance to the ways the body packages and metabolizes fat and glucose. MetAP2 inhibitors reduce the production of new fatty acid molecules by the liver and help convert stored fats into useful energy while reducing hunger.

We have completed five clinical trials, including two Phase 2a clinical trials, evaluating beloranib in over 200 patients. Although these clinical trials were of short duration and designed to demonstrate safety and tolerability, significant decreases in both body weight and sense of hunger were observed in patients treated with beloranib when compared to the placebo group. Additional clinical trials of longer-term treatment with beloranib designed to demonstrate efficacy are required before we can submit a New Drug Application for beloranib as a treatment for any indication that we are pursuing. In our planned Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population and our planned Phase 3 clinical program of beloranib as a treatment for PWS patients, patients will be treated with beloranib for a substantially longer period of time than as treated in our earlier clinical trials. In addition, we observed improvements in cardiovascular disease risk factors such as plasma total cholesterol, low density lipoprotein cholesterol and C-reactive protein. Across our completed clinical trials, beloranib has been well-tolerated at doses in the range of 1.0 mg to 2.0 mg administered twice weekly, and has not been associated with serious side effects. Laboratory safety measures, vital signs and electrocardiograms have been unremarkable in all completed clinical trials for all doses of beloranib tested.

Our Strategy

Our objective is to be a leader in the discovery, development and commercialization of novel therapies to significantly improve the health and well-being of patients affected by obesity. Key elements of our strategy include:

- ***Advance the clinical development of beloranib in subpopulations of obese patients, including those with rare conditions, where obesity is a co-morbidity of an underlying condition.*** Diseases in this category include PWS, hypothalamic damage that is caused by trauma, surgical removal of tumors (including craniopharyngioma), radiation therapy of mid-brain tumors and monogenic loss of function mutations, including leptin deficiency and melanocortin receptor subclass 4 mutations. We believe that rare conditions such as PWS afford us an opportunity to rapidly develop and commercialize beloranib using smaller, more focused and less costly clinical trials, relative to those required to develop beloranib for the broader severe obesity population. Beloranib exerts its weight loss effects using a novel mechanism that does not appear to require fully functioning hypothalamic control pathways. We believe this mechanism is well-suited for patients with obesity that is caused by the failure of hypothalamic food intake control mechanisms, in particular the control of relentless and pathological hunger, or hyperphagia.
- ***Advance the clinical development of MetAP2 inhibitors for the treatment of severely obese patients in the general population, including those who are candidates for bariatric surgery.*** We believe the severely obese patient population would benefit from MetAP2 inhibitor treatment through the reduction of body weight and through improvement of other co-morbid conditions. Bariatric surgery results in significant weight loss, but the financial expense and the potential for complications, adverse events and longer-term side effects limit its overall adoption, with only a few hundred thousand patients in the United States undergoing bariatric surgery each year. Existing pharmacotherapies result in less weight loss than surgical options, and these therapies not only have undesirable side effects, but also have risk of abuse.
- ***Leverage the knowledge of our experienced team of drug developers that have deep expertise in the field of obesity, the function of MetAP2 inhibitors and metabolic diseases.*** Our management team has deep expertise in obesity and related metabolic diseases, the function of MetAP2 inhibitors, the strengths and weaknesses of current treatments for obesity and the ability to recognize the potential of novel therapies for the treatment of obesity. Our team is complemented by highly experienced external consultants and collaborators in the areas of drug discovery, development and regulatory approval.

- ***Maintain flexibility in commercializing and maximizing the value of our development programs.*** While we intend to develop and commercialize beloranib for indications such as PWS and other rare conditions causing obesity, we may enter into strategic relationships with biotechnology or pharmaceutical companies to realize the full value of beloranib or our other earlier-stage development programs. For beloranib, we may enter into one or more strategic relationships to access broader geographic markets or additional indications. These relationships could focus on specific patient populations and their caregivers, on regional development or on distribution and sales of beloranib.
- ***Development of other potential product candidates.*** We have a second program focused on the delivery of MetAP2 inhibitors with targeted tissue distribution that shows early promise in animal models of abdominal obesity, fatty liver and type 2 diabetes. Our lead MetAP2 inhibitor in this class of molecules is called ZGN-839. We believe that compounds such as ZGN-839 will have utility in the treatment of type 2 diabetes in humans, and will further cause improvements in cardiovascular risk factors including low density lipoprotein cholesterol. We plan to advance multiple candidate drugs into early development to establish clinical proof of concept, safety and tolerability of these molecules as a way to leverage our internal know-how in metabolic diseases and the effects of MetAP2 inhibitors. These compounds, typified by ZGN-839, could provide additional short-term value to our company through focused development partnerships and collaborations.

Risks Associated With Our Business

Our business is subject to many risks and uncertainties of which you should be aware before you decide to invest in our common stock. These risks are discussed more fully under "Risk Factors" in this prospectus. Some of these risks include:

- We depend almost entirely on the success of one product candidate, beloranib, which is still in Phase 2 clinical development. We cannot be certain that we will be able to obtain regulatory approval for, or successfully commercialize, beloranib.
- Positive results from early clinical trials of beloranib are not necessarily predictive of the results of later clinical trials of beloranib. If we cannot replicate the positive results from our earlier clinical trials of beloranib in our later clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize beloranib. It may further be necessary to validate different or additional instruments for measuring subjective endpoints, and to show that beloranib has clinically meaningful impact on those endpoints in order to obtain regulatory approval.
- Failures or delays in the commencement or completion of our planned clinical trials of beloranib could result in increased costs to us and could delay, prevent or limit our ability to generate revenue and continue our business.
- We rely, and expect that we will continue to rely, on third parties to conduct any future clinical trials for beloranib. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize beloranib and our business could be substantially harmed.
- The number of patients suffering from PWS and craniopharyngioma is small and has not been established with precision. If the actual number of patients with either of these conditions is smaller than we estimate or if any approval that we obtain is based on a narrower definition of these patient populations, our revenue and ability to achieve profitability will be adversely affected, possibly materially.
- If we are unable to adequately protect our proprietary technology or maintain issued patents which are sufficient to protect beloranib, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.
- We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing beloranib or our other product candidates, if approved.

- Our future success depends on our ability to retain our President and Chief Executive Officer, and to attract, retain and motivate qualified personnel.

Implications of Being an Emerging Growth Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- reduced disclosure about our executive compensation arrangements;
- no non-binding advisory votes on executive compensation or golden parachute arrangements; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of $1 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the last day of the fiscal year in which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, or SEC, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock. Also, we have irrevocably elected to "opt out" of the exemption for the delayed adoption of certain accounting standards and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Corporate History and Information

We were incorporated under the laws of the State of Delaware in November 2005. Our principal executive office is located at One Broadway, 8 th Floor, Cambridge, Massachusetts, and our telephone number is (617) 401-3041. Our website address is *www.zafgen.com*. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

We own various U.S. federal trademark registrations and applications and unregistered trademarks, including the following trademarks referred to in this prospectus: *ZAFGEN*® and our corporate logo. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

THE OFFERING

Common stock offered by us	shares
Common stock to be outstanding after this offering	shares
Over-allotment option	We have granted the underwriters an option to purchase a maximum of additional shares of common stock from us. The underwriters can exercise this option at any time within 30 days from the date of this prospectus.
Use of Proceeds	We estimate that we will receive net proceeds from the sale of shares of our common stock in this offering of approximately $ million, or $ million if the underwriters fully exercise their option to purchase additional shares, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering to advance the clinical development of beloranib as a treatment for obesity and hyperphagia in PWS patients and craniopharyngioma-associated obesity, to advance the clinical development of beloranib as a treatment for severe obesity in the general population, to continue the development of ZGN-839 and to fund new and ongoing research and development activities, working capital and other general corporate purposes. See "Use of Proceeds" for additional information.
Risk Factors	You should read carefully "Risk Factors" beginning on page 12 and other information included in this prospectus for a discussion of factors that you should consider before deciding to invest in shares of our common stock.
Proposed NASDAQ Global Market symbol	ZFGN

The number of shares of common stock to be outstanding after this offering is based on 4,580,669 shares of common stock outstanding as of February 28, 2014 and excludes:

- 9,503,975 shares of common stock issuable upon exercise of outstanding options as of February 28, 2014 at a weighted average exercise price of $0.47 per share;
- 1,056,257 shares of common stock reserved for future issuance under our Amended and Restated 2006 Stock Option Plan, or 2006 Stock Option Plan, as of February 28, 2014; and
- shares of our common stock reserved for future issuance under our 2014 Stock Option and Incentive Plan, or 2014 Stock Option Plan, which will become effective upon the completion of this offering.

Except as otherwise indicated, all information in this prospectus assumes or gives effect to:

- the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 94,687,505 shares of our common stock upon the completion of this offering;

- no exercise of the outstanding options described above;
- no exercise by the underwriters of their option to purchase up to an additional shares of our common stock in this offering;
- our amended and restated certificate of incorporation and our amended and restated by-laws, both of which we will file immediately prior to the completion of this offering; and
- a -for- reverse stock split of our common stock to be effected prior to the completion of this offering.

SUMMARY CONSOLIDATED FINANCIAL DATA

You should read the following summary consolidated financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of this prospectus. We have derived the consolidated statement of operations data for the years ended December 31, 2011, 2012 and 2013 and for the cumulative period from inception (November 22, 2005) through December 31, 2013 and the consolidated balance sheet data as of December 31, 2013 from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of results that should be expected in the future.

	Year Ended December 31,			Cumulative Period from Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
	(in thousands, except per share data)			
Statement of Operations Data:				
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	11,403	11,544	9,561	54,290
General and administrative	1,751	2,247	4,219	14,309
Total operating expenses	13,154	13,791	13,780	68,599
Loss from operations	(13,154)	(13,791)	(13,780)	(68,599)
Other income (expense):				
Interest income	—	—	—	120
Interest expense	—	(97)	—	(106)
Foreign currency transaction gains (losses), net	(3)	8	(247)	(243)
Total other expense, net	(3)	(89)	(247)	(229)
Net loss	(13,157)	(13,880)	(14,027)	(68,828)
Accretion of redeemable convertible preferred stock to redemption value	(53)	(67)	(213)	(554)
Net loss attributable to common stockholders	$ (13,210)	$ (13,947)	$ (14,240)	$ (69,382)
Net loss per share attributable to common stockholders, basic and diluted (1)	$ (3.05)	$ (3.13)	$ (3.11)	
Weighted average common shares outstanding, basic and diluted (1)	4,327	4,457	4,578	
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited) (2)			$ (0.17)	
Pro forma weighted average common shares outstanding, basic and diluted (unaudited) (2)			84,190	

	As of December 31, 2013		
	Actual	Pro Forma(3)	Pro Forma As Adjusted(4)
		(in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 35,517	$ 35,517	$
Working capital(5)	34,443	34,443	
Total assets	38,138	38,138	
Redeemable convertible preferred stock	103,797	—	
Total stockholders' equity (deficit)	(68,574)	35,223	

(1) See Note 9 to our consolidated financial statements for further details on the calculation of basic and diluted net loss per share attributable to common stockholders.

(2) See Note 9 to our consolidated financial statements for further details on the calculation of basic and diluted pro forma net loss per share attributable to common stockholders.

(3) Pro forma balance sheet data give effect to the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 94,483,404 shares of our common stock upon the completion of this offering.

(4) Pro forma as adjusted balance sheet data give effect to the pro forma balance sheet data adjustments described in footnote (3) above as well as the sale by us of shares of our common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $ million, assuming the assumed initial public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted data above is illustrative only and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing.

(5) We define working capital as current assets less current liabilities.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all other information in this prospectus, including our consolidated financial statements and related notes, before investing in our common stock. Any of the risk factors we describe below could adversely affect our business, financial condition or results of operations. The market price of our common stock could decline if one or more of these risks or uncertainties actually occur, causing you to lose all or part of the money you paid to buy our common stock. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business. Certain statements below are forward-looking statements. See "Cautionary Note Regarding Forward-Looking Statements" in this prospectus.

Risks Related to Product Development, Regulatory Approval and Commercialization

We depend almost entirely on the success of one product candidate, beloranib, which is still in Phase 2 clinical development. We cannot be certain that we will be able to obtain regulatory approval for, or successfully commercialize, beloranib.

We currently have only one product candidate, beloranib, in clinical development, and our business depends almost entirely on its successful clinical development, regulatory approval and commercialization. We currently have no drug products for sale and may never be able to develop marketable drug products. Beloranib, which is currently in Phase 2 clinical development as a treatment for obesity and hyperphagia in Prader-Willi Syndrome, or PWS, craniopharyngioma-associated obesity, and severe obesity in the general population, will require substantial additional clinical development, testing and regulatory approval before we are permitted to commence its commercialization. Our other product candidates, including ZGN-839, are still in pre-clinical development stages. The clinical trials of our product candidates are, and the manufacturing and marketing of our product candidates will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to test and, if approved, market any product candidate. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate through pre-clinical testing and clinical trials that the product candidate is safe and effective for use in each target indication. This process can take many years and may include post-marketing studies and surveillance, which will require the expenditure of substantial resources beyond the proceeds we raise in this offering. Of the large number of drugs in development in the United States, only a small percentage will successfully complete the U.S. Food and Drug Administration, or FDA, regulatory approval process and is commercialized. Accordingly, even if we are able to obtain the requisite financing to continue to fund our development and clinical trials, we cannot assure you that beloranib or any other of our product candidates will be successfully developed or commercialized.

We are not permitted to market beloranib in the United States until we receive approval of a New Drug Application, or an NDA, from the FDA, or in any foreign countries until we receive the requisite approval from such countries. We recently completed two Phase 2a clinical trials evaluating beloranib's ability to reduce body weight and to improve hyperphagia, one in patients with PWS and one in severely obese patients. We expect that the FDA will require us to conduct at least one pivotal trial in order to submit an NDA for beloranib as a treatment for PWS patients. However, meeting requirements of the FDA or other regulatory authorities may require that we conduct additional pivotal trials. We expect that the FDA will also require us to complete a Phase 2b clinical trial and at least two Phase 3 clinical trials to submit an NDA for beloranib as a treatment for severe obesity in the general population, and may require that we conduct a cardiovascular outcomes trial. Pursuant to the FDA's February 2007 draft guidance to industry on the development of weight management drugs, in order to reasonably estimate the safety of a weight-management drug, Phase 3 clinical trials must randomize approximately 3,000 subjects to active doses of the product and 1,500 subjects to placebo for one year of treatment. We have not yet commenced any of these clinical trials. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014 after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities. To initiate a Phase 3 clinical program for beloranib in PWS patients, we will also need to complete certain pre-clinical animal studies, obtain sufficient supply of finished drug product, which is currently

being manufactured by a third party, and validate the instrument used to measure subjective endpoints in the trial, such as hunger. We plan to initiate a Phase 2a clinical trial of beloranib as a treatment for craniopharyngioma-associated obesity in the first half of 2014. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population in the second half of 2014. We are also evaluating additional proprietary methionine aminopeptidase 2, or MetAP2, inhibitors beyond beloranib as potential development candidates that would provide increased patient convenience in the form of oral dosing, or an otherwise improved clinical profile. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical program of beloranib in PWS patients and discussions with regulatory authorities. Accordingly, obtaining approval of an NDA is a complex, lengthy, expensive and uncertain process, and the FDA may delay, limit or deny approval of beloranib for many reasons, including, among others:

- we may not be able to demonstrate that beloranib is safe and effective in treating obesity and hyperphagia in PWS patients, craniopharyngioma-associated obesity or severe obesity in the general population, to the satisfaction of the FDA;
- the results of our clinical trials may not meet the level of statistical or clinical significance required by the FDA for marketing approval;
- the FDA may disagree with the number, design, size, conduct or implementation of our clinical trials;
- the FDA may require that we conduct additional clinical trials;
- the FDA or the applicable foreign regulatory agency may not approve the formulation, labeling or specifications of beloranib;
- the contract research organizations, or CROs, that we retain to conduct our clinical trials may take actions outside of our control that materially adversely impact our clinical trials;
- the FDA may find the data from pre-clinical studies and clinical trials insufficient to demonstrate that beloranib's clinical and other benefits outweigh its safety risks;
- the FDA may disagree with our interpretation of data from our pre-clinical studies and clinical trials;
- the FDA may not accept data generated at our clinical trial sites;
- if our NDA, if and when submitted, is reviewed by an advisory committee, the FDA may have difficulties scheduling an advisory committee meeting in a timely manner or the advisory committee may recommend against approval of our application or may recommend that the FDA require, as a condition of approval, additional pre-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions;
- the FDA may require development of a Risk Evaluation and Mitigation Strategy, or REMS, as a condition of approval or post-approval;
- the FDA or the applicable foreign regulatory agency may not approve the manufacturing processes or facilities of third-party manufacturers with which we contract; or
- the FDA may change its approval policies or adopt new regulations.

Any of these factors, many of which are beyond our control, could jeopardize our ability to obtain regulatory approval for and successfully market beloranib. Moreover, because our business is almost entirely dependent upon this one product candidate, any such setback in our pursuit of regulatory approval would have a material adverse effect on our business and prospects.

Positive results from early clinical trials of beloranib are not necessarily predictive of the results of later clinical trials of beloranib. If we cannot replicate the positive results from our earlier clinical trials of beloranib in our later clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize beloranib. It may further be necessary to validate different or additional instruments for measuring subjective endpoints, and to show that beloranib has clinically meaningful impact on those endpoints in order to obtain regulatory approval.

Positive results from our Phase 1 and Phase 2a clinical trials of beloranib may not necessarily be predictive of the results from required later clinical trials. Similarly, even if we are able to complete our planned Phase 2b or Phase 3 clinical trials of beloranib according to our current development timeline, the positive results from our Phase 1 and Phase 2a clinical trials of beloranib may not be replicated in our Phase 2b or Phase 3 clinical trial results. We believe that the design of our Phase 3 clinical program of beloranib as a treatment for obesity and hyperphagia in PWS patients will differ in several respects from our recently completed Phase 2a clinical trial for PWS. For example, PWS patients will not only be living in closely-controlled PWS-specific group homes but also will be treated for greater than four weeks. In later-stage clinical trials, we will likely be subject to more rigorous statistical analyses. For example, the results of our Phase 2a clinical trial for severe obesity were based on a per protocol analysis of patients who completed the 12-week dosing in the clinical trial. We expect later-stage clinical trials to be evaluated based on an intent-to-treat analysis that includes all patients enrolled in the clinical trial, which may lead to different results. In addition, prior to commencing our Phase 3 clinical program of beloranib as a treatment for obesity and hyperphagia in PWS patients, we will need to validate the questionnaire for measuring subjective endpoints such as hunger, hyperphagia or quality of life to the satisfaction of the applicable regulatory authorities. This can be a lengthy process. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in early-stage development, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, pre-clinical findings made while clinical trials were underway or safety or efficacy observations made in clinical trials, including previously unreported adverse events. Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials nonetheless failed to obtain FDA approval. If we fail to produce positive results in our planned Phase 2b or Phase 3 clinical trials of beloranib, the development timeline and regulatory approval and commercialization prospects for our leading product candidate, and, correspondingly, our business and financial prospects, would be materially adversely affected.

Failures or delays in the commencement or completion of our planned clinical trials of beloranib could result in increased costs to us and could delay, prevent or limit our ability to generate revenue and continue our business.

We plan to commence a Phase 3 clinical program of beloranib as a treatment for obesity and hyperphagia in PWS patients, a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population and a Phase 2a clinical trial of beloranib as a treatment for craniopharyngioma-associated obesity. Successful completion of such clinical trials is a prerequisite to submitting an NDA to the FDA and, consequently, the ultimate approval and commercial marketing of beloranib. We do not know whether any of these Phase 2a, Phase 2b or Phase 3 clinical trials will begin or be completed on schedule, if at all, as the commencement and completion of clinical trials can be delayed or prevented for a number of reasons, including, among others:

- the FDA may deny permission to proceed with our planned Phase 2a, Phase 2b or Phase 3 clinical trials or any other clinical trials we may initiate, or may place a clinical trial on hold;
- delays in filing or receiving approvals or additional INDs that may be required;
- negative results from our ongoing pre-clinical studies;
- delays in reaching or failing to reach agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- inadequate quantity or quality of a product candidate or other materials necessary to conduct clinical trials, for example delays in the manufacturing of sufficient supply of finished drug product;

- difficulties obtaining Institutional Review Board, or IRB, approval to conduct a clinical trial at a prospective site or sites;
- challenges in recruiting and enrolling patients to participate in clinical trials, including the size and nature of the patient population, the proximity of patients to trial sites, eligibility criteria for the clinical trial, the nature of the clinical trial protocol, the availability of approved effective treatments for the relevant disease and competition from other clinical trial programs for similar indications;
- severe or unexpected drug-related side effects experienced by patients in a clinical trial, including side effects previously identified in our completed clinical trials;
- delays in validating any self-reported measures of hunger and related endpoints utilized in a clinical trial;
- the FDA may disagree with our clinical trial design and our interpretation of data from clinical trials, or may change the requirements for approval even after it has reviewed and commented on the design for our clinical trials;
- reports from pre-clinical or clinical testing of other weight loss therapies that raise safety or efficacy concerns; and
- difficulties retaining patients who have enrolled in a clinical trial but may be prone to withdraw due to rigors of the clinical trials, lack of efficacy, side effects, personal issues or loss of interest.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRBs, at the sites where the IRBs are overseeing a clinical trial, a data and safety monitoring board, or DSMB, overseeing the clinical trial at issue or other regulatory authorities due to a number of factors, including, among others:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities that reveals deficiencies or violations that require us to undertake corrective action, including the imposition of a clinical hold;
- unforeseen safety issues, including any that could be identified in our ongoing pre-clinical carcinogenicity studies, adverse side effects or lack of effectiveness;
- changes in government regulations or administrative actions;
- problems with clinical supply materials; and
- lack of adequate funding to continue the clinical trial.

Changes in regulatory requirements, FDA guidance or unanticipated events during our clinical trials of beloranib may occur, which may result in changes to clinical trial protocols or additional clinical trial requirements, which could result in increased costs to us and could delay our development timeline.

Changes in regulatory requirements, FDA guidance or unanticipated events during our clinical trials may force us to amend clinical trial protocols or the FDA may impose additional clinical trial requirements. For instance, the FDA issued draft guidance on developing products for weight management in February 2007, but this guidance may be revised in the near future. In March 2012, the FDA's Endrocrinologic and Metabolic Drugs Advisory Committee met to discuss possible changes to how the FDA evaluates the cardiovascular safety of weight-management drugs. Amendments to our clinical trial protocols would require resubmission to the FDA and IRBs for review and approval, which may adversely impact the cost, timing or successful completion of a clinical trial. If we experience delays completing, or if we terminate, any of our clinical trials, or if we are required to conduct additional clinical trials, the commercial prospects for beloranib may be harmed and our ability to generate product revenue will be delayed.

We rely, and expect that we will continue to rely, on third parties to conduct any future clinical trials for beloranib. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize beloranib and our business could be substantially harmed.

We enter into agreements with third-party CROs to provide monitors for and to manage data for our ongoing clinical trials. We rely heavily on these parties for execution of clinical trials for beloranib and control only certain aspects of their activities. As a result, we have less direct control over the conduct, timing and completion of these clinical trials and the management of data developed through the clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials and may subject us to unexpected cost increases that are beyond our control. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on CROs does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with current Good Clinical Practices, or cGCPs, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any products in clinical development. The FDA enforces these cGCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs. In addition, our clinical trials must be conducted with product produced under current Good Manufacturing Practices, or cGMPs, regulations and will require a large number of test subjects. Our failure or the failure of our CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action up to and including civil and criminal penalties.

Although we do design our clinical trials for beloranib, CROs conduct all of the clinical trials. As a result, many important aspects of our drug development programs are outside of our direct control. In addition, the CROs may not perform all of their obligations under arrangements with us or in compliance with regulatory requirements, but we remain responsible and are subject to enforcement action that may include civil penalties up to and including criminal prosecution for any violations of FDA laws and regulations during the conduct of our clinical trials. If the CROs do not perform clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development and commercialization of beloranib may be delayed or our development program materially and irreversibly harmed. We cannot control the amount and timing of resources these CROs devote to our program or beloranib. If we are unable to rely on clinical data collected by our CROs, we could be required to repeat, extend the duration of, or increase the size of our clinical trials and this could significantly delay commercialization and require significantly greater expenditures.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other

reasons, any such clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize beloranib. As a result, our financial results and the commercial prospects for beloranib in the subject indication would be harmed, our costs could increase and our ability to generate revenue could be delayed.

The number of patients suffering from PWS and craniopharyngioma is small and has not been established with precision. If the actual number of patients with either of these conditions is smaller than we estimate or if any approval that we obtain is based on a narrower definition of these patient populations, our revenue and ability to achieve profitability will be adversely affected, possibly materially.

There is no current patient registry or other method of establishing with precision the actual number of patients with PWS or craniopharyngioma in any geography. Published population studies estimate that the prevalence of PWS in the United States and in the European Union ranges from 1 in 8,000 to 1 in 50,000. Published population studies estimate that the incidence of craniopharyngioma is 0.13 to 0.17 per 100,000 per year, or approximately 400 to 500 cases per year in the United States and 650 to 850 cases per year in the European Union. The total addressable market opportunity for beloranib for the treatment of patients with PWS or craniopharyngioma-associated obesity will ultimately depend upon, among other things, the diagnosis criteria included in the final label for beloranib, if approved for sale for these indications, acceptance by the medical community and patient access, product pricing and reimbursement. If the actual number of PWS or craniopharyngioma patients is lower than we believe or if any approval that we obtain is based on a narrower definition of these patient populations, then the potential markets for beloranib for these indications will be smaller than we anticipate.

In addition, we currently plan to seek approval of beloranib initially for the treatment adult patients with PWS and craniopharyngioma-associated obesity. We are currently engaged in discussions with the FDA regarding the age ranges for adult patients, adolescent patients, or pediatric patients. Approximately 50% of PWS patients are 13 years of age or older. To support approval for younger patients, we will need to conduct pediatric clinical trials of beloranib for the treatment of pediatric and adolescent patients with PWS or craniopharyngioma-associated obesity, but we do not yet have plans regarding when these trials will commence. As a result, any FDA approval would likely, at least initially, be limited to use for treating adult patients with PWS or craniopharyngioma-associated obesity. This would limit our initial product revenue and may make it more difficult for us to achieve or maintain profitability.

We rely completely on third-party suppliers to manufacture our clinical drug supplies for beloranib, and we intend to rely on third parties to produce commercial supplies of beloranib and pre-clinical, clinical and commercial supplies of any future product candidate.

We do not currently have, nor do we plan to acquire, the infrastructure or capability to internally manufacture our clinical drug supply of beloranib, or any future product candidates, for use in the conduct of our pre-clinical studies and clinical trials, and we lack the internal resources and the capability to manufacture any product candidates on a clinical or commercial scale. The facilities used by our contract manufacturers to manufacture the active pharmaceutical ingredient and final drug product must be approved by the FDA and other comparable foreign regulatory agencies pursuant to inspections that would be conducted after we submit our NDA or relevant foreign regulatory submission to the applicable regulatory agency.

We do not control the manufacturing process of, and are completely dependent on, our contract manufacturers to comply with cGMPs for manufacture of both active drug substances and finished drug products. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel. Furthermore, all of our contract manufacturers are engaged with other companies to supply

and/or manufacture materials or products for such companies, which exposes our manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our contract manufacturers' facilities generally. If the FDA or an applicable foreign regulatory agency does not approve these facilities for the manufacture of our product candidates or if it withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would adversely impact our ability to develop, obtain regulatory approval for or market our product candidates.

We are currently in the process of manufacturing finished drug product for use in our upcoming clinical trials. Sterile drug substance is currently in hand. Finished drug product, diluent and placebo are expected to be available in the third quarter of 2014. Aside from our planned Phase 2a clinical trial in patients with craniopharyngioma-associated obesity, we will not be able to commence any additional clinical trials without the production of additional finished drug product. The manufacturing process is under active development and these projections could change based on delays encountered with manufacturing activities, equipment scheduling and material lead times. Any such delays in the manufacturing of finished drug product could delay our planned clinical trials of beloranib, which could delay, prevent or limit our ability to generate revenue and continue our business.

We do not have long-term supply agreements in place with our contractors, and each batch of beloranib is individually contracted under a quality and supply agreement. If we engage new contractors, such contractors must be approved by the FDA and other applicable foreign regulatory agencies. We plan to continue to rely upon contract manufacturers and, potentially, collaboration partners to manufacture commercial quantities of beloranib, if approved. Our current scale of manufacturing is adequate to support all of our needs for clinical trial supplies and launch for orphan markets. For peak usage in orphan markets and for indications with larger populations of affected patients, we will need to identify contract manufacturers or partners to produce beloranib on a larger scale.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell beloranib, we may not be able to generate any revenue.

We do not currently have an infrastructure for the sales, marketing and distribution of pharmaceutical products. In order to market beloranib, if approved by the FDA or any other regulatory body, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, or if we are unable to do so on commercially reasonable terms, our business, results of operations, financial condition and prospects will be materially adversely affected.

Even if we receive marketing approval for beloranib in the United States, we may never receive regulatory approval to market beloranib outside of the United States.

We intend to pursue marketing approval of beloranib in the European Union and in other countries worldwide. In order to market any product outside of the United States, we must establish and comply with the numerous and varying safety, efficacy and other regulatory requirements of other countries. Approval procedures vary among countries and can involve additional product candidate testing and additional administrative review periods. The time required to obtain approvals in other countries might differ from that required to obtain FDA approval. The marketing approval processes in other countries may implicate all of the risks detailed above regarding FDA approval in the United States as well as other risks. In particular, in many countries outside of the United States, products must receive pricing and reimbursement approval before the product can be commercialized. Obtaining this approval can result in substantial delays in bringing products to market in such countries. Marketing approval in one country does not ensure marketing approval in another, but a failure or delay in obtaining marketing approval in one country may have a negative effect on the regulatory process in others. Failure to obtain marketing approval in other countries or any delay or other setback in obtaining such

approval would impair our ability to market beloranib in such foreign markets. Any such impairment would reduce the size of our potential market, which could have a material adverse impact on our business, results of operations and prospects.

Even if we receive marketing approval for beloranib, it may not achieve broad market acceptance, which would limit the revenue that we generate from its sales.

The commercial success of beloranib, if approved by the FDA or other applicable regulatory authorities, will depend upon the awareness and acceptance of beloranib among the medical community, including physicians, patients and healthcare payors. Market acceptance of beloranib, if approved, will depend on a number of factors, including, among others:

- beloranib's demonstrated ability to treat obesity and hyperphagia in PWS patients, craniopharyngioma-associated obesity, or severe obesity in the general population and, if required by any applicable regulatory authority in connection with the approval for these indications, to provide patients with incremental health benefits, as compared with other available weight loss therapies, devices or surgeries;
- the relative convenience and ease of subcutaneous injections as the necessary method of administration of beloranib, including as compared with other treatments for severely obese patients;
- the prevalence and severity of any adverse side effects associated with beloranib, such as nausea, vomiting, headaches and difficulty sleeping or falling asleep;
- limitations or warnings contained in the labeling approved for beloranib by the FDA;
- availability of alternative treatments, including a number of competitive obesity therapies already approved or expected to be commercially launched in the near future;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- publicity concerning our products or competing products and treatments;
- pricing and cost effectiveness;
- the effectiveness of our sales and marketing strategies;
- our ability to increase awareness of beloranib through marketing efforts;
- our ability to obtain sufficient third-party coverage or reimbursement; and
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage.

If beloranib is approved but does not achieve an adequate level of acceptance by patients, physicians and payors, we may not generate sufficient revenue from beloranib to become or remain profitable. Before granting reimbursement approval, healthcare payors may require us to demonstrate that, in addition to treating obesity in patients, beloranib also provides incremental health benefits to patients. Our efforts to educate the medical community and third-party payors about the benefits of beloranib may require significant resources and may never be successful.

Our product candidates may cause undesirable side effects that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities. In our recently completed Phase 2a clinical trials

evaluating beloranib's ability to reduce body weight and to improve hyperphagia, the main adverse events, or AEs, including those leading to drop-outs, in patients dosed with beloranib, have been sleep disturbances, principally manifested as delayed onset of sleep, nausea and vomiting.

The safety data we have disclosed to date represents our interpretation of the data at the time of disclosure and it is subject to our further review and analysis. There have been no serious adverse events, or SAEs, attributed to beloranib in our clinical trials. However, SAEs that are not characterized by clinical investigators as possibly related to beloranib or SAEs that occur in small numbers may not be disclosed to the public until such time the various documents submitted to the FDA as part of the approval process are made public. We are unable to determine if the subsequent disclosure of SAEs will have an adverse effect on our stock price. In addition, our interpretation of the safety data from our clinical trials is contingent upon the review and ultimate approval of the FDA. The FDA may not agree with our methods of analysis or our interpretation of the results.

Further, if beloranib receives marketing approval and we or others identify undesirable side effects caused by the product (or any other similar product) after the approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of the product;
- regulatory authorities may require the addition of labeling statements, such as a "boxed" warning or a contraindication;
- we may be required to change the way the product is distributed or administered, conduct additional clinical trials or change the labeling of the product;
- we may decide to remove the products from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking our product candidates; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate and could substantially increase the costs of commercializing our product candidates and significantly impact our ability to successfully commercialize our product candidates and generate revenues.

Even if we receive marketing approval for beloranib, we may still face future development and regulatory difficulties.

Even if we receive marketing approval for beloranib, regulatory authorities may still impose significant restrictions on beloranib's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. Beloranib will also be subject to ongoing FDA requirements governing the labeling, packaging, storage and promotion of the product and recordkeeping and submission of safety and other post-market information. The FDA has significant post-market authority, including, for example, the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate serious safety risks related to the use of a drug. The FDA also has the authority to require, as part of an NDA or post-approval, the submission of a REMS. Any REMS required by the FDA may lead to increased costs to assure compliance with new post-approval regulatory requirements and potential requirements or restrictions on the sale of approved products, all of which could lead to lower sales volume and revenue.

Manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMPs and other regulations. If we or a regulatory agency discover problems with beloranib, such as adverse events of unanticipated severity or frequency, or problems with the facility where beloranib is manufactured, a regulatory agency may impose

restrictions on beloranib, the manufacturer or us, including requiring withdrawal of beloranib from the market or suspension of manufacturing. If we, beloranib or the manufacturing facilities for beloranib fail to comply with applicable regulatory requirements, a regulatory agency may, among other things:

- issue warning letters or untitled letters;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw marketing approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications submitted by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products, refuse to permit the import or export of products, or request that we initiate a product recall.

Competing technologies could emerge, including devices and surgical procedures, adversely affecting our opportunity to generate revenue from the sale of beloranib.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We have competitors in a number of jurisdictions, many of which have substantially greater name recognition, commercial infrastructures and financial, technical and personnel resources than we have. Established competitors may invest heavily to quickly discover and develop novel compounds that could make beloranib obsolete or uneconomical. Any new product that competes with an approved product may need to demonstrate compelling advantages in efficacy, convenience, tolerability and safety to be commercially successful. Other competitive factors, including generic competition, could force us to lower prices or could result in reduced sales. In addition, new products developed by others could emerge as competitors to beloranib. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition and operations will suffer.

There are no current pharmacological treatments for regulating hunger and hyperphagia-related behaviors of PWS patients and craniopharyngioma patients, and bariatric surgery is contraindicated in PWS patients and not frequently employed in craniopharyngioma patients. We are aware of a clinical trial planned by Ferring Pharmaceuticals, Inc. to evaluate the use of oxytocin, a brain peptide hormone hypothesized to increase trust, reduce anxiety and improve behavior in patients with PWS. We also are aware of a clinical trial being planned by Essentialis, Inc. to evaluate the safety and tolerability of controlled-release diazoxide in PWS patients and to explore the effects of diazoxide on hyperphagia-related behaviors and energy expenditure. In addition, any of our competitors may develop a drug to treat PWS patients at any time. We are not aware of any clinical trials of drugs specifically targeting patients with craniopharyngioma-associated obesity, or in severe obesity in general.

Our potential competitors in the severe obesity market include bariatric surgery providers, and, in addition, other potential approaches which utilize various implantable devices or surgical tools are in development, by companies such as Allergan, Inc., Boston Scientific Corporation, Covidien Ltd., EnteroMedics, Inc., GI Dynamics, Inc., Johnson & Johnson and Medtronic, Inc. In addition, beloranib will compete with orlistat, phentermine/topiramate and lorcaserin, three recently approved and currently marketed pharmaceutical products in the United States for the treatment of obesity, and several older agents, indicated for short-term administration, including phentermine, phendimetrazine, benzphetamine and diethylpropion. Orlistat is marketed in the United States by Roche Group under the brand name Xenical and over-the-counter in the United States at half the prescribed dose by GlaxoSmithKline under the brand name alli. In June 2013, Arena Pharmaceuticals, Inc. launched its lorcaserin product, which is marketed in the United States under the name Belviq and in September 2012, Vivus, Inc. commercially launched its combination product, phentermine/topiramate, under the trade name Qsymia. Despite the large market opportunity for anti-obesity agents, there are relatively few competitive products in late-stage clinical development. In December 2013, Orexigen Therapeutics, Inc., which is developing

Contrave, resubmitted its NDA based on a recently completed cardiovascular outcomes trial. Other companies pursuing pharmaceutical treatments for obesity include Neurosearch A/S, Novo Nordisk A/S and Takeda Pharmaceutical Company Limited.

Our future growth depends, in part, on our ability to penetrate foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability will depend, in part, on our ability to commercialize beloranib in foreign markets for which we intend to rely on collaboration with third parties. If we commercialize beloranib in foreign markets, we would be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for beloranib in foreign markets;
- our inability to directly control commercial activities because we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of beloranib could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

We are subject to healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and others will play a primary role in the recommendation and prescription of beloranib, if approved. Our future arrangements with third-party payors will expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute beloranib, if we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- The federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid.
- The federal False Claims Act imposes criminal and civil penalties, including those from civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government.
- The federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, imposes criminal and civil liability for

executing a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information.

- The federal false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services.
- The federal transparency requirements, sometimes referred to as the "Sunshine Act," under the Patient Protection and Affordable Care Act, require manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests.
- Analogous state laws and regulations, such as state anti-kickback and false claims laws and transparency laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures and drug pricing.

Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could be costly. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations, including anticipated activities to be conducted by our sales team, were found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines and exclusion from government funded healthcare programs, such as Medicare and Medicaid, any of which could substantially disrupt our operations. If any of the physicians or other providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

The FDA and other regulatory agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, such as beloranib, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we receive marketing approval for beloranib as a treatment for obesity and hyperphagia in PWS patients or craniopharyngioma-associated obesity, physicians may nevertheless prescribe beloranib to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of beloranib, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

Even if approved, reimbursement policies could limit our ability to sell beloranib.

Market acceptance and sales of beloranib will depend on reimbursement policies and may be affected by healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels for those medications. Cost containment is a primary concern in the U.S. healthcare industry and elsewhere.

Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that reimbursement will be available for beloranib and, if reimbursement is available, the level of such reimbursement. Reimbursement may impact the demand for, or the price of, beloranib. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize beloranib.

In some foreign countries, particularly in Canada and European countries, the pricing of prescription pharmaceuticals is subject to strict governmental control. In these countries, pricing negotiations with governmental authorities can take six to 12 months or longer after the receipt of regulatory approval and product launch. To obtain favorable reimbursement for the indications sought or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of beloranib with other available therapies. If reimbursement for beloranib is unavailable in any country in which we seek reimbursement, if it is limited in scope or amount, if it is conditioned upon our completion of additional clinical trials, or if pricing is set at unsatisfactory levels, our operating results could be materially adversely affected.

Even though we have received orphan drug designation for PWS, we may not receive orphan drug exclusivity for beloranib.

As part of our business strategy, we have obtained orphan drug designation in the United States for beloranib for the treatment of patients with PWS. In the United States, the company that first obtains FDA approval for a designated orphan drug for the specified rare disease or condition receives orphan drug marketing exclusivity for that drug for a period of seven years. This orphan drug exclusivity prevents the FDA from approving another application, including a full NDA to market the same drug for the same orphan indication, except in very limited circumstances, including when the FDA concludes that the later drug is safer, more effective or makes a major contribution to patient care. For purposes of small molecule drugs, the FDA defines “same drug” as a drug that contains the same active chemical entity and is intended for the same use as the drug in question. To obtain orphan drug exclusivity for a drug that shares the same active chemical entity as an already orphan designated drug, it must be demonstrated to the FDA that the drug is safer or more effective than the approved orphan designated drug, or that it makes a major contribution to patient care. In addition, a designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition or if another drug with the same active moiety is determined to be safer, more effective, or represents a major contribution to patient care.

Our product development programs for candidates other than beloranib may require substantial financial resources and may ultimately be unsuccessful.

In addition to the development of beloranib, we may pursue development of our other early-stage development programs. None of our other potential product candidates has commenced any clinical trials, and there are a number of FDA requirements that we must satisfy before we can commence clinical trials. Satisfaction of these requirements will entail substantial time, effort and financial resources. We may never satisfy these requirements. Any time, effort and financial resources we expend on our other early-stage development programs may adversely affect our ability to continue development and commercialization of beloranib, and we may never commence clinical trials of such development programs despite expending significant resources in pursuit of their development. If we do commence clinical trials of our other potential product candidates, such product candidates may never be approved by the FDA.

Risks Relating to Our Intellectual Property Rights

If we are unable to adequately protect our proprietary technology or maintain issued patents which are sufficient to protect beloranib, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.

Our commercial success will depend in part on our success in obtaining and maintaining issued patents and other intellectual property rights in the United States and elsewhere and protecting our proprietary technology. If we do not adequately protect our intellectual property and proprietary technology, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability.

Our owned and licensed patents and patent applications relate to beloranib compositions of matter, formulations, polymorphs, methods of treating obesity using dosing regimens of beloranib, and methods of treating hypothalamic obesity. The issued U.S. and European patents generally directed to beloranib compositions of matter are exclusively licensed and will each expire in 2019. We own an issued U.S. patent relating to beloranib polymorph compositions of matter that will expire in 2031 and an issued U.S. patent to methods of treating obesity that will expire in 2029. We own pending patent applications in Europe to beloranib polymorph composition of matter and methods of treating obesity that we expect to expire, once issued, in 2031.

As of February 28, 2014, we own two issued U.S. patents, eight pending U.S. patent applications and foreign counterpart applications, and one Patent Cooperation Treaty, or PCT, application that will allow us to seek corresponding protection worldwide, all of which relate to beloranib. We have a license to two U.S. issued patents, one with corresponding issued foreign counterpart patents, that also relate to beloranib. We also co-own one patent application relating to methods of using beloranib with an option to exclusively license the co-owner rights.

As of February 28, 2014, we own seven pending U.S. patent applications with pending foreign counterpart applications and five PCT patent applications, all of which relate to our MetAP2 inhibitor program. Of these, one pending U.S. patent application with pending foreign counterpart patent applications and one PCT patent application relate to our early-stage product candidate ZGN-839.

As of February 28, 2014, we own two pending U.S patent applications with pending foreign counterpart patent applications, one pending PCT patent application and two U.S. provisional patent applications that relate to our second-generation MetAP2 inhibitor program.

We cannot provide any assurances that any of our patents have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect beloranib or our other product candidates. Other parties have developed technologies that may be related or competitive to our approach, and may have filed or may file patent applications and may have received or may receive patents that may overlap or conflict with our patent applications, either by claiming the same methods or formulations or by claiming subject matter that could dominate our patent position. The patent positions of biotechnology and pharmaceutical companies, including our patent position, involve complex legal and factual questions, and, therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty. Patents, if issued, may be challenged, deemed unenforceable, invalidated, or circumvented. U.S. patents and patent applications may also be subject to interference proceedings, *ex parte* reexamination, or *inter partes* review proceedings, supplemental examination and challenges in district court. Patents may be subjected to opposition, post-grant review, or comparable proceedings lodged in various foreign, both national and regional, patent offices. These proceedings could result in either loss of the patent or denial of the patent application or loss or reduction in the scope of one or more of the claims of the patent or patent application. In addition, such proceedings may be costly. Thus, any patents that we may own or exclusively license may not provide any protection against competitors. Furthermore, an adverse decision in an interference proceeding can result in a third party receiving the patent right sought by us, which in turn could affect our ability to develop, market or otherwise commercialize beloranib.

Furthermore, though an issued patent is presumed valid and enforceable, its issuance is not conclusive as to its validity or its enforceability and it may not provide us with adequate proprietary protection or competitive advantages against competitors with similar products. Competitors may also be able to design around our patents. Other parties may develop and obtain patent protection for more effective technologies, designs or methods. We may not be able to prevent the unauthorized disclosure or use of our technical knowledge or trade secrets by consultants, vendors, former employees and current employees. The laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the United States, and we may encounter significant problems in protecting our proprietary rights in these countries. If these developments were to occur, they could have a material adverse effect on our sales.

Our ability to enforce our patent rights depends on our ability to detect infringement. It is difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product. Any litigation to enforce or defend our patent rights, even if we were to prevail, could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

In addition, proceedings to enforce or defend our patents could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. If any of our patents covering beloranib are invalidated or found unenforceable, our financial position and results of operations would be materially and adversely impacted. In addition, if a court found that valid, enforceable patents held by third parties covered beloranib, our financial position and results of operations would also be materially and adversely impacted.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- any of our patents, or any of our pending patent applications, if issued, will include claims having a scope sufficient to protect beloranib or any other products or product candidates;
- any of our pending patent applications will issue as patents;
- we will be able to successfully commercialize beloranib, if approved, before our relevant patents expire;
- we were the first to make the inventions covered by each of our patents and pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not develop similar or alternative technologies that do not infringe our patents;
- any of our patents will be found to ultimately be valid and enforceable;
- any patents issued to us will provide a basis for an exclusive market for our commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies or product candidates that are separately patentable; or
- that our commercial activities or products will not infringe upon the patents of others.

We rely upon unpatented trade secrets, unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with our employees and our collaborators and consultants. We also have agreements with our employees and selected consultants that obligate them to assign their inventions to us and have non-compete agreements with some, but not all, of our consultants. It is possible that technology relevant to our business will be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees and consultants who are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could otherwise become known or be independently discovered by our competitors.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing beloranib, if approved.

Our success will depend in part on our ability to operate without infringing the intellectual property and proprietary rights of third parties. We cannot assure you that our business, products and methods do not or will not infringe the patents or other intellectual property rights of third parties.

The pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that beloranib or the use of our technologies infringes patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Any claim relating to intellectual property infringement that is successfully asserted against us may require us to pay substantial damages, including treble damages and attorney's fees if we are found to be willfully infringing another party's patents, for past use of the asserted intellectual property and royalties and other consideration going forward if we are forced to take a license. In addition, if any such claim were successfully asserted against us and we could not obtain such a license, we may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing beloranib.

Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court, or redesign our products. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease developing, selling or otherwise commercializing beloranib;
- pay substantial damages for past use of the asserted intellectual property;
- obtain a license from the holder of the asserted intellectual property, which license may not be available on reasonable terms, if at all; and
- in the case of trademark claims, redesign, or rename, beloranib to avoid infringing the intellectual property rights of third parties, which may not be possible and, even if possible, could be costly and time-consuming.

Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

The U.S. Patent and Trademark Office, or U.S. PTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the

patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering our product candidate, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include alleged failures to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review and equivalent proceedings in foreign jurisdictions, e.g., opposition proceedings. Such proceedings could result in revocation or amendment of our patents in such a way that they no longer cover our product candidates or competitive products. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to validity, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

We do not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing, prosecuting and defending patents on product candidates in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing beloranib or our other product candidates, if approved.

We have licensed our rights to beloranib from Chong Kun Dang Pharmaceutical Corp. of South Korea, or CKD. Our license with CKD imposes various obligations on us, including a requirement to use commercially reasonable efforts to develop beloranib and provides CKD the right to terminate the license thereunder in the event of a material breach. For example, CKD may allege that we have breached our license agreement and may accordingly seek to terminate our license with them. Termination of our license from CKD could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize beloranib, if approved, as well as harm our competitive business position and our business prospects. We also have an exclusive license with Children's Medical Center Corporation, or Children's, pursuant to which we exclusively licensed certain patient rights relating to decreasing the growth of fat tissue from Children's on a worldwide basis.

We may enter into additional license(s) to third-party intellectual property that are necessary or useful to our business. Future licensor(s) may also allege that we have breached our license agreement and may accordingly seek to terminate our license with them. In addition, future licensor(s) may decide to terminate our license at will. If successful, this could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize a product candidate or product, if approved, as well as harm our competitive business position and our business prospects.

We have not yet registered trademarks for a commercial trade name for beloranib and failure to secure such registrations could adversely affect our business.

We have not yet registered trademarks for a commercial trade name for beloranib. Any future trademark applications may be rejected during trademark registration proceedings. Although we would be given an

opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the U.S. PTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. Moreover, any name we propose to use with our product candidates in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA.

If we do not obtain additional protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms and obtaining data exclusivity for beloranib, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of beloranib, one or more of the U.S. patents we license may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, we may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our ability to generate revenues could be materially adversely affected.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

The United States has recently enacted and is currently implementing the America Invents Act of 2011, wide-ranging patent reform legislation. Further, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents or future patents.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

Our employees have been previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we are not aware of any claims currently pending against us, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of the former employers of our employees. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. If we fail in defending such claims, in addition to paying money claims, we may lose valuable intellectual property rights or personnel. A loss of key personnel or their work product could hamper or prevent our ability to commercialize beloranib, which would materially adversely affect our commercial development efforts.

General Company-Related Risks

We will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As of February 28, 2014, we had ten full-time employees and two part-time employees, and in connection with becoming a public company, we expect to increase our number of employees and the scope of our operations. To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Also, our management may need to divert a disproportionate amount of its attention away from its day-to-day activities and devote a substantial amount of time to managing these development activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of beloranib. If our management is unable to effectively manage our expected development and expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize beloranib, if approved, and compete effectively will depend, in part, on our ability to effectively manage the future development and expansion of our company.

Our future success depends on our ability to retain our President and Chief Executive Officer, and to attract, retain and motivate qualified personnel.

We are highly dependent on Dr. Thomas E. Hughes, our President and Chief Executive Officer. We have entered into an employment agreement with Dr. Hughes, but he may terminate his employment with us at any time. Although we do not have any reason to believe that we will lose the services of Dr. Hughes in the foreseeable future, the loss of his services might impede the achievement of our research, development and commercialization objectives. We also do not have any key-man life insurance on Dr. Hughes. We rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us and may not be subject to our standard non-compete agreements. Recruiting and retaining qualified scientific personnel and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel.

Our employees may engage in misconduct or other improper activities, including violating applicable regulatory standards and requirements or engaging in insider trading, which could significantly harm our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with the regulations of the FDA and applicable non-U.S. regulators, provide accurate information to the FDA and applicable non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of, including trading on, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have

adopted a code of conduct, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may be ineffective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

We face potential product liability exposure, and, if claims are brought against us, we may incur substantial liability.

The use of beloranib in clinical trials and the sale of beloranib, if approved, exposes us to the risk of product liability claims. Product liability claims might be brought against us by patients, healthcare providers or others selling or otherwise coming into contact with beloranib. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, including as a result of interactions with alcohol or other drugs, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we become subject to product liability claims and cannot successfully defend ourselves against them, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in, among other things:

- withdrawal of patients from our clinical trials;
- substantial monetary awards to patients or other claimants;
- decreased demand for beloranib or any future product candidates following marketing approval, if obtained;
- damage to our reputation and exposure to adverse publicity;
- increased FDA warnings on product labels;
- litigation costs;
- distraction of management’s attention from our primary business;
- loss of revenue; and
- the inability to successfully commercialize beloranib or any future product candidates, if approved.

We maintain product liability insurance coverage for our clinical trials with a $5.0 million annual aggregate coverage limit. Nevertheless, our insurance coverage may be insufficient to reimburse us for any expenses or losses we may suffer. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses, including if insurance coverage becomes increasingly expensive. If and when we obtain marketing approval for beloranib, we intend to expand our insurance coverage to include the sale of commercial products; however, we may not be able to obtain this product liability insurance on commercially reasonable terms. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. The cost of any product liability litigation or other proceedings, even if resolved in our favor, could be substantial, particularly in light of the size of our business and financial resources. A product liability claim or series of claims brought against us could cause our stock price to decline and, if we are unsuccessful in defending such a claim or claims and the resulting judgments exceed our insurance coverage, our financial condition, business and prospects could be materially adversely affected.

We must maintain effective internal control over financial reporting, and if we are unable to do so, the accuracy and timeliness of our financial reporting may be adversely affected, which could have a material adverse effect on our business and stock price.

We must maintain effective internal control over financial reporting in order to accurately and timely report our results of operations and financial condition. In addition, once we are a public company, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, will require, among other things, that we assess the effectiveness of our disclosure controls and procedures quarterly and the effectiveness of our internal control over financial reporting at the end of each fiscal year. We anticipate being first required to issue management's annual report on internal control over financial reporting, pursuant to Section 404 of the Sarbanes-Oxley Act, in connection with issuing our consolidated financial statements as of and for the year ending December 31, 2015.

During the course of preparing for this offering, we determined that material adjustments to various accounts were necessary, which required us to restate our consolidated financial statements as of and for the year ended December 31, 2011 and for the period from inception (November 22, 2005) through December 31, 2011 that had been previously audited by another independent audit firm. These adjustments leading to a restatement of those consolidated financial statements led us to conclude that we had material weaknesses in internal control over financial reporting as of December 31, 2011 as follows: (i) we did not maintain effective controls over accounting policies and application of GAAP—specifically, we did not maintain and communicate sufficient accounting policies, which limited our ability to make accounting decisions and to detect and correct accounting errors; and (ii) we did not maintain a sufficient complement of resources with an appropriate level of accounting knowledge, experience and training commensurate with our structure and financial reporting requirements.

During 2013, we executed on various remediation efforts, including ensuring we had sufficient resources with the appropriate technical accounting expertise and putting in place formalized policies and procedures to ensure complete and accurate consolidated financial statements are prepared. In that year, we hired additional senior accounting and finance employees, including a Chief Financial Officer with significant biotechnology industry experience, and engaged external consultants with significant financial and accounting technical experience. These additional resources have enabled us to (i) implement standardized financial reporting policies and procedures and a more structured close process and (ii) implement financial data reviews that involve separate preparation and review of the monthly, quarterly and annual financial data, reconciliations, analyses and information. Based on our assessment of the additional resources and our enhanced controls and procedures, our management concluded that, as of December 31, 2013, we had remediated the material weaknesses in our internal control over financial reporting described above.

The rules governing the standards that must be met for our management to assess our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act are complex and require significant documentation, testing and possible remediation. These stringent standards require that our audit committee be advised and regularly updated on management's review of internal control over financial reporting. Our management may not be able to effectively and timely implement controls and procedures that adequately respond to the increased regulatory compliance and reporting requirements that will be applicable to us as a public company. If we fail to staff our accounting and finance function adequately or maintain internal control over financial reporting adequate to meet the demands that will be placed upon us as a public company, including the requirements of the Sarbanes-Oxley Act, our business and reputation may be harmed and our stock price may decline. Furthermore, investor perceptions of us may be adversely affected, which could cause a decline in the market price of our common stock.

In order to satisfy our obligations as a public company, we will need to hire additional qualified accounting and financial personnel with appropriate public company experience.

As a newly public company, we will need to establish and maintain effective disclosure and financial controls and make changes in our corporate governance practices. We will need to hire additional accounting and

financial personnel with appropriate public company experience and technical accounting knowledge, and it may be difficult to recruit and maintain such personnel. Even if we are able to hire appropriate personnel, our existing operating expenses and operations will be impacted by the direct costs of their employment and the indirect consequences related to the diversion of management resources from product development efforts.

Our ability to use our net operating loss carryforwards and certain tax credit carryforwards may be subject to limitation.

As of December 31, 2013, we had federal and state net operating loss carryforwards of $10.5 million and $8.2 million, respectively. Our federal net operating loss carryforwards begin to expire in 2026, and our state net operating loss carryforwards begin to expire in 2014. As of December 31, 2013, we also had federal and state research and development tax credit carryforwards of $4.7 million and $1.3 million, respectively, which begin to expire in 2026 and 2021, respectively. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, changes in our ownership may limit the amount of our net operating loss carryforwards and research and development tax credit carryforwards that could be utilized annually to offset our future taxable income, if any. This limitation would generally apply in the event of a cumulative change in ownership of our company of more than 50% within a three-year period. Any such limitation may significantly reduce our ability to utilize our net operating loss carryforwards and research and development tax credit carryforwards before they expire. The completion of this offering, together with private placements and other transactions that have occurred since our inception, may trigger such an ownership change pursuant to Section 382. Any such limitation, whether as the result of this offering, prior private placements, sales of our common stock by our existing stockholders or additional sales of our common stock by us after this offering, could have a material adverse effect on our results of operations in future years. We have not completed a study to assess whether an ownership change for purposes of Section 382 has occurred, or whether there have been multiple ownership changes since our inception, due to the significant costs and complexities associated with such study.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. The recent global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the recent global financial crisis, could result in a variety of risks to our business, including, weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Our internal computer systems, or those of our third-party CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our beloranib development programs.

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs. For example, the loss of clinical trial data for beloranib could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of beloranib could be delayed.

We may not be successful in our efforts to identify or discover additional product candidates.

The success of our business depends primarily upon our ability to identify, develop and commercialize products based on our weight loss platform. Although beloranib is currently in clinical development, our research programs may fail to identify other potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful.

We may acquire businesses or products, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions.

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

Risks Related to Our Financial Position and Need for Capital

We are a development stage biopharmaceutical company with a limited operating history and have not generated any revenue from product sales. We have incurred significant operating losses since our inception, and anticipate that we will incur continued losses for the foreseeable future.

We are a development stage company with a limited operating history on which to base your investment decision. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We were incorporated in November 2005. Our operations to date have been limited primarily to organizing and staffing our company and conducting research and development activities for beloranib and ZGN-839. We have never generated any revenue from product sales. We have not obtained regulatory approvals for any of our product candidates.

Since our inception, we have focused substantially all of our efforts and financial resources on developing beloranib, which is currently in Phase 2 clinical development. We have funded our operations to date through proceeds from sales of redeemable convertible preferred stock and convertible debt and have incurred losses in each year since our inception. Our net losses were $13.2 million for the year ended December 31, 2011, $13.9 million for the year ended December 31, 2012 and $14.0 million for the year ended December 31, 2013. As of December 31, 2013, we had a deficit accumulated during the development stage of $68.9 million. Substantially all of our operating losses resulted from costs incurred in connection with our development program and from general and administrative costs associated with our operations. We expect to incur increasing levels of operating losses over the next several years and for the foreseeable future. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' deficit and working capital. We expect our research and development expenses to significantly increase in connection with our additional clinical trials of beloranib and development of ZGN-839 and of any other product candidates we may choose to pursue. In addition, if we obtain marketing approval for beloranib, we will incur significant sales, marketing and outsourced manufacturing expenses. Once we are a public company, we will incur additional costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing

operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

Our ability to become profitable depends upon our ability to generate revenue. To date, we have not generated any revenue from our lead product candidate, beloranib, and we do not know when, or if, we will generate any revenue. We do not expect to generate significant revenue unless and until we obtain marketing approval of, and begin to sell, beloranib. Our ability to generate revenue depends on a number of factors, including, but not limited to, our ability to:

- initiate and successfully complete later-stage clinical trials that meet their clinical endpoints;
- initiate and successfully complete all safety studies required to obtain U.S. and foreign marketing approval for beloranib as a treatment for obesity and hyperphagia in PWS patients, craniopharyngioma-associated obesity and severely obese patients in the general population;
- commercialize beloranib, if approved, by developing a sales force or entering into collaborations with third parties; and
- achieve market acceptance of beloranib in the medical community and with third-party payors.

Absent our entering into a collaboration or partnership agreement, we expect to incur significant sales and marketing costs as we prepare to commercialize beloranib. Even if we initiate and successfully complete our pivotal clinical trials of beloranib, and beloranib is approved for commercial sale, and despite expending these costs, beloranib may not be a commercially successful drug. We may not achieve profitability soon after generating product sales, if ever. If we are unable to generate product revenue, we will not become profitable and may be unable to continue operations without continued funding.

Even if this offering is successful, we will need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We are currently advancing our beloranib product candidate through clinical development. Developing small molecule products is expensive, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance our product candidate in clinical trials. Depending on the status of regulatory approval or, if approved, commercialization of beloranib, as well as the progress we make in selling beloranib, we may require additional capital to fund operating needs thereafter. We may also need to raise additional funds sooner if we choose to pursue additional indications and/or geographies for beloranib or otherwise expand more rapidly than we presently anticipate.

As of December 31, 2013, our cash and cash equivalents were $35.5 million. We estimate that the net proceeds from this offering will be approximately $ million, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and offering expenses payable by us. We expect that the net proceeds from this offering, together with our existing cash and cash equivalents and available borrowings under our March 2014 credit facility, will be sufficient to fund our current operations for at least the next months. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or a combination of these approaches. In any event, we will require additional capital to obtain regulatory approval for, and to commercialize, our product candidates. Raising funds in the current economic environment may present additional challenges. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidate or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidate or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights.

We may seek additional capital through a combination of private and public equity offerings, debt financings, collaborations and strategic and licensing arrangements. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, your ownership interest in our company will be diluted. In addition, the terms of any such securities may include liquidation or other preferences that materially adversely affect your rights as a stockholder. Debt financing, if available, would increase our fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaboration, strategic partnerships and licensing arrangements with third parties, we may have to relinquish valuable rights to beloranib, our intellectual property, future revenue streams or grant licenses on terms that are not favorable to us.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

You will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. Assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, purchasers of common stock in this offering will experience immediate dilution of $ per share in net tangible book value of the common stock. In addition, investors purchasing common stock in this offering will contribute % of the total amount invested by stockholders since inception but will only own % of the shares of common stock outstanding. In the past, we issued options to acquire common stock at prices significantly below the initial public offering price. To the extent these outstanding options are ultimately exercised, investors purchasing common stock in this offering will sustain further dilution. See “Dilution” for a more detailed description of the dilution to new investors in the offering.

Risks Related to Our Common Stock

Market volatility may affect our stock price and the value of your investment.

Following this offering, the market price for our common stock is likely to be volatile, in part because our common stock has not been previously traded publicly. In addition, the market price of our common stock may fluctuate significantly in response to a number of factors, most of which we cannot control, including, among others:

- plans for, progress of or results from pre-clinical studies and clinical trials of beloranib;
- the failure of the FDA to approve beloranib;
- announcements of new products, technologies, commercial relationships, acquisitions or other events by us or our competitors;
- the success or failure of other weight loss therapies;
- regulatory or legal developments in the United States and other countries;
- failure of beloranib, if approved, to achieve commercial success;
- fluctuations in stock market prices and trading volumes of similar companies;
- general market conditions and overall fluctuations in U.S. equity markets;
- variations in our quarterly operating results;
- changes in our financial guidance or securities analysts' estimates of our financial performance;
- changes in accounting principles;
- our ability to raise additional capital and the terms on which we can raise it;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- additions or departures of key personnel;
- discussion of us or our stock price by the press and by online investor communities; and
- other risks and uncertainties described in these risk factors.

An active trading market for our common stock may not develop, and you may not be able to resell your shares at or above the initial public offering price.

Prior to this offering, there has been no public market for shares of our common stock. Although we anticipate our common stock being approved for listing on NASDAQ Global Market, an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price of our common stock will be determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after this offering. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the initial public offering price or at the time that they would like to sell.

Our executive officers, directors, principal stockholders and their affiliates will continue to exercise significant control over our company after this offering, which will limit your ability to influence corporate matters and could delay or prevent a change in corporate control.

Immediately following the completion of this offering, and disregarding any shares of common stock that they purchase in this offering, the existing holdings of our executive officers, directors, principal stockholders and their affiliates, including investment funds affiliated with Atlas Ventures, or Atlas, investment funds affiliated with Third Rock Ventures, or TRV, investment funds affiliated with Alta Partners, or Alta, and entities

affiliated with Fidelity Investment, or Fidelity, will represent beneficial ownership, in the aggregate, of approximately % of our outstanding common stock, assuming no exercise of the underwriters' option to acquire additional common stock in this offering and assuming we issue the number of shares of common stock as set forth on the cover page of this prospectus. As a result, these stockholders, if they act together, will be able to influence our management and affairs and control the outcome of matters submitted to our stockholders for approval, including the election of directors and any sale, merger, consolidation, or sale of all or substantially all of our assets. These stockholders acquired their shares of common stock for substantially less than the price of the shares of common stock being acquired in this offering, and these stockholders may have interests, with respect to their common stock, that are different from those of investors in this offering and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. In addition, this concentration of ownership might adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change of control of us;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

See "Principal Stockholders" in this prospectus for more information regarding the ownership of our outstanding common stock by our executive officers, directors, principal stockholders and their affiliates.

Future sales of our common stock may cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could significantly reduce the market price of our common stock and impair our ability to raise adequate capital through the sale of additional equity securities.

Upon completion of this offering, there will be shares of our common stock outstanding. Of these, shares are being sold in this offering (or shares, if the underwriters exercise their option in full) and will be freely tradable immediately after this offering (except for shares purchased by affiliates) and the remaining shares may be sold upon expiration of lock-up agreements six months after the date of this offering (subject in some cases to volume limitations). A large portion of these shares are held by a small number of persons and investment funds. Moreover, after this offering, Atlas, TRV, Alta, Fidelity and certain of our other stockholders will have rights, subject to some conditions, to require us to file registration statements covering the shares of our common stock they currently hold, or to include these shares in registration statements that we may file for ourselves or other stockholders. See "Description of Capital Stock—Registration Rights" in this prospectus for more information regarding these registration rights.

We also intend to register all the shares of common stock that we may issue under our equity incentive plans. Effective upon the effectiveness of the registration statement of which this prospectus is a part, an aggregate of shares of our common stock will be reserved for future issuance under these plans. Once we register these shares, which we plan to do shortly after the completion of this offering, they can be freely sold in the public market upon issuance, subject to the lock-up agreements referred to above. If a large number of these shares are sold in the public market, the sales could reduce the trading price of our common stock. See "Shares Eligible for Future Sale" for a more detailed description of sales that may occur in the future.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the market price of our common stock could decline. Based upon the number of shares of common stock, on an as-

converted basis, outstanding as of February 28, 2014, upon the completion of this offering, we will have outstanding a total of shares of common stock, assuming no exercise of the underwriters' option to purchase additional shares. Of these shares, as of the date of this prospectus, approximately shares of our common stock, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable, without restriction, in the public market immediately following this offering, assuming that current stockholders do not purchase shares in this offering. The representatives of the underwriters, however, may, in their sole discretion, permit our officers, directors and other stockholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. After the lock-up agreements expire, based upon the number of shares of common stock, on an as-converted basis, outstanding as of February 28, 2014, up to an additional shares of common stock will be eligible for sale in the public market, of which shares are held by directors, executive officers and other affiliates and will be subject to Rule 144 under the Securities Act of 1933, as amended, or the Securities Act.

In addition, as of February 28, 2014, shares of common stock that are either subject to outstanding options or reserved for future issuance under our equity incentive plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

After this offering, the holders of approximately shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market our common stock.

We will have broad discretion in how we use the proceeds of this offering. We may not use these proceeds effectively, which could affect our results of operations and cause our stock price to decline.

We will have considerable discretion in the application of the net proceeds of this offering. We intend to use the net proceeds from this offering to advance the clinical development of beloranib as a treatment for obesity and hyperphagia in PWS patients and craniopharyngioma-associated obesity, to advance the clinical development of beloranib as a treatment for severe obesity in the general population, to continue the development of ZGN-839 and to fund new and ongoing research and development activities, working capital and other general corporate purposes, which may include funding for the hiring of additional personnel, capital expenditures and the costs of operating as a public company. As a result, investors will be relying upon management's judgment with only limited information about our specific intentions for the use of the balance of the net proceeds of this offering. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

After the completion of this offering, we may be at an increased risk of securities class action litigation.

Historically, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, even one that may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders and the ability of our board of directors to issue preferred stock without stockholder approval. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

We are an "emerging growth company," and as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. If we choose not to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, our auditors will not be required to attest to the effectiveness of our internal control over financial reporting. As a result, investors may become less comfortable with the effectiveness of our internal controls and the risk that material weaknesses or other deficiencies in our internal controls go undetected may increase. If we choose to provide reduced disclosures in our periodic reports and proxy statements while we are an emerging growth company, investors would have access to less information and analysis about our executive compensation, which may make it difficult for investors to evaluate our executive compensation practices. We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an "emerging growth company." We will remain an "emerging growth company" until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

We do not intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividend on our common stock and do not currently intend to do so in the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends in the foreseeable future. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which you purchased them.

If securities or industry analysts do not publish or cease publishing research or reports or publish misleading, inaccurate or unfavorable research about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. We do not currently have and may never obtain research coverage by securities and industry analysts. If no or few securities or industry analysts cover our company, the trading price and volume of our stock would likely be negatively impacted. If we obtain securities or industry analyst coverage and if one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, or provides more favorable relative recommendations about our competitors, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price or trading volume to decline.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections entitled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," contains forward-looking statements that are based on our management's belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans, objectives of management and expected market growth, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements in this prospectus include, but are not limited to, statements about:

- our use of the net proceeds from this offering;
- the accuracy of our estimates regarding expenses, future revenues and capital requirements;
- our plans to develop and commercialize beloranib as a treatment for obesity that is a co-morbidity of an underlying rare condition such as PWS or craniopharyngioma, or severe obesity in the general population, or at all;
- our ability to advance beloranib into pivotal trials, and successfully complete such clinical trials;
- regulatory developments in the United States and foreign countries;
- the performance of our third-party manufacturers and CROs;
- our ability to obtain and maintain intellectual property protection for our proprietary assets;
- the size of the potential markets for beloranib and our ability to serve those markets;
- the rate and degree of market acceptance of beloranib for any indication once approved;
- our ability to obtain additional financing;
- the success of competing products that are or become available for the indications that we are pursuing; and
- the loss of key scientific or management personnel.

In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue" or the negative of these terms or other comparable terminology. These statements are only predictions. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties and other factors, which are, in some cases, beyond our control and which could materially affect results. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under "Risk Factors" and elsewhere in this prospectus. If one or more of these risks or uncertainties occur, or if our underlying assumptions prove to be incorrect, actual events or results may vary significantly from those implied or projected by the forward-looking statements. No forward-looking statement is a guarantee of future performance. You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

USE OF PROCEEDS

We estimate that our net proceeds from the sale of shares of our common stock in this offering will be approximately $ million, or $ million if the underwriters exercise in full their option to purchase additional shares, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering, plus, if needed, cash on hand, as follows:

- approximately $ million to advance the clinical development of beloranib as a treatment for obesity and hyperphagia in PWS patients through Phase 3 clinical trials;
- approximately $ million to advance the clinical development of beloranib as a treatment for craniopharyngioma-associated obesity through a Phase 2a clinical trial and the initiation of pivotal clinical trials;
- approximately $ million to initiate IND-enabling studies and clinical development of ZGN-839 through the initiation of Phase 1 clinical development;
- approximately $ million to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population; and
- the remaining proceeds, if any, to fund new and ongoing research and development activities, working capital and other general corporate purposes.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from pre-clinical studies and any ongoing clinical trials or clinical trials we may commence in the future, as well as any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DIVIDEND POLICY

We have never declared or paid dividends on our capital stock. We do not anticipate paying any dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. Any future determination to declare dividends will be subject to the discretion of our board of directors and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects and any other factors deemed relevant by our board of directors. Investors should not purchase our common stock with the expectation of receiving cash dividends.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2013:

- on an actual basis;
- on a pro forma basis, giving effect to the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 94,483,404 shares of our common stock upon the completion of this offering; and
- on a pro forma as adjusted basis, giving effect to the pro forma adjustment listed above as well as the sale by us of shares of our common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information below is illustrative only, and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table in conjunction with the sections of this prospectus entitled "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and with our consolidated financial statements and related notes included elsewhere in this prospectus.

	As of December 31, 2013		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data)		
Cash and cash equivalents	$ 35,517	$ 35,517	$
Redeemable convertible preferred stock (Series A, B, C, D and E), $0.001 par value; 99,292,610 shares authorized, 94,483,404 issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	$103,797	$ —	$ —
Stockholders' equity (deficit):			
Preferred stock, $0.001 par value; no shares authorized, issued or outstanding, actual; shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, $0.001 par value; 115,000,000 shares authorized, 4,580,669 shares issued and outstanding, actual; 115,000,000 shares authorized, 99,064,073 shares issued and outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	5	9 9	
Additional paid-in capital	328	104,031	
Deficit accumulated during the development stage	(68,907)	(68,907)	
Total stockholders' equity (deficit)	(68,574)	35,223	
Total capitalization	$ 35,223	$ 35,223	$

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of cash and cash equivalents, total stockholders' equity and total capitalization on a pro forma as adjusted basis by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of shares in the number of shares

offered by us, as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by $ million, assuming the assumed initial public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The number of common shares shown as outstanding on a pro forma as adjusted basis in the table above is based on 4,580,669 shares of common stock outstanding as of December 31, 2013 and excludes:

- 8,228,975 shares of common stock issuable upon the exercise of outstanding options as of December 31, 2013 at a weighted average exercise price of $0.30 per share;
- 2,331,257 shares of common stock reserved for future issuance under our 2006 Stock Option Plan as of December 31, 2013; and
- shares of our common stock reserved for future issuance under our 2014 Stock Option Plan, which will become effective upon the completion of this offering.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share you will pay in this offering and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Our historical net tangible book value (deficit) as of December 31, 2013 was $(69.3) million, or $(15.13) per share of common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and redeemable convertible preferred stock, which is not included within stockholders' equity (deficit). Historical net tangible book value per share is our historical net tangible book value (deficit) divided by the number of shares of common stock outstanding as of December 31, 2013.

Our pro forma net tangible book value as of December 31, 2013 was $34.5 million, or $0.35 per share of common stock. Pro forma net tangible book value represents total tangible assets less total liabilities. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of December 31, 2013, after giving effect to the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 94,483,404 shares of our common stock upon the completion of this offering.

After giving effect to the sale by us of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2013 would have been $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to new investors purchasing common stock in this offering at the initial public offering price. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of December 31, 2013	$(15.13)	
Increase per share attributable to the conversion of all shares of redeemable convertible preferred stock outstanding	15.48	
Pro forma net tangible book value per share as of December 31, 2013	0.35	
Increase in pro forma as adjusted net tangible book value per share attributable to new investors purchasing shares in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors participating in this offering		$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value per share after this offering by $ per share and would increase (decrease) the dilution per share to new investors participating in this offering by $ per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase of shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase the pro forma as adjusted net tangible book value per share after this offering by $ and decrease the dilution per share to new investors participating in this offering by $, assuming the assumed initial

public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A share decrease in the number of shares offered by us, as set forth on the cover page of this prospectus, would decrease the pro forma as adjusted net tangible book value per share after this offering by $ and increase the dilution per share to new investors participating in this offering by $, assuming the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The information discussed above is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

If the underwriters exercise their option to purchase additional shares in full, the pro forma as adjusted net tangible book value per share after this offering would be $ per share, representing an increase in pro forma as adjusted net tangible book value per share to existing stockholders of $ per share and immediate dilution in pro forma as adjusted net tangible book value per share to new investors purchasing shares in this offering of $ per share, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus.

The following table summarizes, as of December 31, 2013, on a pro forma as adjusted basis described above, the number of shares of our common stock, the total consideration and the average price per share (i) paid to us by existing stockholders and (ii) to be paid by new investors purchasing shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders		%	$	%	$
New investors					$
Total		%	$	%	

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to % of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to % of the total number of shares of our common stock outstanding after this offering.

The above discussion and tables are based on 4,580,669 shares of common stock outstanding as of December 31, 2013 and also give effect to the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 94,483,404 shares of common stock upon the completion of this offering. The discussion and tables above assume no exercise of any outstanding stock options. As of December 31, 2013, there were 8,228,975 shares of common stock issuable upon exercise of outstanding options at a weighted average exercise price of $0.30 per share. The tables above also exclude 2,331,257 shares of common stock reserved for future issuance under our 2006 Stock Option Plan as of December 31, 2013 and shares of our common stock reserved for future issuance under our 2014 Stock Option Plan, which will become effective upon the completion of this offering.

To the extent that outstanding options are exercised, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our stockholders.

SELECTED CONSOLIDATED FINANCIAL DATA

You should read the following selected consolidated financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus. We have derived the consolidated statement of operations data for the years ended December 31, 2011, 2012 and 2013 and for the cumulative period from inception (November 22, 2005) through December 31, 2013 and the consolidated balance sheet data as of December 31, 2012 and 2013 from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that should be expected in the future.

	Year Ended December 31,			Cumulative Period from Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
	(in thousands, except per share data)			
Statement of Operations Data:				
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	11,403	11,544	9,561	54,290
General and administrative	1,751	2,247	4,219	14,309
Total operating expenses	13,154	13,791	13,780	68,599
Loss from operations	(13,154)	(13,791)	(13,780)	(68,599)
Other income (expense):				
Interest income	—	—	—	120
Interest expense	—	(97)	—	(106)
Foreign currency transaction gains (losses), net	(3)	8	(247)	(243)
Total other expense, net	(3)	(89)	(247)	(229)
Net loss	(13,157)	(13,880)	(14,027)	(68,828)
Accretion of redeemable convertible preferred stock to redemption value	(53)	(67)	(213)	(554)
Net loss attributable to common stockholders	$ (13,210)	$ (13,947)	$ (14,240)	$ (69,382)
Net loss per share attributable to common stockholders, basic and diluted [1]	$ (3.05)	$ (3.13)	$ (3.11)	
Weighted average common shares outstanding, basic and diluted [1]	4,327	4,457	4,578	
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited) [2]			$ (0.17)	
Pro forma weighted average common shares outstanding, basic and diluted (unaudited) [2]			84,190	

	As of December 31,	
	2012	2013
	(in thousands)	
Balance Sheet Data:		
Cash and cash equivalents	$ 9,935	$ 35,517
Working capital(3)	7,394	34,443
Total assets	10,986	38,138
Redeemable convertible preferred stock	62,785	103,797
Total stockholders' deficit	(54,729)	(68,574)

(1) See Note 9 to our consolidated financial statements for further details on the calculation of basic and diluted net loss per share attributable to common stockholders.

(2) See Note 9 to our consolidated financial statements for further details on the calculation of basic and diluted pro forma net loss per share attributable to common stockholders.

(3) We define working capital as current assets less current liabilities.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of financial condition and results of operations together with the section entitled "Selected Consolidated Financial Data" and our consolidated financial statements and related notes included elsewhere in this prospectus. This discussion and other parts of this prospectus contain forward-looking statements that involve risks and uncertainties, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the "Risk Factors" section of this prospectus.

Overview

We are a biopharmaceutical company dedicated to significantly improving the health and well-being of patients affected by obesity. Beloranib, our lead product candidate, is a novel, first-in-class, twice-weekly subcutaneous injection being developed for the treatment of multiple indications, including obesity and hyperphagia, or insatiable life-threatening hunger and hunger-related behaviors, in Prader-Willi Syndrome, or PWS, craniopharyngioma-associated obesity, and severe obesity in the general population.

PWS is a rare and complex genetic disorder characterized by physiologic, cognitive and behavioral symptoms, including hyperphagia, and severe obesity. We recently completed two Phase 2a clinical trials evaluating beloranib's ability to reduce body weight and to improve hyperphagia, one in PWS patients and one in severely obese patients. In our Phase 2a clinical trials, we observed reductions in body weight, body mass and body fat content in both patient populations and reductions in hyperphagia-related behaviors in PWS patients. In January 2013, the U.S. Food and Drug Administration, or FDA, granted orphan designation for our application to treat PWS with beloranib. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014 after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities. We filed an application to obtain orphan drug designation for beloranib as a treatment for PWS in the European Union in early 2014. We believe that rare conditions such as PWS afford us an opportunity to rapidly develop and commercialize beloranib using smaller, more focused and less costly clinical trials, relative to those required to develop beloranib for the broader severe obesity population.

Obesity is a complex medical disorder involving appetite dysregulation and altered lipid and energy metabolism that results in excessive accumulation of fat tissue. Weight loss and hunger control are urgently needed for certain subpopulations of obese patients, such as those with PWS and craniopharyngioma, whose obesity is life-threatening and a co-morbidity of an underlying condition. These conditions are characterized by uncontrollable hunger resulting from damage to or impaired functioning of the hypothalamus, an area of the brain responsible for many functions including the desire to eat. Published population studies estimate that the prevalence of PWS in the United States and in the European Union ranges from 1 in 8,000 to 1 in 50,000. The physiological drive to eat in PWS patients is so powerful that they will go to great lengths to eat large quantities of food, even if it is spoiled, indigestible or unpalatable to others. Unsupervised patients will often eat to the point that it causes serious physical harm or death. As a result, caregivers are often forced to place locks and alarms on refrigerators and pantries that contain food. Despite attempts to control the access to food, the typical adult PWS patient is morbidly obese and, based on our evaluation of published survival data, has an average life expectancy of 32 years of age. Unfortunately, neither dietary intervention nor currently available pharmaceutical therapies bring meaningful benefit to PWS patients and, as a result, they experience severe and life-threatening consequences of their condition. Furthermore, existing surgical techniques such as bariatric surgery are contraindicated in PWS, as PWS patients often overeat to a point whereby they can rupture their stomachs, which is frequently a cause of death. Since beloranib works through a novel mechanism that does not appear to require a fully functioning hypothalamic control pathway, we believe that obese patients with conditions in which increased hunger is central to the disease may respond well to treatment with beloranib.

We are pursuing clinical development of beloranib as a treatment for severely obese patients in the general population, including patients otherwise eligible for bariatric surgery. Bariatric surgery eligibility criteria generally identify surgical candidates as those patients with body mass indices, or BMIs, greater than 40 kg/m^2, or those with BMIs over 35 kg/m^2 who also have a significant and uncontrolled co-morbid condition. Based on these criteria, it is estimated conservatively that there will be at least 16 million adults in the United States eligible for bariatric surgery by the time beloranib or another methionine aminopeptidase 2, or MetAP2, inhibitor could become available commercially. Bariatric surgery results in significant weight loss, but the financial expense and the potential for complications, adverse events and longer-term side effects limit its overall adoption, with only a few hundred thousand patients in the United States undergoing bariatric surgery each year. Existing pharmacotherapies result in less weight loss than surgical options, and these therapies not only have undesirable side effects, but also have risk of abuse. Due to the significant barriers associated with bariatric surgery and the limited weight loss potential of currently marketed pharmaceutical products, there is a significant unmet need for the treatment of patients with severe obesity. We believe this patient population would benefit from MetAP2 inhibitor treatment through the reduction of body weight and through improvement of other co-morbid conditions. In 2013, we completed a 12-week Phase 2a clinical trial of beloranib administered twice weekly in obese patients. We observed placebo-adjusted weight loss, or weight loss observed beyond that seen in the control arm, of up to 10.3% after 12 weeks of treatment with beloranib. In addition, we observed reductions in levels of low density lipoprotein cholesterol, C-reactive protein and systolic blood pressure. Patients treated with beloranib also reported reduced hunger, as assessed using a visual analog scale, a widely used self-reported measure of hunger and related endpoints. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. We are also evaluating additional proprietary MetAP2 inhibitors beyond beloranib as potential development candidates that would provide increased patient convenience in the form of oral dosing, or an otherwise improved clinical profile. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical program of beloranib in PWS patients and discussions with regulatory authorities. MetAP2 inhibitors may also have utility in the treatment of other metabolic diseases, such as nonalcoholic steatohepatitis, or NASH, and type 2 diabetes. In a mouse model of diabetes and NASH, our second product candidate, ZGN-839, a MetAP2 inhibitor, reduced the severity of NASH and reduced plasma glucose.

Since our inception in November 2005, we have devoted substantially all of our resources to developing beloranib and ZGN-839, building our intellectual property portfolio, developing the supply chain, business planning, raising capital, and providing general and administrative support for these operations. To date, we have funded our operations primarily through sales of redeemable convertible preferred stock and, to a lesser extent, through the issuances of convertible promissory notes. From our inception through December 31, 2013, we have received gross proceeds of $103.6 million from such transactions.

We are a development stage company and have not generated any revenue. We have incurred net losses in each year since our inception, and we have a deficit accumulated during the development stage of $68.9 million as of December 31, 2013. Our net losses were $13.2 million, $13.9 million and $14.0 for the years ended December 31, 2011, 2012 and 2013, respectively. These losses have resulted principally from costs incurred in connection with in-licensing our product candidates, research and development activities and general and administrative costs associated with our operations. We expect to incur significant expenses and increasing operating losses for the foreseeable future.

We expect that our expenses will increase substantially in connection with our ongoing activities, as we *:*

- advance the clinical development of beloranib as a treatment for obesity and hyperphagia in PWS patients through our Phase 3 clinical program;
- advance the clinical development of beloranib as a treatment for craniopharyngioma-associated obesity through a Phase 2a clinical trial and the initiation of pivotal clinical trials;

- initiate Investigational New Drug Application, or IND, enabling studies and clinical development of ZGN-839 and our second-generation MetAP2 inhibitors through the initiation of Phase 1 clinical development;
- initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population;
- seek to identify additional indications for beloranib;
- seek to obtain regulatory approvals for our product candidates;
- add operational, financial and management information systems;
- add personnel, including personnel to support our product development and future commercialization; and
- maintain, leverage and expand our intellectual property portfolio.

As a result, we will need additional financing to support our continuing operations. Until such time that we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity or debt financings or other sources, which may include collaborations with third parties. Arrangements with collaborators or others may require us to relinquish rights to certain of our technologies or product candidates. In addition, we may never successfully complete development of any of our product candidates, obtain adequate patent protection for our technology, obtain necessary regulatory approval for our product candidates or achieve commercial viability for any approved product candidates. Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy. We will need to generate significant revenue to achieve profitability, and we may never do so.

We expect that our existing cash and cash equivalents as of December 31, 2013 and available borrowings under our March 2014 credit facility, together with anticipated net proceeds from this offering, will enable us to fund our operating expenses and capital expenditures requirements for at least months. See "—Liquidity and Capital Resources."

Financial Operations Overview

Revenue

We have not generated any revenue from product sales since our inception, and do not expect to generate any revenue from the sale of products in the near future. If our development efforts result in clinical success and regulatory approval or collaboration agreements with third parties for our product candidates, we may generate revenue from those product candidates.

Operating Expenses

The majority of our operating expenses since inception have consisted primarily of in-licensing costs of our product candidate beloranib, research and development activities, and general and administrative costs.

Research and Development Expenses

Research and development expenses, which consist primarily of costs associated with our product research and development efforts, are expensed as incurred. Research and development expenses consist primarily of:

- personnel costs, including salaries, related benefits and stock-based compensation for employees engaged in scientific research and development functions;
- third-party contract costs relating to research, formulation, manufacturing, pre-clinical studies and clinical trial activities;

- external costs of outside consultants;
- payments made under our third-party licensing agreements;
- laboratory consumables; and
- allocated facility-related costs.

We have been developing beloranib, ZGN-839, and our second-generation MetAP2 inhibitors, and typically use our employee, consultant and infrastructure resources across our development programs. We track outsourced development costs by product candidate or development program, but we do not allocate personnel costs, external consultant costs, payments made under our licensing agreements or other internal costs to specific development programs or product candidates. We record our research and development expenses net of any research and development tax incentives we are entitled to receive from government authorities.

The following table summarizes our research and development expenses by program:

	Year Ended December 31,			Cumulative Period from Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
	(in thousands)			
Beloranib	$ 5,523	$ 6,802	$ 5,881	$ 26,036
ZGN-839 and other early-stage development	2,332	2,193	295	11,052
Unallocated expenses	3,548	2,549	3,385	17,202
Total research and development expenses	$11,403	$11,544	$9,561	$ 54,290

Research and development activities are central to our business. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase in the foreseeable future as we pursue later stages of clinical development of our product candidates.

We cannot determine with certainty the duration and completion costs of the current or future clinical trials of our product candidates or if, when, or to what extent we will generate revenue from the commercialization and sale of any of our product candidates that obtain regulatory approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs, and timing of clinical studies and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing as well as any additional clinical trials and other research and development activities;
- future clinical trial results;
- uncertainties in clinical trial enrollment rate or design;
- significant and changing government regulation; and
- the timing and receipt of any regulatory approvals.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA, or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, consisting of salaries, related benefits and stock-based compensation, of our executive, finance, business and corporate development and other administrative functions. General and administrative expenses also include travel expenses, allocated facility-related costs not otherwise included in research and development expenses, and professional fees for auditing, tax and legal services, including legal expenses to pursue patent protection of our intellectual property.

We expect that general and administrative expenses will increase in the future as we expand our operating activities and incur additional costs associated with operating as a public company. These public company related increases will likely include additional costs related to personnel; legal, accounting and audit services; directors' and officers' liability insurance premiums; and investor relations.

Other Income (Expense)

Interest income. Interest income consists of interest earned on our cash and cash equivalents. Our interest income has not been significant due to low interest earned on invested balances. We anticipate that our interest income will increase in the future due to increased balances from the receipt of proceeds from our sales of Series E redeemable convertible preferred stock in November 2013 and anticipated cash proceeds from this offering.

Interest expense. Interest expense consists of interest expense on our outstanding convertible promissory notes at the stated interest rates and interest expense related to the amortization of deferred financing costs associated with our issuances of the convertible promissory notes. As of December 31, 2012, all of our outstanding convertible promissory notes and accrued interest had been converted into shares of our redeemable convertible preferred stock. As a result, we will no longer incur interest expense related to this debt.

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net consists of the realized and unrealized gains and losses from foreign currency-denominated cash balances, vendor payables and tax-related receivables from the Australian government. We currently do not engage in hedging activities related to our foreign currency-denominated receivables and payables; as such, we cannot predict the impact of future foreign currency transaction gains and losses on our operating results. See "—Quantitative and Qualitative Disclosures about Market Risk."

Income Taxes

Since our inception in 2005, we have not recorded any U.S. federal or state income tax benefits for the net losses we have incurred in each year or our earned research and development tax credits, due to our uncertainty of realizing a benefit from those items. As of December 31, 2013, we had federal and state net operating loss carryforwards of $10.5 million and $8.2 million, respectively. Our federal net operating loss carryforwards begin to expire in 2026, and our state net operating loss carryforwards begin to expire in 2014. We also had federal and state research and development tax credit carryforwards of $4.7 million and $1.3 million, respectively, as of December 31, 2013, which begin to expire in 2026 and 2021, respectively.

Critical Accounting Policies and Significant Judgments and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States of America. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amount of assets, liabilities, revenue, costs and expenses, and related disclosures. We believe that the estimates and assumptions involved in the accounting policies described below may have the greatest potential impact on our consolidated financial statements and, therefore, consider these to be our critical accounting policies. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions. See also Note 2 of our consolidated financial statements included elsewhere in this prospectus for information about these critical accounting policies as well as a description of our other significant accounting policies.

JOBS Act

On April 5, 2012, the Jumpstart Our Business Startups Act, or the JOBS Act, was signed into law. The JOBS Act contains provisions that, among other things, reduce certain reporting requirements for an "emerging growth company." As an "emerging growth company," we are electing not to take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards and, as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision not to take advantage of the extended transition period is irrevocable.

In addition, we are in the process of evaluating the benefits of relying on the other exemptions and reduced reporting requirements provided by the JOBS Act. Subject to certain conditions set forth in the JOBS Act, if as an "emerging growth company" we choose to rely on such exemptions, we may not be required to, among other things, (i) provide an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404, (ii) provide all of the compensation disclosure that may be required of non-emerging growth public companies under the Dodd-Frank Wall Street Reform and Consumer Protection Act, (iii) comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis), and (iv) disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer's compensation to median employee compensation. These exemptions will apply for a period of five years following the completion of our initial public offering or until we no longer meet the requirements of being an "emerging growth company," whichever is earlier.

Research and Development Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated costs incurred for the services when we have not yet been invoiced or otherwise notified of the actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advanced payments. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. Examples of estimated accrued research and development expenses include fees paid to:

- contract research organizations, or CROs, in connection with clinical trials;
- investigative sites or other providers in connection with clinical trials;
- vendors in connection with pre-clinical development activities; and
- vendors related to product manufacturing, development and distribution of clinical supplies.

We base our expenses related to clinical trials on our estimates of the services received and efforts expended pursuant to contracts with multiple CROs that conduct and manage clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the clinical expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed, enrollment of patients, number of sites activated and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the

status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting amounts that are too high or too low in any particular period. To date, we have not made any material adjustments to our prior estimates of accrued research and development expenses.

Stock-Based Compensation

We measure stock-based awards granted to employees and directors at fair value on the date of grant and recognize the corresponding compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, we issue stock options and restricted stock awards with only service-based vesting conditions and record the expense for these awards using the straight-line method. We have historically granted stock options with exercise prices equivalent to the fair value of our common stock as of the date of grant.

We measure stock-based awards granted to consultants and nonemployees at the fair value of the award on the date at which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and nonemployees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is re-measured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The fair value of each stock option grant is estimated using the Black-Scholes option-pricing model. We historically have been a private company and lack company-specific historical and implied volatility information. Therefore, we estimate our expected volatility based on the historical volatility of our publicly traded peer companies and expect to continue to do so until such time as we have adequate historical data regarding the volatility of our traded stock price. The expected term of our options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options, while the expected term of our options granted to consultants and nonemployees has been determined based on the contractual term of the options. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that we have never paid cash dividends and do not expect to pay any cash dividends in the foreseeable future.

The assumptions we used to determine the fair value of stock options granted to employees and directors are as follows, presented on a weighted average basis (we did not grant any stock options to employees or directors during the year ended December 31, 2012):

	Year Ended December 31,	
	2011	**2013**
Risk-free interest rate	1.41%	1.12%
Expected term (in years)	6.25	6.25
Expected volatility	78%	85%
Expected dividend yield	0%	0%

These assumptions represented our best estimates, but the estimates involve inherent uncertainties and the application of our judgment. As a result, if factors change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different. We recognize compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate for pre-vesting forfeitures, we have considered our historical experience of actual forfeitures. If our future actual forfeiture rate is materially different from our estimate, our stock-based compensation expense could be significantly different from what we have recorded in the current period.

The following table summarizes the classification of our stock-based compensation expenses recognized in our consolidated statements of operations:

	Year Ended December 31,		
	2011	2012	2013
	(in thousands)		
Research and development	$ 30	$ 68	$ 176
General and administrative	50	53	219
	$ 80	$ 121	$ 395

Valuations of Common Stock

The fair value of our common stock is determined on each date of grant by our board of directors, with input from management, and considers our most recently available valuation of common stock and our assessment of additional objective and subjective factors that we believe are relevant and which may change from the date of the most recent valuation through the date of the grant. In the absence of a public trading market for our common stock, our determination of the fair value of our common stock was performed using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Audit and Accounting Practice Aid Series: *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. In addition, our board of directors considered various objective and subjective factors, along with input from management, to determine its best estimate of the fair value of our common stock as of each grant date, including the following:

- contemporaneous third-party valuations of our common stock;
- the prices at which we sold shares of preferred stock and the superior rights and preferences of the preferred stock relative to our common stock;
- the progress of our research and development programs, including the status of clinical trials for our product candidates;
- our stage of development and business strategy;
- our financial condition, including cash on hand;
- our historical and forecasted performance and operating results;
- the composition of, and changes to, our management team and board of directors;
- the lack of an active public market for our common stock and our preferred stock;
- the likelihood of achieving a liquidity event such as a sale of our company or an initial public offering, or IPO, given prevailing market conditions;
- the analysis of initial public offerings and the market performance of similar companies in the biopharmaceutical industry;
- external market conditions affecting the biopharmaceutical industry; and
- trends within the biopharmaceutical industry.

Valuation Methodologies

Our common stock valuations have been prepared utilizing either the option-pricing method, or OPM, or a hybrid of the OPM and the probability-weighted expected return method, or PWERM.

The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a

company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the preferred stock liquidation preference at the time of a liquidity event, such as a strategic sale, merger or IPO. The common stock is modeled as a call option on the underlying equity value at a predetermined exercise price. In the model, the exercise price is based on a comparison with the total equity value rather than, as in the case of a regular call option, a comparison with a per share stock price. Thus, common stock is considered to be a call option with a claim on the enterprise at an exercise price equal to the remaining value immediately after the preferred stock liquidation preference is paid.

The OPM uses the Black-Scholes option-pricing model to price the call options. This model defines the securities' fair values as functions of the current fair value of a company and uses assumptions such as the anticipated timing of a potential liquidity event and the estimated volatility of the equity securities. The aggregate value of the common stock derived from the OPM is then divided by the number of shares of common stock outstanding to arrive at the per share value.

The OPM backsolve approach was used to estimate enterprise value under the OPM. The OPM backsolve approach uses the OPM to calculate the implied equity value based on recent sales of the company's securities. In the OPM, the assumed volatility factor was based on the historical trading volatility of our publicly traded peer companies. At each valuation date, a determination was made by us as to the appropriate volatility to be used, considering such factors as the expected time to a liquidity event and our stage of development.

To derive the fair value of the common stock using the OPM, the proceeds to the common stockholders were calculated based on the preferences and priorities of the preferred and common stock, including the participation features of certain series of the preferred stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

Under the PWERM methodology, the fair value of common stock is estimated based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

In the hybrid PWERM and OPM, two valuation approaches were used to estimate enterprise value: the market approach and the OPM backsolve approach. Under the market approach, we estimated enterprise value using the guideline public company method, which includes comparisons to publicly traded companies in the relevant industry that recently completed IPOs. The enterprise value is then discounted back to the valuation date at an appropriate risk-adjusted discount rate.

In the hybrid PWERM and OPM, two types of future event scenarios were considered: an IPO and a sale transaction. The IPO scenario was valued using either the OPM backsolve approach or the guideline public company method. The sale scenario was valued using the OPM backsolve approach. The relative probability of each type of future event scenario was determined by our board of directors based on an analysis of market conditions at the time, including then-current IPO valuations of similarly situated companies, and expectations as to the timing and likely prospects of the future-event scenarios.

To derive the fair value of the common stock for each scenario using the hybrid PWERM and OPM, the proceeds to the common stockholders were calculated based on the preferences and priorities of the preferred and common stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

Common Stock Valuations

July 31, 2011 Valuation. To aid in the determination of the fair value of our common stock, a third-party valuation analysis was prepared as of July 31, 2011 using the OPM. In determining the enterprise value, we applied the OPM backsolve approach to calculate our implied equity value based on the pricing of our Series C preferred stock financing at $0.91 per share in June 2011. We estimated the time to liquidity as 2.0 years based on the then-current plans and estimates of our board of directors and management regarding our likely need to raise additional capital within this timeframe. We assumed volatility of 86% based on historical trading volatility of our publicly traded peer companies. We used a risk-free rate of return of 0.36%, based on the two-year U.S. Treasury yield curve. We then applied a discount for lack of marketability of 35%. The July 31, 2011 analysis resulted in a valuation of our common stock of $0.25 per share.

January 31, 2013 Valuation. To aid in the determination of the fair value of our common stock, a third-party valuation analysis was prepared as of January 31, 2013. Based upon our determination that in late 2012 an IPO had become a possible but uncertain liquidity event, the valuation was prepared using the hybrid PWERM and OPM, which considered a sale scenario and an IPO scenario. For those two future-event scenarios, management and our board of directors determined that the probability of the sale scenario was 85% and the probability of the IPO scenario was 15%, based on our assessment of our development pipeline and market conditions. In determining the enterprise value for the sale scenario, we applied the OPM backsolve approach to calculate our implied equity value based on the pricing of our Series D preferred stock financing at $1.36 per share in November 2012 and January 2013 and considering the participating nature of the preferred stock in a sale scenario and the expected time to a sale. In determining the enterprise value for the IPO scenario, we applied the OPM backsolve approach to calculate our implied equity value based on the pricing of our Series D preferred stock financing at $1.36 per share in November 2012 and January 2013 and considering the convertible nature of the preferred stock in an IPO scenario and the expected time to an IPO. For purposes of the January 31, 2013 valuation, we also estimated that the time to completion of a sale transaction was 1.5 years and the time to completion of an IPO was 1.0 year. For the sale and IPO scenarios, we assumed volatility of 67% and 53%, respectively, based on the trading volatilities of our publicly traded peer companies for our expected time to liquidity of each scenario. We then applied a discount for lack of marketability of 25% under each of the sale and IPO scenarios. The January 31, 2013 analysis resulted in a valuation of our common stock of $0.39 per share.

June 30, 2013 Valuation. To aid in the determination of the fair value of our common stock, a third-party valuation analysis was prepared as of June 30, 2013 using the hybrid PWERM and OPM, which considered an IPO scenario and a sale scenario. For those two future-event scenarios, management and our board of directors determined that the probability of each scenario was 50%, based on our assessment of our development pipeline, market conditions and progress towards undertaking an IPO. In determining the enterprise value for the IPO scenario, we applied the guideline public company method under the market approach, which considered the increase in value that occurred from the most recent preferred financing round to the IPO for a group of biopharmaceutical companies that had completed IPOs in the preceding two years. In determining the enterprise value for the sale scenario, we applied the OPM backsolve approach to calculate our implied equity value, using a $2.00 estimated price per share and the rights and preferences of Series E preferred stock in a planned preferred stock financing expected to close in late 2013. For purposes of the June 30, 2013 valuation, we also estimated that the time to completion of an IPO was 0.58 years and the time to completion of a sale transaction was 1.75 years. Our estimate of the time to a liquidity event in a sale transaction increased from our estimate used in the January 31, 2013 valuation due to our reassessment of potential sale transactions and current market conditions. For the IPO scenario, we applied a risk-adjusted discount rate of 30% to the value of common stock. For the sale scenario, we assumed volatility of 68%, based on the trading volatilities of our publicly traded peer companies for our expected time to liquidity. We then applied a discount for lack of marketability of 10% under each of the IPO and sale scenarios. The June 30, 2013 analysis resulted in a valuation of our common stock of $1.08 per share.

December 20, 2013 Valuation. To aid in the determination of the fair value of our common stock, a third-party valuation analysis was prepared as of December 20, 2013 using the hybrid PWERM and OPM, which

considered an IPO scenario, a short-term sale scenario and a long-term sale scenario. For those three future-event scenarios, management and our board of directors determined that the probability of the IPO scenario was 60%, the probability of a short-term sale scenario was 10% and the probability of a long-term sale scenario was 30%. These probabilities were based on our assessment of our development pipeline, market conditions and progress towards undertaking an IPO. In determining the enterprise value for the IPO scenario, we applied the guideline public company method under the market approach, which considered the increase in value that occurred from the most recent preferred financing round to the IPO for a group of biopharmaceutical companies that had completed IPOs in the preceding two years. In determining the enterprise value for the two sale scenarios, we applied the OPM backsolve approach to calculate our implied equity value, using the $2.17 price per share and the rights and preferences of the recently completed Series E preferred stock financing that closed in November 2013. For purposes of the December 20, 2013 valuation, we also estimated that the time to completion of an IPO was 0.42 years and the time to completion of a short-term and long-term sale transaction was 0.75 years and 3.0 years, respectively. For the IPO scenario, we applied a risk-adjusted discount rate of 25% to the value of common stock. For the short-term and long-term sale scenarios, we assumed volatility of 65% and 74%, respectively, based on the trading volatilities of our publicly traded peer companies for our expected time to liquidity. We then applied a discount for lack of marketability of 5% under the IPO scenario, 10% under the short-term sale scenario and 15% under the long-term sale scenario. The December 20, 2013 analysis resulted in a valuation of our common stock of $1.54 per share.

Option Grants

The following table summarizes by grant date the number of shares subject to options granted between January 1, 2012 and February 3, 2014, the per share exercise price of the options, the fair value of common stock underlying the options on date of grant, and the per share estimated fair value of the options:

Grant Date	Number of Shares Subject to Options Granted	Per Share Exercise Price of Options(1)	Fair Value of Common Stock on Date of Option Grant	Per Share Estimated Fair Value of Options(2)
February 28, 2012 (nonemployee award)	50,000	$ 0.25	$ 0.25	$ 0.20(3)
March 7, 2013	4,344,748	$ 0.39	$ 0.39	$ 0.28
October 3, 2013	10,000	$ 1.08	$ 1.08	$ 0.79
October 3, 2013 (nonemployee award)	110,000	$ 1.08	$ 1.08	$ 0.88(3)
December 20, 2013	50,000	$ 1.54	$ 1.54	$ 1.15
January 30, 2014	1,250,000	$ 1.54	$ 1.54	$ 1.16
February 3, 2014	25,000	$ 1.54	$ 1.54	$ 1.16

(1) The Per Share Exercise Price of Options represents the determination by our board of directors of the fair value of our common stock on the date of grant, as determined taking into account our most recently available valuation of common stock as well as additional factors, which may have changed since the date of the most recent contemporaneous valuation through the date of grant.

(2) The Per Share Estimated Fair Value of Options reflects the weighted average fair value of options granted on each grant date as estimated at the date of grant using the Black-Scholes option-pricing model. This model estimates the fair value using as inputs the exercise price of the option and assumptions of the risk-free interest rate, expected term of the option, expected share price volatility of the underlying common stock, expected dividends on the underlying common stock, and the per share fair value of the underlying common stock.

(3) For the purposes of recording stock-based compensation for grants of options to nonemployees, we measure the fair value of options on the service completion date (vesting date). At the end of each reporting period prior to completion of the services, we re-measure the value of the unvested portion of the outstanding options at the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

Our board of directors determined the fair value of common stock on each option grant date based on a variety of factors. We determined that the fair value of our common stock increased from $0.25 per share as of January 1, 2012 to $1.54 as of February 3, 2014. The following discussion describes the reasons for the increases in the fair value of our common stock over this period and as compared to the midpoint of the price range set forth on the cover page of this prospectus of $ per share.

Year Ended December 31, 2012. Our board of directors determined that the fair value of our common stock was $0.25 per share as of October 11, 2011. We believe that the fair value of our common stock remained unchanged through February 28, 2012, when we granted stock options for the purchase of 50,000 shares of common stock to a consultant. During the period from October 11, 2011 through February 28, 2012, we continued to operate our business in the ordinary course. At that time, our lead product candidate beloranib was in early-stage Phase 1b clinical trials, while our other product candidates were in earlier stages of development. In February 2012, we closed the final round of Series C preferred stock financing at $0.91 per share, which matched the price per share paid in our initial issuance of Series C redeemable convertible preferred stock in June 2011. Over this period, we had no plans for an initial public offering in the near term because we did not believe that the public markets presented a favorable environment for a biopharmaceutical company at our stage of development.

In the third quarter of 2012, we initiated a 12-week Phase 2a clinical trial of beloranib in Australia. This clinical trial was important in that beloranib was being studied as a longer-term treatment to show that weight loss would continue past the four weeks previously studied and, for the first time, it was studied in males and patients with diabetes. In November 2012, we executed a Series D preferred stock financing, under which we issued shares to a new investor in November 2012 at $1.36 per share and committed to issue shares to existing investors in January 2013 at $1.36 per share. In late 2012, we started to consider whether the markets presented a favorable environment for an IPO for a biopharmaceutical company at our stage of development; however, we did not have any definitive plans to pursue an IPO at that time. We believed that the fair value of our common stock increased to $0.39 per share as of December 31, 2012, based on our board of directors' determination of the fair value of our common stock as of March 7, 2013.

Year Ended December 31, 2013. During the first quarter of 2013, we continued to operate our business in the ordinary course. There were no significant developments in our clinical trials or in our research and development efforts as our Phase 2a clinical trial of beloranib in Australia was ongoing. In January 2013, we received orphan drug designation for beloranib for the treatment of PWS and also completed our scheduled closing of Series D redeemable convertible preferred stock. In February 2013, we obtained a third-party valuation of our common stock as of January 31, 2013 as one of the factors considered by our board of directors in its determination of the fair value of our common stock. That valuation considered an IPO scenario for the first time as we determined that an IPO had become a possible but uncertain liquidity event and resulted in an estimated fair value of our common stock of $0.39 per share. While we were considering a possible IPO at that time, we did not believe that the markets would be favorable to us for an IPO until we had results from our Phase 2a clinical trial of beloranib for severe obesity. Our board of directors determined that the fair value of common stock was $0.39 per share as of March 7, 2013. We believed that the fair value of our common stock remained unchanged through March 31, 2013.

In April 2013, we filed an IND with the FDA for beloranib to be tested in patients with PWS. In May 2013, we started to receive results from our recently completed Phase 2a clinical trial of beloranib in severely obese patients, which showed rapid, progressive and sustained clinically meaningful body weight loss. Additionally, in June 2013, we initiated a Phase 2a clinical trial in patients with PWS, evaluating beloranib for its ability to reduce body weight and to improve hyperphagia, a condition characterized by increased hunger and hunger-related behaviors. During the second quarter of 2013, we evaluated the public market environment and determined that the market conditions were favorable for biopharmaceutical companies. Those favorable market conditions and positive results from our Phase 2a clinical trial of beloranib in severely obese patients enabled us to pursue an IPO. In June and July 2013, we met with investment bankers to discuss a potential IPO, and we began to engage lawyers and accountants to assist us in preparation for an IPO. In early-August 2013, we obtained a third-party valuation of our common stock as of June 30, 2013 as one of the factors to be considered

by our board of directors in its determination of the fair value of our common stock. In that valuation, we adjusted our model to account for the increased probability of an IPO scenario, in light of continued favorable market conditions and our progress achieved towards a potential IPO of our common stock. Based on the revised valuation model and the changes in our business and in the market values of biopharmaceutical companies, as well as the impact on our common stock of our increasing enterprise value, we determined that the fair value of our common stock had increased to $1.08 per share as of June 30, 2013.

During the third quarter of 2013, we continued to operate our business in the ordinary course. There were no significant developments in our clinical trials or in our research and development efforts as our Phase 2a clinical trial evaluating beloranib in PWS patients was ongoing. While we continued to meet with investment bankers and continued to carry out activities related to preparation for a potential IPO, we determined that we would need results from our Phase 2a clinical trial of beloranib in patients with PWS before we could engage investment bankers for an IPO. As a result of these factors, we believed that the fair value of our common stock remained unchanged at $1.08 per share through September 30, 2013.

During the fourth quarter of 2013, we continued to operate our business in the ordinary course. Our board of directors determined that the fair value of our common stock remained at $1.08 per share as of October 3, 2013. Later in October, we started to receive initial results from our ongoing Phase 2a clinical trial of beloranib in patients with PWS. In late October 2013, we engaged investment bankers, in anticipation of receiving final results from the PWS Phase 2a clinical trial completed in the fourth quarter and being able to pursue an IPO shortly thereafter. We held our initial IPO organizational meeting in November 2013. We also executed a Series E preferred stock financing, under which we issued shares to new investors in late November 2013 at $2.17 per share, raising net proceeds of $34.8 million. In December 2013, we obtained a third-party valuation of our common stock as one of the factors considered by our board of directors in its determination of the fair value of our common stock as of December 20, 2013. We adjusted our valuation model to account for the increased probability of an IPO scenario, in light of continued favorable market conditions, favorable results from our Phase 2a clinical trial of beloranib in patients with PWS and our progress achieved towards a potential IPO of our common stock. Based on the revised valuation model and the changes in our business and in the market values of biopharmaceutical companies, as well as the impact on our common stock of our increasing enterprise value, our board of directors determined that the fair value of our common stock had increased to $1.54 per share as of December 20, 2013. We believed that the fair value of our common stock remained unchanged through December 31, 2013.

January 1, 2014 through February 3, 2014. Through February 3, 2014, we continued to operate our business in the ordinary course. On January 31, 2014, we submitted to the SEC a confidential draft registration statement for an IPO as contemplated by our board of directors in its determination of the fair value of our common stock as of December 20, 2013. Our board of directors determined that the fair value of our common stock remained unchanged at $1.54 per share as of January 30, 2014. We believe that the fair value of our common stock remained unchanged through February 3, 2014.

Results of Operations

Comparison of Years Ended December 31, 2012 and 2013

The following table summarizes our results of operations for the years ended December 31, 2012 and 2013:

	Year Ended December 31,		Increase (Decrease)
	2012	2013	
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	11,544	9,561	(1,983)
General and administrative	2,247	4,219	1,972
Total operating expenses	13,791	13,780	(11)
Loss from operations	(13,791)	(13,780)	11
Other income (expense):			
Interest expense	(97)	—	97
Foreign currency transaction gains (losses), net	8	(247)	(255)
Total other expense, net	(89)	(247)	(158)
Net loss	$ (13,880)	$(14,027)	$ (147)

Research and development expenses

	Year Ended December 31,		Increase (Decrease)
	2012	2013	
	(in thousands)		
Direct research and development expenses by program:			
Beloranib:			
Pre-clinical and manufacturing	$ 4,365	$ 2,898	$ (1,467)
Clinical trials	2,437	2,983	546
Subtotal	6,802	5,881	(921)
ZGN-839 and other early-stage development	2,193	295	(1,898)
Subtotal	8,995	6,176	(2,819)
Unallocated expenses:			
Personnel related	902	1,258	356
Consultants	1,371	1,981	610
Licensing, milestone and license maintenance fees	150	—	(150)
Other	126	146	20
Subtotal	2,549	3,385	836
Total research and development expenses	$11,544	$9,561	$ (1,983)

Research and development expenses for the year ended December 31, 2012 were $11.5 million, compared to $9.6 million for the year ended December 31, 2013. The decrease of $1.9 million was primarily due to the decreased costs of $1.9 million associated with ZGN-839 and other early-stage development programs (consisting of our second-generation MetAP2 inhibitors) and decreased costs of $0.9 million associated with beloranib, partially offset by an increase in consultant expenses of $0.6 million and an increase in personnel related costs of $0.4 million. During 2013, we focused our research and development efforts primarily on our ongoing clinical trials for beloranib as opposed to our early-stage programs. Expenses related to beloranib decreased year over year as a result of a $1.5 million decrease in pre-clinical and manufacturing expenses,

partially offset by an increase of $0.5 million from our clinical trial expenses. Pre-clinical and manufacturing costs decreased year over year as a result of completing a significant portion of our development-enabling toxicology and other pre-clinical activities related to beloranib in 2012. Clinical trial expenses for beloranib increased by $0.5 million year over year as a result of expenses incurred for our 12-week Phase 2a clinical trial for severe obesity and for our 12-week Phase 2a clinical trial for PWS that were both ongoing in 2013, as compared to expenses incurred for our 12-week Phase 2a clinical trial for severe obesity that started in 2012 and for our 4-week Phase 1b clinical trial for severe obesity that was started and completed in 2012. Expenses for our Phase 2a clinical trial for severe obesity, which ran from the third quarter of 2012 through the second quarter of 2013, were recorded net of a 45% research and development tax incentive from the Australian government of $0.6 million and $1.2 million during the years ended December 31, 2012 and 2013, respectively. Consultant costs increased by $0.6 million year over year primarily due to expenses incurred in conjunction with our IND filing for our Phase 2a clinical trial for PWS. Personnel related costs increased by $0.4 million year over year primarily due to the hiring of a new employee of $0.2 million and increased stock-based compensation of $0.1 million.

General and administrative expenses

	Year Ended December 31,		Increase (Decrease)
	2012	2013	
		(in thousands)	
Personnel related	$ 910	$1,358	$ 448
Professional fees	947	2,463	1,516
Travel and other	390	398	8
Total general and administrative expenses	$2,247	$4,219	$ 1,972

General and administrative expenses for the year ended December 31, 2012 were $2.2 million, compared to $4.2 million for the year ended December 31, 2013. The increase of $2.0 million in general and administrative expenses was primarily due to increased professional fees of $1.5 million and increased personnel related costs of $0.4 million year over year. The increase in professional fees consisted primarily of a $1.0 million increase in accounting and audit, legal and investor relations fees due to ongoing business activities as well as an increase of $0.4 million related to two external market research studies that were conducted in 2013. Personnel related costs increased by $0.4 million year over year primarily due to employee salary and bonus increases of $0.2 million and increases in stock-based compensation of $0.2 million.

Other income (expense), net

Interest expense. Interest expense for the year ended December 31, 2012 was related to interest on convertible promissory notes issued in August 2012 that were subsequently converted into shares of our Series D redeemable convertible preferred stock in November 2012. We had no debt outstanding during 2013.

Foreign currency transaction gains (losses), net. Net foreign currency transaction losses of $0.2 million for the year ended December 31, 2013 were primarily due to the re-measurement of receivables, denominated in Australian dollars, from the Australian government for research and development tax incentives, reflecting both a strengthening of the U.S. dollar relative to the Australian dollar and an increase in our receivable balances for such tax incentives during the year ended December 31, 2013.

Comparison of Years Ended December 31, 2011 and 2012

The following table summarizes our results of operations for the years ended December 31, 2011 and 2012:

	Year Ended December 31,		Increase (Decrease)
	2011	2012	
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	11,403	11,544	141
General and administrative	1,751	2,247	496
Total operating expenses	13,154	13,791	637
Loss from operations	(13,154)	(13,791)	(637)
Other income (expense):			
Interest expense	—	(97)	(97)
Foreign currency transaction gains (losses), net	(3)	8	11
Total other expense, net	(3)	(89)	(86)
Net loss	$(13,157)	$ (13,880)	$ (723)

Research and development expenses

	Year Ended December 31,		Increase (Decrease)
	2011	2012	
	(in thousands)		
Direct research and development expenses by program:			
Beloranib:			
Pre-clinical and manufacturing	$ 4,533	$ 4,365	$ (168)
Clinical trials	990	2,437	1,447
Subtotal	5,523	6,802	1,279
ZGN-839 and other early-stage development	2,332	2,193	(139)
Subtotal	7,855	8,995	1,140
Unallocated expenses:			
Personnel related	590	902	312
Consultants	1,749	1,371	(378)
Licensing, milestone and license maintenance fees	1,055	150	(905)
Other	154	126	(28)
Subtotal	3,548	2,549	(999)
Total research and development expenses	$11,403	$11,544	$ 141

Research and development expenses for the year ended December 31, 2011 were $11.4 million, compared to $11.5 million for the year ended December 31, 2012. The increase of $0.1 million was primarily due to the increased costs of $1.3 million associated with our beloranib product candidate and increased personnel related costs of $0.3 million, partially offset by a decrease of $0.9 million in licensing, milestone and license maintenance fees, a decrease of $0.4 million in consultant expenses, and a decrease of $0.1 million in costs associated with ZGN-839 and other early-stage development programs, consisting of our second-generation MetAP2 inhibitors. Expenses related to beloranib increased year over year as a result of a $1.4 million increase from our clinical trial expenses, partially offset by a decrease of $0.2 million in pre-clinical and manufacturing. Clinical trial expenses for beloranib increased by $1.4 million year over year as a result of expenses incurred for our 4-week Phase 1b clinical trial for severe obesity that was started and completed in 2012 and our 12-week Phase 2a clinical trial for severe obesity that

we commenced in the third quarter of 2012, as compared to expenses incurred solely for our 4-week Phase 1b clinical trial for severe obesity that was completed during 2011. Expenses for our Phase 2a clinical trial for severe obesity incurred in the fourth quarter of 2012 were recorded net of a 45% research and development tax incentive from the Australian government of $0.6 million. There were no research and development tax incentives recorded during the year ended December 31, 2011. Pre-clinical and manufacturing costs associated with beloranib decreased primarily as a result of decreased drug product costs. Personnel related costs increased by $0.3 million year over year primarily due to increased headcount as a result of the addition of our Chief Medical Officer in September 2011, which had the effect of decreasing consultant expense by a similar amount. Licensing, milestone and license maintenance fees decreased by $0.9 million year over year due primarily to the recognition of a $1.0 million milestone payment in 2011.

General and administrative expenses

	Year Ended December 31,		Increase (Decrease)
	2011	2012	
	(in thousands)		
Personnel related	$ 925	$ 910	$ (15)
Professional fees	527	947	420
Travel and other	299	390	91
Total general and administrative expenses	$1,751	$2,247	$ 496

General and administrative expenses for the year ended December 31, 2011 were $1.8 million compared to $2.2 million for the year ended December 31, 2012. The increase of $0.4 million was primarily attributable to increased professional fees of $0.4 million related to ongoing business activities.

Other income (expense), net

Interest expense. Interest expense for the year ended December 31, 2012 was due to interest on convertible promissory notes issued in August 2012 and November 2012 that were subsequently converted into shares of Series D redeemable convertible preferred stock in November 2012. We had no debt outstanding during 2011.

Foreign currency transaction gains (losses), net. We had a small amount of foreign currency transaction losses during the year ended December 31, 2011 compared to a small amount of foreign currency transaction gains during the year ended December 31, 2012. Foreign currency transaction gains and losses related primarily to the re-measurement of foreign currency accounts and foreign currency denominated vendor payables.

Liquidity and Capital Resources

Since our inception in November 2005, we have not generated any revenue and have incurred recurring net losses. As of December 31, 2013, we had a deficit accumulated during the development stage of $68.9 million. We have funded our operations since inception primarily through sales of redeemable convertible preferred stock and, to a lesser extent, through the issuances of convertible promissory notes. From our inception through December 31, 2013, we have received gross proceeds of $103.6 million from such transactions.

As of December 31, 2013, we had cash and cash equivalents totaling $35.5 million. We invest our cash equivalents in money market accounts in order to preserve principal.

On March 31, 2014, we entered into a loan and security agreement, or the 2014 Credit Facility, which provides for initial borrowings of $7.5 million and additional borrowings of up to $12.5 million. On that same date, we received proceeds of $7.5 million from the issuance of promissory notes under a term loan as part of the facility. Of the additional $12.5 million of borrowings available to us, $7.5 million is available to be drawn down until September 30, 2014 and $5.0 million is available subject to our completion of an initial public offering with net cash proceeds to us of at least $50.0 million, or a Qualified IPO. Upon a Qualified IPO, that additional $5.0 million will be available to be drawn down through the earlier of December 31, 2014 or 30 days after the Qualified IPO. All promissory notes issued under the 2014 Credit Facility are due on December 1, 2017 and are collateralized by substantially all of our personal property, other than our intellectual property. There are no

financial covenants associated with the debt facility; however, there are negative covenants restricting our activities, including limitations on dispositions, mergers or acquisitions; encumbering or granting a security interest in our intellectual property; incurring indebtedness or liens; paying dividends; making certain investments; and certain other business transactions.

Under the 2014 Credit Facility, we are obligated to make monthly, interest-only payments on any term loans funded under the facility until December 1, 2014 and, thereafter, to pay 36 consecutive, equal monthly installments of principal and interest from January 1, 2015 through December 1, 2017. Upon a Qualified IPO, the term of monthly, interest-only payments will be extended until June 1, 2015. Term loans under the 2014 Credit Facility bear interest at an annual rate of 8.1%. In addition, a final payment equal to 6.0% of any amounts drawn down under the facility is due upon its maturity date. We are also obligated to pay a separate fee of up to $0.5 million upon any initial public offering; a sale of substantially all of our assets; or a merger, reorganization or sale of our voting equity securities where existing voting stockholders hold less than 50% of voting equity securities after such transaction.

The following table summarizes our sources and uses of cash for each of the periods presented below:

	Year Ended December 31,		
	2011	2012	2013
		(in thousands)	
Cash used in operating activities	$(12,274)	$(13,589)	$(15,004)
Cash used in investing activities	(45)	(2)	(17)
Cash provided by financing activities	10,069	22,059	40,603
Net increase (decrease) in cash and cash equivalents	$ (2,250)	$ 8,468	$25,582

Net cash used in operating activities

During the year ended December 31, 2011, operating activities used $12.3 million of cash, primarily resulting from our net loss of $13.2 million, partially offset by cash provided from changes in our operating assets and liabilities of $0.8 million. Our net loss was primarily attributed to research and development activities related to our beloranib and ZGN-839 programs and our general and administrative expenses, as we had no revenue in the period. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2011 consisted primarily of an increase in accrued expenses of $0.9 million. Our accrued expense balances were affected by the timing of vendor invoicing and payments.

During the year ended December 31, 2012, operating activities used $13.6 million of cash, primarily resulting from our net loss of $13.9 million, partially offset by non-cash charges of $0.2 million and by cash provided from changes in our operating assets and liabilities of $0.1 million. Our net loss was primarily attributed to research and development activities related to our beloranib and ZGN-839 programs and our general and administrative expenses, as we had no revenue in the period. Our net non-cash charges during the year ended December 31, 2012 primarily consisted of stock-based compensation expense of $0.1 million and non-cash interest expense of $0.1 million. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2012 consisted primarily of a $1.0 million increase in accounts payable and accrued expenses, partially offset by a $0.6 million increase in our research and development tax incentive receivable from the Australian government and a $0.3 million increase in prepaid expenses and other current assets. Our prepaid expenses and other current assets, accounts payable and accrued expense balances were affected by the timing of vendor invoicing and payments.

During the year ended December 31, 2013, operating activities used $15.0 million of cash, resulting from our net loss of $14.0 million and from cash used by changes in our operating assets and liabilities of $1.6 million, partially offset by non-cash charges of $0.7 million. Our net loss was primarily attributed to research and development activities related to our beloranib program and our general and administrative expenses, as we had no revenue in the period. Net cash used by changes in our operating assets and liabilities during the year ended December 31, 2013 consisted primarily of a $1.2 million increase in our research and development tax incentive receivable from the Australian government. Our net non-cash charges in the year primarily consisted of stock-based compensation expense of $0.4 million and unrealized foreign currency transaction losses of $0.3 million. Unrealized

foreign currency transaction losses related to our outstanding foreign currency-denominated research and development tax incentive receivable from the Australian government.

Net cash used in investing activities

We used a small amount of cash during the years ended December 31, 2011, 2012 and 2013 related to purchases of property and equipment. During the year ended December 31, 2011, we also paid a small deposit related to our office lease which we expect to be returned at the completion of the lease.

Net cash provided by financing activities

During the year ended December 31, 2011, net cash provided by financing activities was $10.1 million as a result of net proceeds raised from issuances of our Series B redeemable convertible preferred stock and Series C redeemable convertible preferred stock.

During the year ended December 31, 2012, net cash provided by financing activities was $22.1 million. Net cash provided by financing activities primarily resulted from net proceeds of $16.1 million raised from issuances of our Series C redeemable convertible preferred stock and Series D redeemable convertible preferred stock and net proceeds of $6.0 million from the issuance of convertible promissory notes.

During the year ended December 31, 2013, net cash provided by financing activities was $40.6 million as a result of net proceeds of $6.0 million from issuances of our Series D redeemable convertible preferred stock and $34.8 million from issuances of our Series E redeemable convertible preferred stock, partially offset by payments of $0.2 million of deferred offering costs in anticipation of our proposed initial public offering that we expect to complete in 2014.

Beloranib is still in clinical development and ZGN-839 and our second-generation MetAP2 inhibitors are in pre-clinical development. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we:

- advance the clinical development of beloranib as a treatment for obesity and hyperphagia in PWS patients through Phase 3 clinical trials;
- advance the clinical development of beloranib as a treatment for craniopharyngioma-associated obesity through a Phase 2a clinical trial and the initiation of pivotal clinical trials;
- initiate IND-enabling studies and clinical development of ZGN-839 and our second-generation MetAP2 inhibitors through the initiation of Phase 1 clinical development;
- initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population;
- seek to identify additional indications for beloranib;
- seek to obtain regulatory approvals for our product candidates;
- add operational, financial and management information systems;
- add personnel, including personnel to support our product development and future commercialization; and
- maintain, leverage and expand our intellectual property portfolio.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents as of December 31, 2013 and available borrowings under our March 2014 credit facility, will enable us to fund our operating expenses and capital expenditures requirements for at least months. We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development of beloranib, ZGN-839 and our second-generation MetAP2 inhibitors and because the extent to which we may enter into collaborations with third parties for development of these product candidates is unknown, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates. Our future capital requirements for beloranib, ZGN-839 and our second-generation MetAP2 inhibitors will depend on many factors, including:

- the costs, timing and outcome of regulatory review;

- the costs of future research and development activities, including clinical trials;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other products and technologies; and
- our ability to establish any future collaboration arrangements on favorable terms, if at all.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends and may require the issuance of warrants, which could potentially dilute your ownership interest. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs of beloranib, ZGN-839 or our second-generation MetAP2 inhibitors or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market beloranib, ZGN-839 or our second-generation MetAP2 inhibitors that we would otherwise prefer to develop and market ourselves.

Since our inception in 2005, we have not recorded any U.S. federal or state income tax benefits for the net losses we have incurred in each year or our earned research and development tax credits, due to our uncertainty of realizing a benefit from those items. As of December 31, 2013, we had federal and state net operating loss carryforwards of $10.5 million and $8.2 million, respectively. Our federal net operating loss carryforwards begin to expire in 2026, and our state net operating loss carryforwards begin to expire in 2014. As of December 31, 2013, we also had federal and state research and development tax credit carryforwards of $4.7 million and $1.3 million, respectively, which begin to expire in 2026 and 2021, respectively. We have not completed a study to assess whether an ownership change, generally defined as a greater than 50% change (by value) in the equity ownership of our corporate entity over a three-year period, has occurred or whether there have been multiple ownership changes since our inception, due to the significant costs and complexities associated with such studies. Accordingly, our ability to utilize our tax carryforwards may be limited. Additionally, U.S. tax laws limit the time during which these carryforwards may be utilized against future taxes. As a result, we may not be able to take full advantage of these carryforwards for federal and state tax purposes.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at December 31, 2013 and the effect such obligations are expected to have on our liquidity and cash flow in future periods:

	Payments Due By Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 years
	(in thousands)				
Operating lease commitments[1]	$ 64	$ 64	$ —	$ —	$ —
Total[2] [3]	$ 64	$ 64	$ —	$ —	$ —

(1) We lease office space in Cambridge, Massachusetts under an operating lease agreement that initially expired on July 31, 2013, but was amended in 2013 to extend the lease through January 31, 2014, with an opportunity to extend for up to two six-month periods. We have extended the lease pursuant to the terms of the first extension option, under which the lease expires on July 31, 2014 and is cancellable upon 30 days' notice.

(2) We have acquired exclusive rights to develop patented compounds and related know-how under licensing agreements for beloranib with two third parties. The licensing rights obligate us to make payments to the licensors for license fees, milestones, license maintenance fees and royalties. We are also responsible for patent prosecution

costs. We are obligated to make future milestone payments under these agreements of up to $19.0 million upon achieving certain pre-commercialization milestones, such as clinical trials and government approvals, and up to $12.5 million upon achieving certain product commercialization milestones. In addition, under one of the license agreements, we are obligated to pay up to $1.3 million with respect to each subsequent licensed product, if any, that is a new chemical entity. We reasonably anticipate that we may be required to pay $6.7 million of milestone payments in 2014, provided various development milestones are achieved. Amounts related to contingent milestone payments are not considered contractual obligations as they are contingent on the successful achievement of certain milestones. These milestones may not be achieved. Because the achievement of these milestones has not occurred as of December 31, 2013, no liabilities for such contingencies have been recorded in our consolidated financial statements. In addition, we will owe single-digit royalties on sales of commercial products developed using these licensed technologies, if any. We are obligated to pay to the licensors a percentage of fees received if and when we sublicense the technologies. As of December 31, 2013, we have not yet developed a commercial product using the licensed technologies and we have not entered into any sublicense agreements for the technologies.

(3) We enter into contracts in the normal course of business with CROs for clinical trials, pre-clinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts generally provide for termination upon notice, and therefore we believe that our non-cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under Securities and Exchange Commission rules, such as relationships with unconsolidated entities or financial partnerships, which are often referred to as structured finance or special purpose entities, established for the purpose of facilitating financing transactions that are not required to be reflected on our balance sheets.

Recently Issued Accounting Pronouncements

Accounting standards that have been issued or proposed by the Financial Accounting Standards Board or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on our consolidated financial statements upon adoption.

Quantitative and Qualitative Disclosure about Market Risk

Interest Rate Fluctuation Risk

Our cash and cash equivalents as of December 31, 2013 consisted of cash and money market accounts. The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on our financial condition and/or results of operation.

Foreign Currency Exchange Risk

Foreign currency transaction exposure results primarily from transactions with our contract research organizations and other providers related to our clinical trials that are denominated in currencies other than the functional currency of the legal entity in which the transaction is recorded by us, primarily the Australian dollar. Any transaction gains or losses resulting from currency fluctuations is recorded on a separate line in our consolidated statement of operations. Net foreign currency transaction losses of $0.2 million were recorded for the year ended December 31, 2013.

Currently, our largest foreign currency exposures are those with respect to the Australian dollar. Relative to foreign currency exposures existing as of December 31, 2013, a 10% unfavorable movement in foreign currency exchange rates would expose us to losses in earnings. For the year ended December 31, 2013, we estimated that a 10% unfavorable movement in foreign currency exchange rates would have increased our net loss by $0.2 million. This amount is based on a sensitivity analysis performed on our financial position as of December 31, 2013. We have experienced and we will continue to experience fluctuations in our net income (loss) as a result of revaluing our assets and liabilities that are not denominated in the functional currency of the entity that recorded the asset or liability. At this time, we do not hedge our foreign currency risk.

BUSINESS

Overview

We are a biopharmaceutical company dedicated to significantly improving the health and well-being of patients affected by obesity. Beloranib, our lead product candidate, is a novel, first-in-class, twice-weekly subcutaneous injection being developed for the treatment of multiple indications, including obesity and hyperphagia, or insatiable life-threatening hunger and hunger-related behaviors, in Prader-Willi Syndrome, or PWS, craniopharyngioma-associated obesity, and severe obesity in the general population.

PWS is a rare and complex genetic disorder characterized by physiologic, cognitive and behavioral symptoms, including hyperphagia and obesity. We recently completed two Phase 2a clinical trials evaluating beloranib's ability to reduce body weight and to improve hyperphagia, one in PWS patients and one in severely obese patients. In our Phase 2a clinical trials, we observed reductions in body weight, body mass and body fat content in both patient populations and reductions in hyperphagia-related behaviors in PWS patients. In January 2013, the U.S. Food and Drug Administration, or FDA, granted orphan designation for our application to treat PWS with beloranib. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014 after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities. We filed an application to obtain orphan drug designation for beloranib as a treatment for PWS in the European Union in early 2014. We believe that rare conditions such as PWS afford us an opportunity to rapidly develop and commercialize beloranib using smaller, more focused and less costly clinical trials, relative to those required to develop beloranib for the broader severe obesity population.

Obesity is a complex medical disorder involving appetite dysregulation and altered lipid and energy metabolism that results in excessive accumulation of fat tissue. Weight loss and hunger control are urgently needed for certain subpopulations of obese patients, such as those with PWS and craniopharyngioma, whose obesity is life-threatening and a co-morbidity of an underlying condition. These conditions are characterized by uncontrollable hunger resulting from damage to or impaired functioning of the hypothalamus, an area of the brain responsible for many functions including the desire to eat. Published population studies estimate that the prevalence of PWS in the United States and in the European Union ranges from 1 in 8,000 to 1 in 50,000. The physiological drive to eat in PWS patients is so powerful that they will go to great lengths to eat large quantities of food, even if it is spoiled, indigestible or unpalatable to others. Unsupervised patients will often eat to the point that it causes serious physical harm or death. As a result, caregivers are often forced to place locks and alarms on refrigerators and pantries that contain food. Despite attempts to control the access to food, the typical adult PWS patient is morbidly obese and, based on our evaluation of published survival data, has an average life expectancy of 32 years of age. Unfortunately, neither dietary intervention nor currently available pharmaceutical therapies bring meaningful benefit to PWS patients and, as a result, they experience severe and life-threatening consequences of their condition. Furthermore, existing surgical techniques such as bariatric surgery are contraindicated in PWS, as PWS patients often overeat to a point whereby they can rupture their stomachs, which is frequently a cause of death. Since beloranib works through a novel mechanism that does not appear to require a fully functioning hypothalamic control pathway, we believe that obese patients with conditions in which increased hunger is central to the disease may respond well to treatment with beloranib.

Zafgen was founded in 2005 to explore novel approaches to obesity therapeutics, including agents known to inhibit methionine aminopeptidase 2, or MetAP2, that had been found to drive unprecedented weight loss and metabolic improvements in mice. After performing a wide range of experiments to validate the effects of MetAP2 inhibitors in validated animal models, we committed the full resources of the company to testing the efficacy and safety of MetAP2 inhibition in obese patients and to establishing the feasibility of MetAP2 inhibitors for eventual commercialization. This effort led to our initiation of medicinal chemistry efforts to identify novel MetAP2 inhibitors, and to search for compounds that were more advanced in clinical development. We identified beloranib as a suitable in-licensing candidate, and, in parallel with preparing beloranib for use in otherwise healthy but obese patients, we conducted our own chemistry program to identify compounds with complementary characteristics. After completing studies to establish preliminary safety, mechanism of action, manufacturing feasibility and clinical proof of concept, we advanced beloranib as a clinical

development candidate and explored its application in severely obese patient populations. Our early clinical experience highlighted several key aspects of beloranib's actions, including rapid and robust weight loss, changes in circulating hormones known to impact fat metabolism, clinically significant reductions in cardiovascular disease risk markers and a particularly striking impact on hunger. These benefits may be of particular relevance to patients suffering from severe obesity and life-limiting obesity driven by other underlying conditions, and for whom existing therapies fail to bring needed benefits.

We are pursuing clinical development of beloranib as a treatment for severely obese patients in the general population, including patients otherwise eligible for bariatric surgery. Bariatric surgery eligibility criteria generally identify surgical candidates as those patients with body mass indices, or BMIs, greater than 40 kg/m^2, or those with BMIs over 35 kg/m^2 who also have a significant and uncontrolled co-morbid condition. Based on these criteria, it is estimated conservatively that there will be at least 16 million adults in the United States eligible for bariatric surgery by the time beloranib or another MetAP2 inhibitor could become available commercially. Bariatric surgery results in significant weight loss, but the financial expense and the potential for complications, adverse events and longer-term side effects limit its overall adoption, with only a few hundred thousand patients in the United States undergoing bariatric surgery each year. Existing pharmacotherapies result in less weight loss than surgical options, and these therapies not only have undesirable side effects, but also have risk of abuse. Due to the significant barriers associated with bariatric surgery and the limited weight loss potential of currently marketed pharmaceutical products, there is a significant unmet need for the treatment of patients with severe obesity. We believe this patient population would benefit from MetAP2 inhibitor treatment through the reduction of body weight and through improvement of other co-morbid conditions.

In 2013, we completed a 12-week Phase 2a clinical trial of beloranib administered twice weekly in obese patients. We observed placebo-adjusted weight loss, or weight loss observed beyond that seen in the control arm, of up to 10.3% after 12 weeks of treatment with beloranib. In addition, we observed reductions in levels of low density lipoprotein cholesterol, C-reactive protein and systolic blood pressure. Patients treated with beloranib also reported reduced hunger, as assessed using a visual analog scale, a widely used self-reported measure of hunger and related endpoints. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. We are also evaluating additional proprietary MetAP2 inhibitors beyond beloranib as potential development candidates that would provide increased patient convenience in the form of oral dosing, or an otherwise improved clinical profile. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical trial of beloranib in PWS patients and discussions with regulatory authorities. MetAP2 inhibitors may also have utility in the treatment of other metabolic diseases, such as nonalcoholic steatohepatitis, or NASH, and type 2 diabetes. In a mouse model of diabetes and NASH, our second product candidate, ZGN-839, a MetAP2 inhibitor, reduced the severity of NASH and reduced plasma glucose.

Beloranib is a novel, first-in-class injectable small molecule therapy with a unique mechanism of action that reduces hunger while stimulating the use of stored fat as an energy source. Beloranib is the first anti-obesity agent with the potential to address two important abnormalities that are present in the obese patient—hunger that is inappropriate relative to the amount of energy stored as fat and dysregulation of fat metabolism, which causes more fat to be made and stored in an obese patient than in a lean person. Beloranib acts through potent inhibition of MetAP2, an enzyme that modulates the activity of key cellular processes that control metabolism. MetAP2 inhibitors work, at least in part, by directing MetAP2 binding to cellular stress mediators, thereby reducing the tone of signals that drive lipid synthesis by the liver and fat storage throughout the body. In this manner, MetAP2 inhibition serves the purpose of re-establishing balance to the ways the body packages and metabolizes fat and glucose. MetAP2 inhibitors reduce the production of new fatty acid molecules by the liver and help convert stored fats into useful energy, while reducing hunger.

We have completed five clinical trials, including two Phase 2a clinical trials, evaluating beloranib in over 200 patients. Although these clinical trials were of short duration and designed to demonstrate safety and tolerability, significant decreases in both body weight and sense of hunger were observed in patients treated with beloranib when compared to the placebo group.

Additional clinical trials of longer-term treatment with beloranib designed to demonstrate efficacy are required before we can submit an NDA for beloranib as a treatment for any indication that we are pursuing. In our planned Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population and our planned Phase 3 clinical program of beloranib as a treatment for PWS patients, patients will be treated with beloranib for a substantially longer period of time than as treated in our earlier clinical trials. In addition, we observed improvements in cardiovascular disease risk factors such as plasma total cholesterol, low density lipoprotein cholesterol and C-reactive protein. Across our completed clinical trials, beloranib has been well-tolerated at doses in the range of 1.0 mg to 2.0 mg administered twice weekly, and has not been associated with serious side effects. Laboratory safety measures, vital signs and electrocardiograms have been unremarkable in all completed clinical trials for all doses of beloranib tested.

Product Pipeline

The following table summarizes our product pipeline and development status of our product candidates for the treatment of indications we are currently pursuing:

Indication	Product Candidate	Stage of Development	Development Status
Obesity and hyperphagia in PWS patients	Beloranib	Phase 2a	• Phase 2a clinical trial completed • Phase 2a clinical trial report expected to be ready in the second quarter of 2014 • Phase 3 clinical program design being finalized and expected to begin in 2014, pending input from regulatory authorities
Craniopharyngioma-associated obesity	Beloranib	Phase 2a	• Phase 2a clinical trial expected to start in the first half of 2014
Severe obesity in the general population	Beloranib	Phase 2a	• Phase 2a clinical trial completed • Phase 2b clinical trial expected to begin in the second half of 2014 • Advancement into pivotal trials under consideration
	Second-generation MetAP2 inhibitors	Pre-clinical	• Development candidates under consideration
Nonalcoholic steatohepatitis, or NASH, nonalcoholic fatty liver disease, abdominal obesity and type 2 diabetes	ZGN-839	Pre-clinical	• Pre-clinical studies ongoing • Investigational New Drug Application, or IND, filing anticipated by the first half of 2015

Populations of Interest

Obesity Caused by Rare Conditions

Obesity is a complex medical disorder involving appetite dysregulation and altered lipid and energy metabolism that results in excessive accumulation of fat tissue. We initially plan to develop beloranib for the treatment of subpopulations of obese patients, including those with rare conditions such as PWS and craniopharyngioma, where obesity is a co-morbidity of an underlying condition. These conditions frequently are characterized by increased and life-threatening hunger that occurs secondary to damage to the hypothalamus, genetic conditions affecting embryological development or function of the hypothalamus, or conditions that occur as a result of certain drug side effects, radiation therapy, or other impairments to the normal function of the hypothalamus. Regardless of the causative agent or condition, the resultant damage to the hypothalamus impairs its normal function, including the ability to modulate hunger. These conditions are most often associated with a severe and life-limiting form of obesity and neither dietary interventions nor currently available pharmaceutical therapies bring meaningful benefit to these patients, for whom bariatric surgery is generally contra-indicated. Based on results from animal experiments in which compromised hypothalamic function caused hunger and obesity, we believe that beloranib may have utility in the treatment of severe obesity and hyperphagia, or excess

hunger, in human disease settings in which hypothalamic food intake control centers are compromised. We are developing beloranib in these subpopulations of patients as a treatment for obesity and hyperphagia in PWS patients and craniopharyngioma-associated obesity, and are continuing to explore the use of beloranib as a treatment for severe obesity in the general population.

PWS

PWS is the most common known genetic cause of life-threatening obesity. PWS is a rare and complex non-inherited genetic disorder, which results from abnormalities of the fifteenth chromosome. Symptoms associated with PWS are believed to result, in part, from a defect in the hypothalamus, an important supervisory center in the brain that controls many important bodily functions, such as hunger, metabolism of fats and carbohydrates, regulation of the sleep-wake cycle and expression of emotions.

Beginning in childhood, the brain of a PWS patient fails to regulate metabolism and appetite normally. As a result, the vast majority of PWS patients suffer from hyperphagia and obesity. PWS patients are constantly preoccupied with food and an unrelenting and overriding physiological drive to eat. Hyperphagia, a leading symptom of PWS, has a significant negative impact on the patients' quality of life as well as drives obesity and a range of associated co-morbidities. Normal satiety, or the feeling of fullness after eating, does not exist in a person with PWS. The physiological drive to eat is so powerful and overwhelming that most PWS patients will go to great lengths to eat large quantities of food, even if it is spoiled, indigestible, or unpalatable to others. Furthermore, PWS patients have a reduced propensity for nausea and vomiting. In addition to obesity, a variety of other symptoms can be associated with PWS, including cognitive challenges, intellectual disabilities, growth hormone deficiency/short stature, low sensitivity to pain, hypersomnolence, or excessive sleepiness, and infertility due to hypogonadism, or insufficient production of sex hormones.

Hyperphagia impairs the PWS patients' ability to live independently, requiring costly and constant supervision to prevent overeating. Without supervision, PWS patients are likely to die prematurely as a result of choking, stomach rupture or tissue necrosis, or from complications caused by morbid obesity, such as right heart failure and respiratory failure. Based on our evaluation of published survival data, the average life expectancy of PWS patients is approximately 32 years of age. While a small number of PWS patients are cared for in costly group homes, the majority of PWS patients are cared for in their homes and their families undertake substantial effort to create physical barriers to eating. These efforts result in extremely stressful environments as caregivers often place locks and alarms on cabinets and refrigerators that contain food to impede PWS patients' efforts to obtain food at all times. We estimate the typical annual cost of treating a PWS patient is $100,000 to $200,000, excluding the often significant costs of drug therapies related to other medical and psychological conditions, and the costs of any lost time from work experienced by their families due to responsibilities related to the care of a PWS patient.

Published population studies estimate that the prevalence of PWS in the United States and in the European Union ranges from 1 in 8,000 to 1 in 50,000. PWS is diagnosed at an early age, typically in the first year of life, and we believe that, due to the severity of the condition and its unique attributes, the vast majority of patients affected by PWS are diagnosed. Approximately 50% of PWS patients are 13 years of age or older. We believe that further information regarding the prevalence of PWS will become available through a patient registry that is currently being developed by the Foundation for Prader-Willi Research.

Although there are pharmacological treatments for various symptoms of PWS, such as replacement of human growth hormone in PWS patients that are deficient in growth hormone, based on our discussions with physicians who treat PWS patients, there are currently no effective pharmacological treatments for obesity and hyperphagia in PWS. Furthermore, bariatric surgery is contraindicated in PWS patients due to poor outcomes related to an increased risk of rupture of the reduced stomach in the setting of sleeve gastrectomy or gastric bypass procedures, or rupture of the restricted esophagus in the setting of gastric banding procedures with the consequence of life-threatening gastric perforation. Apart from restricted access to food and constant supervision to prevent both life-threatening overeating and morbid obesity, there is currently no treatment for obesity and

hyperphagia in PWS patients. We recently completed a Phase 2a clinical trial evaluating beloranib's ability to reduce body weight and to improve hyperphagia in PWS patients. In this clinical trial, we observed reductions in body weight, body mass, body fat content and hyperphagia-related behaviors in PWS patients treated with beloranib. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014 after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities.

In January 2013, the FDA granted orphan designation for our application to treat PWS with beloranib. We filed an application to obtain orphan drug designation for beloranib as a treatment for hyperphagia and obesity in PWS in the European Union in early 2014. Orphan drug designation provides for seven years of marketing exclusivity in the United States and ten years of marketing exclusivity in the European Union.

Craniopharyngioma-Associated Obesity

Craniopharyngioma is a rare form of benign brain tumor that occurs near the optic nerve, pituitary gland and hypothalamus. Approximately 30% to 50% of cases of craniopharyngioma are diagnosed in childhood and adolescence. Manifestations of craniopharyngioma include visual disturbances, headaches and impairment to the hypothalamus-pituitary axis affecting hormone secretion. Treatment of these tumors commonly involves radical surgical removal of the tumor mass by endoscopy or craniotomy, followed by radiation treatment, which results in disruption or removal of neighboring structures including the hypothalamus. Depending on the degree of damage to the hypothalamus caused by tumor removal and subsequent radiation, there may be greater variation in hyperphagia and obesity prevalence in craniopharyngioma patients than PWS patients. Post-treatment hypothalamic dysfunction results in hyperphagia in approximately 50% of these patients, resulting in obesity and a worsened quality of life.

Published population studies estimate that the incidence of craniopharyngioma is 0.13 to 0.17 per 100,000 per year, or approximately 400 to 500 cases per year in the United States and 650 to 850 cases per year in the European Union. We believe patients with craniopharyngioma-associated obesity have a longer life expectancy than PWS patients, which contributes to an increased risk of developing obesity-related co-morbid conditions such as type 2 diabetes in such patients.

Currently, there are no pharmacological agents for the treatment of hyperphagia and resultant obesity seen in patients with craniopharyngioma-associated obesity, and bariatric surgery is not frequently employed in this patient population. We believe this is related to perceived risks of surgical interventions in this population including increased risk of post-surgical complications.

We plan to seek orphan drug designation for the treatment of craniopharyngioma-associated obesity in the United States and the European Union, and anticipate initiating a Phase 2a clinical trial, ZAF-221, evaluating the impact of beloranib treatment on body weight, body composition and hyperphagia in patients with craniopharyngioma-associated obesity in the first half of 2014. Depending upon the outcome of our Phase 2a clinical trial, we anticipate that our Phase 3 clinical trial of beloranib as a treatment of craniopharyngioma-associated obesity will evaluate beloranib's impact on weight loss, body composition and hyperphagia.

Severe Obesity in the General Population

Our long-term intention is to pursue clinical development of beloranib or another MetAP2 inhibitor as a treatment for severely obese patients in the general population. We believe this patient population would benefit from MetAP2 inhibitor treatment through the reduction of body weight and through improvement of severity or symptoms of other co-morbid conditions. We believe that MetAP2 inhibitors have the potential to offer this patient population, most of which is not adequately responsive to available therapies, substantial health and quality of life benefits.

The most effective current treatment for severe obesity is bariatric surgery, including procedures such as the Roux-en-Y gastric bypass, adjustable gastric banding, sleeve gastrectomy and biliopancreatic diversion. Bariatric surgery produces dramatic and sustained weight loss, ranging on average from 20% to 35% one year post-

procedure and reduces overall mortality, but it can result in numerous complications and adverse events including thrombotic events, such as pulmonary embolism, infection, internal bleeding, pulmonary disease and gastrointestinal obstruction, which sometimes requires reoperation during the post-operative period. Longer-term side effects of bariatric surgery, such as poor nutrient absorption, strictures and hernias, have also been observed.

Bariatric surgery eligibility criteria generally identify surgical candidates as those patients with BMIs, greater than 40 kg/m ^{2}, or those with BMIs over 35 kg/m^2 who also have a significant and uncontrolled co-morbid condition. Based on these criteria, it is estimated conservatively that there will be at least 16 million adults in the United States eligible for bariatric surgery by the time beloranib or another MetAP2 inhibitor could become available commercially. In addition to the BMI and co-morbidity eligibility criteria, patients need to satisfy a number of other criteria in order to have bariatric surgery; a severely obese patient must not have any known endocrine causes of obesity, a drug or alcohol problem, or an uncontrolled psychological condition, and must understand and appreciate the risks of the surgical intervention. According to the American Society for Metabolic & Bariatric Surgery and to HealthGrades, the average cost of bariatric surgery in the United States is approximately $22,000-$38,000. As a result of these limiting criteria and the financial commitments required, only a few hundred thousand patients undergo bariatric surgery each year even though over 16 million patients in the United States are eligible for the surgery based on BMI alone.

The pharmaceutical industry has undertaken several waves of activity to discover and develop new drugs for the treatment of obesity. Relative to bariatric surgery, pharmaceutical treatments have produced modest efficacy. In addition, existing pharmacotherapeutics for obesity often have undesirable adverse event profiles.

The following table summarizes information from pivotal trials supporting registration for the current pharmacological treatments for severe obesity and the key limitations of these treatments, and unless specified otherwise in the table below, weight loss data is based on one year or longer treatment with the drug:

Treatment	% Placebo-Adjusted Weight Loss*	Key Limitations**
Phentermine	3.8-4.4% over 6 months	• Short-term use only • Cannot be used in pregnant women
Xenical®/ alli	2-5%	• Unpleasant gastrointestinal side effects related to dietary fat malabsorption
Qsymia®	6.6% at target dose of 7.5mg/46 mg 8.6% at high dose of 15mg/92mg	• Known human teratogen – cannot be used in women unless contraception can be assured
Belviq®	3.0-3.3%	• Should not be taken during pregnancy or by women who are planning to become pregnant

* Placebo-adjusted weight loss refers to the difference in mean weight loss observed in drug-treated patients and the weight change within the same trial observed in placebo-treated patients. This analysis takes into account, at least in part, the impact of diet and lifestyle interventions employed in drug registration trials.

** Some patients in our clinical trials of beloranib have reported gastrointestinal side effects, such as nausea, diarrhea or vomiting as well as sleep disturbance. In addition, beloranib will likely carry a Category X label and therefore be contraindicated in pregnant women or women looking to become pregnant.

In 2013, we completed a 12-week Phase 2a clinical trial of beloranib administered twice weekly in obese patients. We observed placebo-adjusted weight loss, or weight loss observed beyond that seen in the control arm, of up to 10.3% after 12 weeks of treatment with beloranib. In addition, we observed reductions in levels of low density lipoprotein cholesterol, C-reactive protein and systolic blood pressure. Patients treated with beloranib also reported reduced hunger, as assessed using a visual analog scale, a widely used self-reported measure of hunger and related endpoints. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. We are also evaluating additional proprietary MetAP2 inhibitors beyond

beloranib as potential development candidates that would provide increased patient convenience in the form of oral dosing, or an otherwise improved clinical profile. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical program of beloranib in PWS patients and discussions with regulatory authorities. Future clinical development may address the impact of beloranib or a related drug on type 2 diabetes and other common co-morbid conditions associated with obesity.

Our Strategy

Our objective is to be a leader in the discovery, development and commercialization of novel therapies to significantly improve the health and well-being of patients affected by obesity. Key elements of our strategy include:

- ***Advance the clinical development of beloranib in subpopulations of obese patients, including those with rare conditions, where obesity is a co-morbidity of an underlying condition.*** Diseases in this category include PWS, hypothalamic damage that is caused by trauma, surgical removal of tumors (including craniopharyngioma), radiation therapy of mid-brain tumors and monogenic loss of function mutations, including leptin deficiency and melanocortin receptor subclass 4 mutations. We believe that rare conditions such as PWS afford us an opportunity to rapidly develop and commercialize beloranib using smaller, more focused and less costly clinical trials, relative to those required to develop beloranib for the broader severe obesity population. Beloranib exerts its weight loss effects using a novel mechanism that does not appear to require fully functioning hypothalamic control pathways. We believe this mechanism is well-suited for patients with obesity that is caused by the failure of hypothalamic food intake control mechanisms, in particular the control of relentless and pathological hunger, or hyperphagia. In 2013, we completed a Phase 2a clinical trial of beloranib as a treatment for obesity in PWS patients, the most common known genetic cause of life-threatening obesity. In this clinical trial, we observed reductions in body weight, body mass, body fat content and hyperphagia-related behaviors in PWS patients treated with beloranib. We expect the full clinical trial report will be available in the second quarter of 2014. We plan to initiate a Phase 3 clinical program of beloranib in PWS patients in 2014, after finalizing the program design based on conversations with the FDA and certain other foreign regulatory authorities. We also plan to initiate a Phase 2a clinical trial of beloranib in patients with craniopharyngioma-associated obesity in the first half of 2014.
- ***Advance the clinical development of MetAP2 inhibitors for the treatment of severely obese patients in the general population, including those who are candidates for bariatric surgery.*** We believe the severely obese patient population would benefit from MetAP2 inhibitor treatment through the reduction of body weight and through improvement of other co-morbid conditions. Bariatric surgery results in significant weight loss, but the financial expense and the potential for complications, adverse events and longer-term side effects limit its overall adoption, with only a few hundred thousand patients in the United States undergoing bariatric surgery each year. Existing pharmacotherapies result in less weight loss than surgical options, and these therapies not only have undesirable side effects, but also have risk of abuse. We recently completed a 12-week Phase 2a clinical trial of beloranib administered twice weekly in obese patients. We observed placebo-adjusted weight loss of up 10.3% after 12 weeks of treatment with beloranib in addition to reductions in levels of low density lipoprotein cholesterol, C-reactive protein and systolic blood pressure. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. A decision on whether to subsequently advance beloranib into pivotal trials for severe obesity or to leverage the opportunity to advance another MetAP2 inhibitor into early development for severe obesity is anticipated to be made on the basis of results obtained from our planned Phase 3 clinical program of beloranib in PWS patients and discussions with regulatory authorities.
- ***Leverage the knowledge of our experienced team of drug developers that have deep expertise in the field of obesity, the function of MetAP2 inhibitors and metabolic diseases.*** Our management team has deep expertise in obesity and related metabolic diseases, the function of MetAP2 inhibitors, the strengths

and weaknesses of current treatments for obesity and the ability to recognize the potential of novel therapies for the treatment of obesity. Our team is complemented by highly experienced external consultants and collaborators in the areas of drug discovery, development and regulatory approval.

- ***Maintain flexibility in commercializing and maximizing the value of our development programs.*** While we intend to develop and commercialize beloranib for indications such as PWS and other rare conditions causing obesity, we may enter into strategic relationships with biotechnology or pharmaceutical companies to realize the full value of beloranib or our other earlier-stage development programs. For beloranib, we may enter into one or more strategic relationships to access broader geographic markets or additional indications. These relationships could focus on specific patient populations and their caregivers, on regional development, or on distribution and sales of beloranib.
- ***Development of other potential product candidates.*** We have a second program focused on the delivery of MetAP2 inhibitors with targeted tissue distribution that shows early promise in animal models of abdominal obesity, fatty liver and type 2 diabetes. Our lead MetAP2 inhibitor in this class of molecules is called ZGN-839. We believe that compounds such as ZGN-839 will have utility in the treatment of type 2 diabetes in humans and will further cause improvements in cardiovascular risk factors including low density lipoprotein cholesterol. We plan to advance multiple candidate drugs into early development to establish clinical proof of concept, safety and tolerability of these molecules as a way to leverage our internal know-how in metabolic diseases and the effects of MetAP2 inhibitors. These compounds, typified by ZGN-839, could provide additional short-term value to our company through focused development partnerships and collaborations.

Mechanism of Action

Beloranib is a novel, first-in-class injectable small molecule therapy with a unique mechanism of action that reduces hunger while stimulating the use of stored fat as an energy source. Beloranib is the first new anti-obesity agent with the potential to address two important abnormalities that are present in the obese patient—hunger that is inappropriate relative to the amount of energy stored as fat and dysregulation of fat metabolism, which causes more fat to be made and stored in an obese patient than in a lean person.

Beloranib is a potent inhibitor of MetAP2, an enzyme that modulates the activity of key cellular processes that control metabolism. MetAP2 inhibitors work, at least in part, by directing MetAP2 binding to cellular stress mediators, and, thus, reducing fat synthesis by the liver and fat storage throughout the body. In this manner, MetAP2 inhibition increases metabolism of fats as an energy source. MetAP2 inhibitors also reduce hunger and food intake by novel mechanisms that require further study to be fully understood.

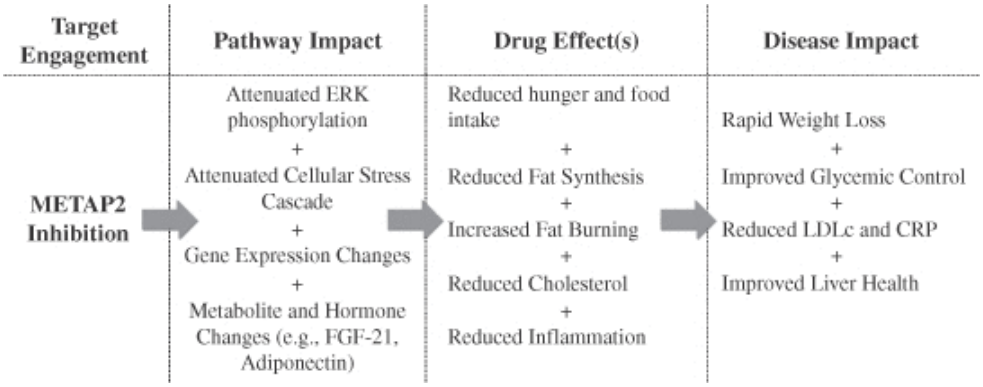
Beloranib was evaluated for its potential for treating obesity following publication of studies in the *Proceedings of the National Academy of Sciences* in 2002 showing anti-obesity efficacy in animals treated with a prototype MetAP2 inhibitor. These studies showed that MetAP2 inhibitor treatment was associated with loss of fat tissue accompanied by an increase in fat oxidation, indicating a redirection of fuel usage toward utilization of stored fats as a source of energy. Reduced food intake also was observed in treated animals, suggesting either direct effects of the agent on central feeding regulation or activation of a feedback loop linking the release and oxidation of stored fat to appetite.

The MetAP2 inhibitor fumagillin, a structural analog of beloranib, was shown in 2004 to induce a novel protein-protein interaction involving MetAP2 and extracellular-signal-regulated kinase 1, or ERK1, a cell stress- and growth factor-stimulated kinase. This complex reduces the activation state of ERK1. A 2005 publication in *Diabetes* showed that animals lacking ERK1 resist both high fat diet-induced obesity and insulin resistance, supporting the hypothesis that attenuation of ERK activity could be an important component of the beneficial metabolic effects of MetAP2 inhibitor treatment. Several hormones well-documented to be involved in energy metabolism are affected by beloranib, including leptin, adiponectin and fibroblast growth factor-21. These hormones are thought to contribute to the weight-reducing effects of beloranib and also are known to be involved

in control of body weight, fat metabolism and glucose metabolism. This series of mechanistic effects leads to rapid and sustained reduction of excess body weight with beloranib treatment, such as has been observed in animal studies and our clinical trial experience to date.

Our clinical experience to date shows that beloranib treatment is also associated with improvements in cardiovascular disease risk factors such as plasma total cholesterol, high density lipoprotein cholesterol, or HDL, and C-reactive protein, or CRP. Plasma total cholesterol, HDL, CRP, and systolic blood pressure are considered to be the most rigorous systemic biomarkers of cardiovascular disease risk. Our clinical experience to date with beloranib suggests that its use is not associated with an increase in blood pressure or heart rate, which makes it particularly relevant to severely obese patients, in whom a broad spectrum of elevated cardiovascular risk factors often is seen.

An illustration of the MetAP2 inhibitor mechanism of action and therapeutic effects follows:



Clinical Trials

Beloranib was initially formulated for intravenous administration to facilitate early clinical efforts. Our clinical program has been oriented to first establish whether beloranib would lead to weight loss at tolerated and safe doses, and then to transition to the more convenient subcutaneous injection method of administration for development in our indications of interest, including PWS, craniopharyngioma and severe obesity.

We have completed five clinical trials evaluating beloranib in over 200 patients. Our first three clinical trials, ZAF-001, ZAF-003 and ZAF-101, established a working dose range for beloranib above 0.65 mg and below 3 mg. To further explore the efficacy, safety, tolerability and impact of beloranib on severe obesity, we conducted ZAF-201, a 12-week clinical trial of beloranib administered twice weekly to 124 obese patients at doses of 0.6 mg, 1.2 mg, and 2.4 mg. This placebo-controlled, double-blinded trial, established that the efficacy of beloranib continued beyond four weeks and was associated with sustained impact on key biomarkers of effect.

These clinical trials set the stage for continued evaluation of beloranib, by subcutaneous administration, in PWS patients. ZAF-211 was a placebo-controlled, double-blinded trial evaluating safety and tolerability as well as the effects of 1.2 mg or 1.8 mg doses of beloranib in patients with PWS on body weight, body composition and hyperphagia-related behaviors.

The table below summarizes the structure of and key findings from these five clinical trials of beloranib.

Trial Number	Brief Description	Treatment Duration	BMI Range of Patients (kg/m^2)	Observations
ZAF-001 *Phase 1b*	• Randomized, double-blind, placebo-controlled trial • Escalating doses of 0.1 mg/m^2, 0.3 mg/m^2, and 0.9 mg/m^2, or approx. 0.2 mg, 0.6 mg, and 2 mg • 1-hour intravenous infusion twice weekly	4 weeks	32-45	• Dose dependent weight reductions with 0.9 mg/m^2 twice weekly resulting in -3.6 kg weight loss versus -1.2 kg change with placebo over 4 weeks • Metabolic benefits (C-reactive protein and metabolic hormones) observed in dose dependent fashion • Safe and well tolerated at all dose levels

ZAF-003 *Phase 1b*	• Randomized, double-blind, placebo-controlled trial
	• Static dosing scheme of 3.0 mg, 6.0 mg, and 2.5 mg
	• 1-hour intravenous infusion
	  • 3.0 mg and 6.0 mg doses given twice weekly for 4 weeks
	  • 2.5 mg dose given twice weekly for the first week and once weekly for the subsequent 6 weeks.
		4 weeks or 7 weeks	30-50	• Dose dependent weight reductions with 6.0 mg dose resulting in -6.7 kg weight loss, 3.0 mg in -4.7 kg, and placebo in -0.3 kg over 4 weeks
				• Once weekly 2.5 mg dose resulted in weight loss of -3.1 kg over 7 weeks and with greater variability
				• 6.0 mg not very well tolerated with gastrointestinal side effects and sleep disturbance emerging as dose limiting adverse effects; Doses of 3.0 mg or lower were well tolerated and effective
				• Once-weekly regimen was less effective than bi-weekly administration

ZAF-101 *Phase 1b*	• Randomized, double-blind, placebo-controlled trial • 1.0 mg, 2.0 mg, and 4.0 mg were evaluated • Subcutaneous injection twice weekly	4 weeks	30-45	• Significant weight reduction with all doses; 4.0 mg dose resulting in -6.1 kg, 2.0 mg in -4.2 kg, 1.0 mg in -4.3 kg, and placebo in -1.2 kg • Comparable metabolic benefits observed as in prior trials, including body composition improvements; sense of hunger reduced with all doses • 4.0 mg not as well tolerated with similar adverse event profiles as with 6.0 mg intravenous dose in ZAF-003 – mainly gastrointestinal side effects and sleep disturbances; injection site adverse events unremarkable
ZAF-201 *Phase 2a*	• Randomized, placebo controlled, double-blinded, parallel design trial • Fixed beloranib doses including 0.3 mg, 0.6 mg, 1.2 mg, 2.4 mg, and 3.2 mg or placebo • Subcutaneous injections twice weekly	12 weeks	30-50	• 0.3 mg not effective, 3.2 mg not well tolerated; both doses eliminated after first 2-4 weeks of dosing (pre-defined) • Progressive and dose dependent weight reduction; -10.9 kg in the 2.4 mg group, -6.9 kg in the 1.2 mg group, -5.5 kg in the 0.6 mg group, versus -0.4 kg in placebo • Comparable metabolic and body composition benefits observed as with prior studies • Most adverse events, including sleep disturbances, mild-moderate and transient

ZAF-211 *Phase 2a*	• Randomized, double-blind, parallel design trial • 1.2 mg and 1.8 mg doses of beloranib or placebo in patients with Prader-Willi Syndrome • Subcutaneous injections twice weekly	4 weeks	26-44	• Trend toward reduction in body weight measured by scale weight; -1.27% in beloranib-treated patients (pooled analysis of 1.2 and 1.8 mg treatment groups) versus +0.34% change in placebo-treated patients • Reduction in body mass assessed by dual-energy x-ray absorptiometry (DEXA); -2.1% in beloranib-treated patients versus +2.0% change in placebo-treated patients • Reduction in total fat mass assessed by DEXA; -2.9% in beloranib-treated patients versus +3.6% change in placebo-treated patients • Reduction in hyperphagia related behaviors (at 1.8 mg dose level only).

Across all our clinical trials, beloranib has been well-tolerated at doses we would expect to explore in the future. There have been no serious adverse events, or SAEs, attributed to beloranib in our clinical trials. The main adverse events, or AEs, including those leading to drop-outs, in patients dosed with beloranib have been sleep disturbances, principally manifested as delayed onset of sleep, nausea and vomiting. For certain of our clinical trials, we performed statistical analysis of our results and report the p-value, which is a statistical calculation that relates to the probability that a difference between groups happened by chance, with a p-value of less than 0.05 (i.e., less than 5% probability that the difference happened by chance) generally being used as the threshold to indicate statistical significance. We expect that the FDA will perform its own independent statistical analyses to determine if our data support regulatory approval. Each of our clinical trials is discussed in more detail below.

Phase 1b Clinical Trials

ZAF-001—A Randomized, Double-Blind, Placebo-Controlled Multiple Dose Study, to Assess Safety, Tolerability, Pharmacokinetics and Pharmacodynamics of ZGN-433 (Beloranib for Intravenous Infusion) in Obese Volunteers

ZAF-001 was a four-week double-blind, placebo controlled, dose escalation and multiple dose trial conducted in Australia. The primary clinical endpoints of this clinical trial were safety, tolerability, pharmacokinetics and pharmacodynamics of beloranib administered by intravenous administration. 31 Caucasian female patients, with an average age of 52.2 years and BMI range of 32-45 kg/m^2, were enrolled in this clinical trial. 22 patients received beloranib and nine patients received placebo. The patients were divided into three different cohorts, with each cohort receiving 0.10 mg/m^2, 0.30 mg/m^2, or 0.90 mg/m^2 of beloranib or placebo via intravenous infusion twice weekly for four weeks. The primary objectives of this clinical trial were to (i) evaluate the safety and tolerability of beloranib in obese patients and (ii) determine the plasma pharmacokinetics and pharmacodynamics of beloranib in obese patients. A secondary objective was to obtain information on weight loss in obese patients exposed to beloranib for eight intravenous doses over a one-month period. A total of 26 of the 31 enrolled patients completed this clinical trial as planned, receiving all 8 infusions of study drug. Three placebo patients and two beloranib-treated patients withdrew from this clinical trial because of loss of venous access and other reasons unrelated to drug treatment.

The key results of this clinical trial are summarized for the Per Protocol population, patients completing the full dosing period and receiving a minimum of six doses, as follows:

4-week Phase 1b Proof of Concept Clinical Trial in Obese Patients (ZAF-001)

Trial Arm	Number of Patients Per Protocol	Baseline Body Weight (kg)	Average Weight Change (kg)	p-value*
Placebo	6	96.0	-1.2	—
Beloranib 0.1 mg/m^2	6	105.3	-0.9	—
Beloranib 0.3 mg/m^2	6	100.3	-1.3	—
Beloranib 0.9 mg/m^2	8	104.2	-3.6	—

* statistical analysis was not performed in this proof of concept trial

- Post hoc analyses suggested that beloranib had favorable effects on other parameters, including body fat content, C-reactive protein, low density lipoprotein cholesterol and hunger.

There were no drug-related SAEs or treatment emergent adverse events, or TEAEs. Headaches and gastrointestinal symptoms were the most common TEAEs in all groups including placebo and tended to be mild in intensity and transient. Contusions or bruising which occurred at infusion sites, often due to difficulty in IV access, were reported. There were no clinically significant changes reported as TEAEs in hematology, serum chemistry or urinalysis values for any of the patients in any of the dose groups. The objectives of this clinical trial were met. Weight loss was a secondary clinical endpoint and was not subjected to statistical analysis.

ZAF-003—Phase 1b Trial of Beloranib, a Novel Methionine Aminopeptidase 2 (MetAP-2) Inhibitor for Treatment of Extreme Obesity: Randomized, Double-Blind, Placebo-Controlled, Escalating Doses in Female Volunteers

ZAF-003 was a double-blind, placebo controlled, dose escalation and multiple dose trial conducted in Australia. A static dosing scheme of 3.0 mg, 6.0 mg, and 2.5 mg was evaluated and all doses were administered via 1-hour intravenous infusion, with 3.0 mg and 6.0 mg doses given twice weekly for four weeks, and the 2.5 mg dose given twice weekly for the first week and once weekly for the subsequent six weeks for total of seven weeks of treatment. Patients who qualified after the screening round were randomized 2:1 to treatment with beloranib or placebo. 25 obese female patients were enrolled, and 22 patients completed this clinical trial. Three patients withdrew from this clinical trial, two from the 6.0 mg treatment group, due to tolerability limitations and one from the 2.5 mg treatment group due to an adverse event deemed not to be related to study drug. 92% of the patients were Caucasian, 4% of the patients were Asian and 4% of the patients were Pacific Islanders. The average ages were between 44.0 and 51.3 years for the various treatment groups. The primary objective of this clinical trial was to demonstrate safe doses of intravenous infusion of beloranib for reduction of body weight in female obese patients with baseline BMIs ranging from 30 to 50 kg/m^2. The secondary objectives of this clinical trial were to (i) confirm the safety profile of beloranib in obese female patients receiving incrementally larger fixed doses than the dose regimen previously tested in ZAF-001, (ii) evaluate the tolerance, weight loss and ease of administration for continuing a safe dose of beloranib on a weekly schedule, (ii) correlate higher dose levels of beloranib with measures of reduction in body weight and hunger, (iii) confirm the pharmacokinetic profile of beloranib, and (iv) correlate exposure of beloranib with changes in biomarkers for fasting plasma lipids, lipid metabolism, fasting insulin and thyroid function.

The key results of this clinical trial are summarized for the Per Protocol population, patients completing the full dosing period and receiving a minimum of six doses, as follows:

4-week Phase 1b Proof of Concept Clinical Trial in Obese Patients (ZAF-003)

Trial Arm	Number of Patients Per Protocol	Baseline Body Weight (kg)	Average Weight Change (kg)	p-value*
Placebo	8	104.6	-0.1	—
Beloranib 3.0 mg twice weekly	6	102.3	-4.7	—
Beloranib 6.0 mg twice weekly	3	105.5	-6.7	—
Beloranib 2.5 mg once weekly	5	94.0	-2.7	—

* statistical analysis was not performed in this proof of concept trial

- Post hoc analyses suggested that beloranib had favorable effects on other parameters, including body fat content, C-reactive protein, low density lipoprotein cholesterol and hunger.

The primary and secondary objectives of this clinical trial were met, showing the maximally tolerated dose of 3.0 mg of beloranib administered by intravenous infusion was identified, weight loss was uniformly observed at both 3.0 mg and 6.0 mg dose levels of beloranib, and a visual analog scale of hunger revealed reduction in hunger at both doses. Further, a once-weekly regimen was evaluated with 2.5 mg of beloranib, which was well-tolerated and showed limited evidence of weight loss efficacy or reduction in hunger despite being well-tolerated.

ZAF-101- ZGN-440 (Beloranib for Subcutaneous Injection), A Novel Methionine Aminopeptidase 2 Inhibitor for Treatment of Obesity: A Randomized Double-Blind Placebo Controlled Dose Escalation Phase 1b Trial to Evaluate Safety, Pharmacokinetics, Pharmacodynamics and Initial Weight Loss

ZAF-101 was a four-week, multi-dose trial using beloranib formulated for subcutaneous, or SC, injection in obese, otherwise healthy females, conducted in Australia. This clinical trial was a double-blind, placebo controlled, dose escalation and multiple dose study. Doses of 1.0 mg, 2.0 mg, and 4.0 mg of beloranib were evaluated and all doses were administered by SC injection twice weekly for four weeks. Patients who qualified after the screening were randomized 1:1:1:1 to treatment with the three dose levels of beloranib or placebo. 25 female Caucasian patients were enrolled. Four patients withdrew from this clinical trial, three from the 4.0 mg treatment group and one from the 2.0 mg treatment group due to sleep disturbance. The average ages were 46.0 to 49.9 years for the various treatment groups and the BMI range of the patients was 30-45 kg/m ^{2}. This clinical trial was designed to evaluate the safety and tolerability of beloranib administered SC in obese female patients. Secondary objectives of this clinical trial were to assess weight loss and responses in metabolic biomarkers over a dose range of beloranib in obese female patients and to compare weight loss due to beloranib administered SC to that previously observed by beloranib administered intravenously.

The key results of this clinical trial are summarized for the Per Protocol population, patients completing the four-week dosing period and receiving a minimum of six doses, as follows:

4-week Phase 1b Proof of Concept Clinical Trial in Obese Patients (ZAF-101)

Trial Arm	Number of Patients Per Protocol	Baseline Body Weight (kg)	Average Weight Change (kg)	p-value
Placebo	6	97.3	-1.2	—
Beloranib 1.0 mg	6	99.1	-4.3	<0.001
Beloranib 2.0 mg	5	92.7	-4.2	<0.001
Beloranib 4.0 mg	4	93.9	-6.1	<0.001

There were no clinically significant changes in laboratory parameters, electrocardiograms, or vital signs with any of the doses. There were no deaths or severe AEs reported in this clinical trial. Aside from mild and transient injection site reactions, which were observed across all treatment groups, including placebo, SC administration of the drug appeared to be locally well-tolerated. However, the highest dose, or 4.0 mg of beloranib, appeared to be less well-tolerated systemically and led to more frequent moderate intensity TEAEs and premature trial withdrawals, mainly due to gastrointestinal events and sleep disturbance. Sleep disturbance AEs were reported by 100% of subjects in the 2.0 mg group (6 events), 85.7% of subjects in the 4.0 mg group (6 events), 83.3% of subjects in the 1.0 mg treatment group (5 events) and 16.7% of subjects in the placebo treatment group (1 event). All events of sleep disturbance were deemed to be probably related to study drug. Abnormal dreams, mostly vivid dreams, were the other frequently reported sleep abnormalities reported as TEAEs reported by 83.3% of subjects in the 2.0 mg dose group, 85.7% in the 4.0 mg dose group and 66.7% in the 1.0 mg dose group. No subjects reported abnormal dreams in the placebo group. The majority of sleep disorders were of mild severity—83.3% in the 2.0 mg dose group, 33.3% in the 4.0 mg dose group, 100% in the 1.0 mg dose group; as were the majority of abnormal dreams—83.3% in the 2.0 mg dose group, 85.7% in the 4.0 mg dose group, and 66.7% in the 1.0 mg dose group. All remaining events were moderate in severity. A total of four subjects including one subject in the 2.0 mg dose group and three subjects from the 4.0 mg dose group withdrew from the trial due to sleep disturbance. The increased incidence of early trial withdrawal due to sleep disturbance in the 4.0 mg treatment group suggested that this dose was less well tolerated. Gastrointestinal disorders were frequently reported across all dose groups. The greatest percentage of subjects to report gastrointestinal adverse events, such as diarrhea and nausea, were in the placebo group, 50.0% (3 events in 3 subjects) and 33.3% (2 events in 2 subjects), respectively. Occurrence of diarrhea in beloranib-treated subjects ranged between 16.7% (1 event in 1 subject) for the 2.0 mg dose group, and 42.9% (3 events in 3 subjects) in the 4.0 mg dose group. Occurrence of nausea in beloranib-treated subjects ranged from 14.3% (1 event in 1 subject) for the 4.0 mg dose group, and 16.7% (1 event in 1 subject) in both the 1.0 and 2.0 mg dose groups.

Phase 2a Clinical Trials

ZAF-201—Randomized, Double-Blind, Placebo-Controlled, Dose Ranging Phase 2 Trial of Beloranib (ZGN-440 for Subcutaneous Injection), A Novel Methionine Aminopeptidase 2 Inhibitor, in Obese Subjects to Evaluate Weight Reduction, Safety, and Pharmacokinetics Over 12 Weeks

ZAF-201 was a 12-week Phase 2a proof-of-concept clinical trial in 160 obese patients, of whom 122 were dosed with beloranib, across eight participating trial sites in Australia. 93.8% of patients were female, 97.5% were Caucasian, the average age was 48.4 years and patients had a BMI range of 30-54 kg/m^2. Patients were excluded from this clinical trial if they had been involved recently in another weight loss trial, or if they had clinically significant liver, renal, pulmonary, cardiovascular, oncologic, gastrointestinal disease, or severe mental illness. This clinical trial was designed to evaluate weight loss and responses in metabolic biomarkers over a dose range of beloranib and to assess safety and tolerability of beloranib over 12 weeks in obese patients. This was a randomized, placebo controlled, double-blinded, parallel design trial to evaluate a range of fixed beloranib doses, including 0.3 mg, 0.6 mg, 1.2 mg, 2.4 mg and 3.2 mg, in comparison to placebo. All doses were administered as SC injections twice weekly for 12 weeks.

Trial endpoints included safety and tolerability, weight loss, body composition by bio-impedence, pharmacokinetic, or PK, and pharmacodynamic assessment. As stipulated in the protocol, our Safety Review Committee for this clinical trial, or SRC, reviewed interim safety and PK results after 36 patients from the initial part of this clinical trial completed at least 2 weeks of treatment. Laboratory, electrocardiogram, and vital sign reviews were deemed to be unremarkable and lacking any significant safety concerns. The SRC recommended to eliminate the lowest and highest active dose groups, 0.3 mg and 3.2 mg, thus leaving the doses of 0.6 mg, 1.2 mg, 2.4 mg or placebo to be studied in the remainder of this clinical trial. This was based on the conclusion that the weight loss for the 0.3 mg dose was not clinically meaningful and the 3.2 mg dose was not well-tolerated. The most common AE leading to early termination at the 2.4 mg and 3.2 mg dose levels was sleep disturbance.

As severely obese patients are at an increased risk for cardiovascular disease, we measured systemic biomarkers of cardiovascular disease risk, including low density lipoprotein cholesterol, HDL, CRP, trigylcerides and blood pressure in trial participants, to determine beloranib's impact on such biomarkers. The results of these biomarker measurements in this trial, as summarized below, suggest that beloranib treatment does not increase the risk of cardiovascular disease and may be associated with reduced cardiovascular disease risk. While we plan to include biomarkers of cardiovascular disease risk as an endpoint for our planned Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population, this trial will not be designed to establish the impact of beloranib treatment on cardiovascular disease risks.

The key results of this trial are summarized for the Per Protocol population, patients completing the 12-week dosing period and receiving a minimum of 16 of 24 doses, as follows:

12-week Phase 2a Proof of Concept Clinical Trial in Obese Patients (ZAF-201)

Trial Arm	Number of Patients Per Protocol	Baseline Body Weight (kg)	Mean Weight Change (kg)	Percent Placebo-Adjusted Weight Change	p-value
Placebo	36	102.3	-0.4	—	—
Beloranib 0.6 mg	34	102.6	-5.5	-5.0	<0.0001
Beloranib 1.2 mg	31	102.6	-6.9	-6.4	<0.0001
Beloranib 2.4 mg	15	102.2	-10.9	-10.3	<0.0001

- Levels of the cardiovascular disease risk marker C-reactive protein were reduced by an average of 2.5, 2.3 and 1.9 µg/ml, or 23%, 22% and 37%, respectively, for patients treated with beloranib at 0.6 mg, 1.2 mg and 2.4 mg, respectively, compared to an average increase of 1.0 µg/ml for patients dosed with placebo ($p<0.0001$).
- Levels of low density lipoprotein cholesterol, or LDL-c, were reduced by an average of 0.3, 0.5 and 1.0 mmol/l, or 9.4%, 14.5% and 29.7%, respectively, for patients treated with beloranib at 0.6 mg, 1.2 mg and 2.4 mg, respectively, compared to an average reduction of 0.3 mmol/l for patients dosed with placebo ($p<0.001$ for patients treated with 2.4 mg beloranib).
- Levels of high density lipoprotein cholesterol, or HDL-c, were increased by an average of 0.1, 0.1 and 0.2 mmol/l, or 7.6%, 11.6% and 14.6%, respectively, for patients treated with beloranib at 0.6 mg, 1.2 mg and 2.4 mg, respectively, compared to no change for patients dosed with placebo ($p<0.05$ for patients treated with 1.2 mg and 2.4 mg beloranib).
- Levels of triglycerides were reduced by an average of 0.2, 0.3 and 0.4 mmol/l, or 8.8%, 9.0% and 20.3%, respectively, for patients treated with beloranib at 0.6 mg, 1.2 mg and 2.4 mg, respectively, compared to a reduction of 0.3 mmol/l for patients dosed with placebo ($p<0.05$ for patients treated with 1.2 mg and 2.4 mg beloranib).
- Systolic blood pressure was reduced by an average of 6.3 mmHg, 6.3 mmHg and 13.6 mmHg for patients treated with beloranib at 0.6 mg, 1.2 mg and 2.4 mg, respectively, compared to an average of 1.4 mmHg reduction for patients dosed with placebo ($p<0.05$ for 1.2 mg and 2.4 mg doses). Trends toward reduction in diastolic blood pressure also were observed, although these changes did not reach statistical significance.
- Sense of hunger was reduced by an average of 1.5 cm, 2.2 cm and 3.3 cm (out of a maximum number of 10 cm using a standardized visual analog scale asking how hungry the participant had been over the prior trial days) and compared to an average reduction of 0.1 cm in placebo, respectively ($p<0.05$ for all doses). Baseline values were, on average, 5.0 cm, 5.3 cm, 5.8 cm and 6.4 cm for placebo, for doses of 0.6 mg, 1.2 mg and 2.4 mg of beloranib, respectively.
- Post hoc analyses suggest that beloranib also may have favorable effects on body fat content.

While results from this clinical trial showed that beloranib doses ranging from 0.6 mg to 2.4 mg administered by SC injection resulted in dose-related weight loss, the highest dose, 2.4 mg, was associated with the most significant and rapid onset of weight loss whereas the lower doses, 0.6 mg and 1.2 mg, tended to result

in slower initiation of weight reduction. However, the highest dose, 2.4 mg, of beloranib appeared to be less well-tolerated systemically and led to more frequent severe intensity TEAEs. 21 patients treated with 2.4 mg beloranib prematurely withdrew from the trial, mainly due to sleep disturbance reflective of increased sleep latency, the time patients reported taking to fall asleep at night. There were no deaths or any SAEs deemed to be possibly, probably, or definitely related to beloranib, although there were two serious thrombotic adverse events which, while not attributed to beloranib treatment, may point to the utility of assessment of prior history of thrombotic events in patients enrolled in subsequent trials and added vigilance for AEs related to blood clotting during future clinical trials. The most commonly reported TEAEs were gastrointestinal disorders, mainly nausea, diarrhea, or vomiting, nervous system disorders, mainly dizziness, and psychiatric disorders, mainly insomnia, sleep disorder, or abnormal dreams. TEAEs were generally mild in severity and transient. Other frequently reported TEAEs were headaches and injection site bruising/itching, although the incidences were comparable to placebo and not observed to be dose-related. Laboratory assessments, vital signs and electrocardiograms revealed no unexplained abnormalities or clinically significant trends. The primary objectives of this clinical trial were met, including demonstration of continued weight loss beyond the four-week trial duration evaluated in prior trials, demonstration of the tolerability profile at effective doses, and demonstration of reductions in key cardiometabolic risk parameters and hunger as well as improved body composition (reduced waist circumference and fat mass) as assessed by bioelectrical impedance.

ZAF-211—Randomized, Double-Blind, Placebo Controlled, Parallel Dose Ranging Phase 2a Trial of ZGN-440 (for Subcutaneous Injection), A Novel Methionine Aminopeptidase 2 Inhibitor, in Over-weight and Obese Subjects with Prader-Willi Syndrome to Evaluate Weight Reduction, Food-related Behavior, Safety, and Pharmacokinetics Over 4 Weeks Followed by Optional 4-Week Open-Label Extension

Our Phase 2a clinical trial of beloranib as a potential treatment of PWS was designed as a randomized, double-blind, and parallel comparison of each of 1.2 mg and 1.8 mg dose levels of beloranib, and placebo. 17 adult PWS patients living in closely-controlled PWS-specific group homes were randomized to one of the three dosing arms, with 6, 5, and 6 patients being randomized to placebo, 1.2 mg beloranib and 1.8 mg beloranib treatment. During the course of the trial, including a two week placebo run-in phase, daily calorie allowances were increased in all patients by 50 percent to drive modest weight gain and simulate the greater access to food experienced in the general PWS population living in family home situations. All patients completed randomized treatment. The primary objectives of this clinical trial were to (i) assess the safety and tolerability of beloranib administered twice weekly SC in PWS patients, (ii) assess body weight change, changes in body mass and fat content by DEXA, scan analysis, and responses in metabolic biomarkers over a dose range of beloranib, and (iii) evaluate changes in quality of life, PWS- specific hyperphagia-related behaviors and/or psychiatric status. The secondary objective of this clinical trial is to evaluate pharmacodynamics and apparent bioavailability over a dose range of beloranib. The randomized treatment period was followed by an optional open-label extension offering patients the opportunity to continue for an additional four weeks of treatment with 1.8 mg beloranib. The results of the open-label extension, which includes all 17 patients initially included in the randomized treatment phase, are expected to be available in early 2014.

The key results of this clinical trial are summarized as follows. Both doses of beloranib have been combined as shown below, as a component of the pre-specified statistical analysis:

Four-Week Phase 2a Proof of Concept Clinical Trial in Patients with Prader-Willi Syndrome (ZAF-211)

Endpoint	Placebo Baseline (N=6)	Placebo Change (%)	Beloranib Baseline (N=11)	Beloranib Change (%)	p value (Beloranib vs. Placebo)
Body weight (kg) (Scale weight)	70.1	0.34	72.0	-1.3	0.17*
Body mass (kg) (DEXA)	69.7	2.0	72.1	-2.1	0.002
Fat mass (kg) (DEXA)	31.1	3.6	34.6	-2.9	0.013

* not statistically significant by ANCOVA, or analysis of covariance, a pre-specified statistical analysis, used to assess changes in all key endpoints. ANCOVA is a standard statistical test that takes into account the baseline measurements for each subject.

- Levels of high density lipoprotein cholesterol were increased by an average of 26% in beloranib-treated patients, compared to an average increase of 1% in patients dosed with placebo (p=0.005).
- Levels of low density lipoprotein cholesterol were reduced by an average of 27% in beloranib-treated patients, compared to an average increase of 3% in patients dosed with placebo (p=0.005).
- Hyperphagia related behaviors typical of PWS patients were reduced by an average of 52.4% by treatment with 1.8 mg beloranib, compared to an average increase of 40.5% in patients dosed with placebo and an average increase of 1.8% in patients treated with 1.2 mg beloranib. The change in behavior was statistically significant from baseline for the patients treated with 1.8 mg beloranib (not statistically significant by ANCOVA; p=0.025 by post hoc paired t-test).

There were no clinically significant changes in laboratory parameters, electrocardiograms and vital signs with any of the doses. There were no deaths, SAEs, or severe AEs reported in this clinical trial. Aside from mild and transient injection site reactions, which were observed across all treatment groups, including placebo, SC administration of the drug appeared to be locally well-tolerated.

Unlike patients with severe obesity in the general population, PWS patients are missing the function of multiple genes. In order to determine if the underlying mechanistic pathway of beloranib was engaged in PWS patients, we measured levels of low density lipoprotein cholesterol and fat mass. MetAP2 inhibitors, such as beloranib, work, at least in part, by directing MetAP2 binding to cellular stress mediators, and, thus, reducing fat synthesis by the liver and fat storage throughout the body, leading to a reduction in cholesterol, evidenced by reduced levels of low density lipoprotein cholesterol and reduced fat mass. In this clinical trial, PWS patients treated with beloranib had both reduced levels of low density lipoprotein cholesterol and fat mass, suggesting that PWS patients respond to beloranib treatment in a similar manner as severely obese patients that are not missing the function of multiple genes. Likewise, while exploratory, salutary effects on behaviors were observed, which reached clinical significance for the 1.8 mg beloranib treatment arm. These behavioral changes include a range of aspects of the PWS phenotype recorded by the caregiver-administered hyperphagia-related behavior questionnaire, an instrument that measures the frequency and severity of behavioral issues typical of PWS patients that we are currently validating with the FDA for support of our pivotal trials. Together these results, we believe, are strongly supportive of additional studies of beloranib in the PWS patient population.

Clinical Trial Summary and Next Steps

Our clinical trials suggest that administration of beloranib by intravenous infusion twice weekly for four weeks, or eight doses, at dose levels of up to 3.0 mg was safe and well-tolerated. The incidence and severity of AEs was similar across all dose groups in this range. While these clinical trials were of short duration and designed to demonstrate safety and tolerability, significant decreases in body weight and large decreases in sense of hunger were observed in beloranib-treated patients when compared to the placebo group. Additional clinical trials of longer-term treatment with beloranib designed to demonstrate efficacy are required before we can submit an NDA for beloranib as a treatment for any indication that we are pursuing. In our planned Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population and our planned Phase 3 clinical program of beloranib as a treatment for PWS patients, patients will be treated with beloranib for a substantially longer period of time than as treated in our earlier clinical trials. A SC formulation of beloranib for human use was developed and completed human testing in a Phase 1b clinical trial, which showed that doses ranging from 1.0 mg to 4.0 mg administered by SC injection resulted in statistically significant dose-related weight loss. While the highest dose of 4.0 mg was associated with the most significant weight loss, it appeared to be less well-tolerated systemically and led to more frequent moderate intensity TEAEs and premature trial withdrawals, mainly due to gastrointestinal events and sleep disturbance. There have been no deaths or drug-related SAEs. Laboratory safety measures, vital signs and electrocardiograms have been unremarkable in all completed clinical trials for all doses tested. A 12-week Phase 2a clinical trial, ZAF-201, using subcutaneously administered doses of 0.6 mg, 1.2 mg and 2.4 mg of beloranib has confirmed these earlier observations, and we have observed continued weight loss with maintenance of the key favorable drug effects on body composition, hunger and C-reactive protein levels. A further salutary effect on blood pressure has been identified, strengthening our view that beloranib will have a favorable impact on cardiovascular disease risk.

ZAF-211 was our first clinical trial in PWS patients using doses of 1.2 mg and 1.8 mg beloranib administered by subcutaneous injection twice weekly for four weeks. This initial clinical trial has generated promising results, with beloranib-treated patients showing reductions in body mass and body fat content, along with improvements in hyperphagia-related behavior. Taken together with the results of our previous clinical trials, we believe there is a very compelling basis for continued development of beloranib for the treatment for rare conditions such as PWS and craniopharyngioma, where obesity is a co-morbidity of an underlying condition, and severe obesity in the general population.

We plan to continue to develop beloranib, with an initial focus on treatment of PWS patients. We currently are designing a Phase 3 clinical program to support registration and commercialization of beloranib in PWS patients. We are currently engaged in discussions with the FDA and certain other foreign regulatory authorities with the intention of initiating a Phase 3 clinical trial in the United States in 2014. As the number of patients with PWS is small, we intend to utilize physicians with expertise in the treatment of PWS patients to assist us in enrolling patients in our Phase 3 clinical program of beloranib as a treatment for PWS patients. We also plan to assess the utility of beloranib in the treatment of patients with craniopharyngioma-associated obesity through a Phase 2a clinical trial, beginning in the first half of 2014. This clinical trial, a four-week, multicenter, clinical trial to be conducted in Australia and the United States, is planned to assess the impact of 1.8 mg beloranib or placebo on body weight, body composition and hunger. We intend to initiate a Phase 2b clinical trial of beloranib as a treatment for severe obesity in the general population. Through these efforts, combined with advances in non-clinical development of beloranib, we aspire to establish a regulatory strategy that will allow commercialization of beloranib.

Pre-clinical

We conducted toxicology studies of beloranib in support of clinical development. Dose selection and precautions for ongoing clinical trials have been informed by toxicology studies in beagle dogs, rats and rabbits. In our dog studies we observed hypospermatogenesis, or low sperm counts, lowering of platelets, decreased white blood cell counts, gastrointestinal bleeding and seizures, all of which were reversible and occurred at doses and exposures above the human dose. The most sensitive changes were mild and reversible effects on spermatogenesis occurring at systemic drug exposures two-to-three fold above the human male exposure in the ZAF-201 trial. In our rat studies, we observed a sporadic, minimal and reversible reduction of sperm counts and cellular changes in the testes at exposure levels ten- to 15-fold above the male human exposure in the ZAF-201 trial. During these studies, the margins to the no adverse effect levels in females were 50- to 100-fold for rats and 40- to 60-fold for dogs. In addition, embryofetal studies have been conducted in rats that show a one- to two-fold exposure margins to female doses in the ZAF-201 trial. However, no safety margin in our rabbit studies were demonstrated due to minor and variant head and eye malformations.

Given the safety findings in animals, clinical trials of beloranib have included monitoring for blood cell changes, sperm counts, sperm morphology and hormones in men, as well as frequent pregnancy testing and requirement for redundant, implanted or surgical methods of birth control in women. To date, the clinical findings have shown no evidence of the hematological or male reproductive findings in humans, thus verifying the margins indicated in the animal species and no pregnancies have occurred. We believe that, as with other anti-obesity drugs, if approved, beloranib will carry a Category X label and be contraindicated in pregnant women or women looking to become pregnant.

We are currently completing long-term toxicology studies of six-month duration in the rat and nine-month duration in the dog that will support clinical trial durations of a year or more. We will also be testing beloranib for potential immunotoxicology and phototoxicity. We plan to complete these studies prior to the initiation of our planned Phase 3 clinical program in PWS patients, our Phase 2a clinical trial in patients with craniopharyngioma-associated obesity, and our Phase 2b clinical trial in severe obesity. We have initiated dose-ranging studies in preparation for two-year carcinogenicity studies in the mouse and rat, which will begin in 2014. Given that PWS manifests during childhood, we plan to conduct juvenile safety studies starting in 2014 that will allow for testing and eventual marketing in the juvenile population.

Future Product Candidates

We have been working since our inception in 2005 to explore and pursue new molecules leveraging the therapeutic effects of MetAP2 inhibitors in metabolic diseases including severe obesity, type 2 diabetes and NASH. As a direct result of medicinal chemistry efforts oriented to the identification of best in class MetAP2 inhibitors, we have identified compounds of use as potential back-up or follow-on compounds supporting beloranib, as well as novel inhibitors with improved pharmacological and physicochemical features. We continue to explore the utility of these molecules as a component of our program, and have identified a range of candidate molecules being prepared for advancement into early development.

As a part of this effort, we conducted a medicinal chemistry discovery program to find reversible inhibitors of MetAP2 that could be delivered orally and applied broadly across multiple areas of unmet medical need. The program delivered over 250 molecules in seven molecular families, and ZGN-839 was selected from this collection as a potent inhibitor with drug-like properties. In pre-clinical studies, ZGN-839 lowered body weight by approximately 9% after 16 days of treatment versus control animals and reduced plasma cholesterol and glucose, along with improvements in liver fat and the weight of abdominal adipose tissue in mice that were otherwise obese and insulin resistant due to long-term exposure to a high fat, obesogenic, diet. Further, in a mouse model of diabetes and NASH, ZGN-839 treatment for four weeks reduced the severity of NASH and reduced plasma glucose. We believe that compounds like ZGN-839 will have utility in the treatment of type 2 diabetes in humans, and will further cause improvements in cardiovascular risk factors including low density lipoprotein cholesterol.

A synthetic process to produce ZGN-839 for safety testing and clinical trials is currently under development. We currently plan to conduct IND-enabling studies of ZGN-839 in 2014 and to file an IND in the United States to begin clinical development of ZGN-839 beginning in the first half of 2015.

Manufacturing and Supply

Beloranib is a small molecule drug that is synthesized with readily available raw materials using conventional chemical processes. The current process to produce beloranib for clinical trials involves (i) synthesis of crystalline drug substance, (ii) production of sterile crystalline drug substance, (iii) particle size control, formulation and vialing of active drug product, (iv) production and vialing of a sterile diluent and (v) production and vialing of a sterile placebo. We are currently in the process of manufacturing finished drug product for use in our upcoming clinical trials. Sterile drug substance is currently in hand. Finished drug product, diluent and placebo are expected to be available in the third quarter of 2014. Aside from our planned Phase 2a clinical trial in patients with obesity caused by craniopharyngioma, we will not be able to commence any additional clinical trials without the production of additional finished drug product. The manufacturing process is under active development and these projections could change based on delays encountered with manufacturing activities, equipment scheduling and material lead times. Additionally, we will work to establish a convenient dosing form of beloranib to improve the utility, look, convenience and feel of beloranib for patients—for example a pen injector system with single-use disposable cartridges.

We currently have no manufacturing facilities and limited personnel with manufacturing experience. We rely on contract manufacturers to produce both drug substance and drug product required for our clinical trials. No long-term supply agreements are in place with our contractors, and each batch is individually contracted under a quality and supply agreement. If we engage new contractors, such contractors must be approved by the FDA and other comparable foreign regulatory agencies. We plan to continue to rely upon contract manufacturers and, potentially, collaboration partners to manufacture commercial quantities of beloranib, if approved. Our current scale of manufacturing is adequate to support all of our needs for clinical trial supplies and launch for orphan markets. For peak usage in orphan markets and for indications with larger populations, we will need to identify contract manufacturers or partners to produce beloranib on a larger scale.

Sales and Marketing

We recently hired a Chief Commercial Officer, however, given our stage of development, we have not yet established a commercial organization or distribution capabilities, nor have we entered into any partnership or

co-promotion arrangements with an established pharmaceutical company. To develop the appropriate commercial infrastructure to launch beloranib, we may either do so on our own or by establishing alliances with one or more pharmaceutical company collaborators, depending on, among other things, the applicable indications, the related development costs and our available resources.

Licenses

CKD License

In July 2009, we entered into an Exclusive License Agreement with Chong Kun Dang Pharmaceutical Corp. of South Korea, or CKD, pursuant to which we exclusively licensed beloranib from CKD on a worldwide basis, with the exception of South Korea. In consideration of such exclusive license, we paid an initial license fee to CKD, paid a one-time fee following initiation of a proof of concept trial, agreed to make milestone payments of up to $30.0 million (of which $1.0 million has been paid) to CKD upon the achievement of certain specified events, and agreed to pay a portion of sublicensing income to CKD. Furthermore, if we receive marketing approval for beloranib, we will pay single-digit royalties to CKD based on annual net sales of beloranib on a country-by-country and product-by-product basis until the later to occur of (i) the expiration of the last to expire patent in such country within the CKD patent rights containing a valid claim covering beloranib or its use for which regulatory approval has been obtained in such country, or (ii) ten years from the first commercial sale of beloranib in such country. Pursuant to this agreement, we committed to using commercially reasonable efforts to develop and commercialize beloranib. This agreement will remain in effect on a country-by-country and product-by-product basis until royalties are no longer due in such country, subject to earlier termination by either party upon mutual consent, or in the event of uncured breach or insolvency on the part of the other party, or by us for any reason up to 60 days' prior notice.

Children's License

In January 2007, we entered into an Exclusive License Agreement with Children's Medical Center Corporation, or Children's, pursuant to which we exclusively licensed certain patent rights from Children's on a worldwide basis. The licensed patent rights relate to decreasing the growth of fat tissue, and thereby cover the use of beloranib and related molecules as anti-obesity agents. In consideration of such exclusive license, we paid an initial license fee upon execution of the license to Children's and annual maintenance fees through the fifth anniversary of the date of the license. We also agreed to make milestone payments to Children's of up to $2.7 million (of which $0.2 million has been paid) with respect to the first licensed product and up to $1.3 million with respect to each subsequent licensed product, if any, that is a new chemical entity upon the achievement of certain specified events and to pay a portion of sublicensing income to Children's. If we receive marketing approval for beloranib, we will pay single-digit royalties to Children's based on net sales of beloranib until the later to occur of (i) the expiration of the last to expire patent in such country within the licensed patents containing a valid claim covering beloranib or (ii) 15 years from the date of the agreement. This agreement will remain in effect for the longer of (i) 15 years and (ii) the life of the last expiring licensed patent, subject to earlier termination (x) by Children's in the event of our insolvency or our failure to cure a breach within 60 days (30 days in the case of non-payment) of receiving written notice thereof, or (y) by us for any reason upon 120 days' prior written notice.

Intellectual Property

We strive to protect and enhance the proprietary technologies that we believe are important to our business, including seeking and maintaining patents intended to cover our products and compositions, their methods of use and any other inventions that are important to the development of our business. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will depend significantly on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business, defend and enforce our patents, preserve the confidentiality of our trade secrets and operate without infringing the valid and

enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain the proprietary position of beloranib and our other development programs.

Our owned and licensed patents and patent applications relate to beloranib compositions of matter, formulations, polymorphs, methods of treating obesity using dosing regimens of beloranib and methods of treating hypothalamic obesity. The issued U.S. and European patents generally directed to beloranib compositions of matter are exclusively licensed and will each expire in 2019. We own an issued U.S. patent relating to beloranib polymorph compositions of matter that will expire in 2031 and an issued U.S. patent to methods of treating obesity that will expire in 2029. We own pending patent applications in Europe to beloranib polymorph composition of matter and methods of treating obesity that we expect to expire, once issued, in 2031.

As of February 28, 2014, we own two issued U.S. patents, eight pending U.S. patent applications and foreign counterpart applications, and one Patent Cooperation Treaty, or PCT, application that will allow us to seek corresponding protection worldwide, all of which relate to beloranib. We have a license to two U.S. issued patents, one with corresponding issued foreign counterpart patents, that also relate to beloranib. We also co-own one patent application relating to methods of using beloranib with an option to exclusively license the co-owner rights.

As of February 28, 2014, we own seven pending U.S. patent applications with pending foreign counterpart applications and five PCT patent applications, all of which relate to our MetAP2 inhibitor program. Of these, one pending U.S. patent application with pending foreign counterpart patent applications and one PCT patent application relate to our early-stage product candidate ZGN-839.

As of February 28, 2014, we own two pending U.S patent applications with pending foreign counterpart patent applications, one pending PCT patent application and two U.S. provisional patent applications that relate to our second-generation MetAP2 inhibitor program.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the date of filing the non-provisional application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office, or U.S. PTO, in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. In addition, in certain instances, a patent term can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period. However, the restoration period cannot be longer than five years and the total patent term including the restoration period must not exceed 14 years following FDA approval. The duration of foreign patents varies in accordance with provisions of applicable local law, but typically is also twenty years from the earliest effective filing date. Our issued patents will expire on dates ranging from 2019 to 2031. However, the actual protection afforded by a patent varies on a claim by claim and country to country basis for each applicable product and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

Furthermore, the patent positions of biotechnology and pharmaceutical products and processes like those we intend to develop and commercialize are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the breadth of claims allowed in such patents has emerged to date in the United States. The patent situation outside the United States is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries can diminish our ability to protect our inventions, and enforce our intellectual property rights and more generally, could affect the value of intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents.

The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Our ability to maintain and solidify our proprietary position for our drugs

and technology will depend on our success in obtaining effective claims and enforcing those claims once granted. We do not know whether any of the patent applications that we may file or license from third parties will result in the issuance of any patents. The issued patents that we own or may receive in the future, may be challenged, invalidated or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may be able to independently develop and commercialize similar drugs or duplicate our technology, business model or strategy without infringing our patents. Because of the extensive time required for clinical development and regulatory review of a drug we may develop, it is possible that, before any of our drugs can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of any such patent.

As a result of the America Invents Act of 2011, the United States transitioned to a first-inventor-to-file system in March 2013, under which, assuming the other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent. This will require us to minimize the time from invention to the filing of a patent application.

We may rely, in some circumstances, on trade secrets and unpatented know-how to protect our technology. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our consultants, scientific advisors and contractors and invention assignment agreements with our employees. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions. For more information, See “Risk Factors—Risks Related to our Intellectual Property.”

Our commercial success will also depend in part on not infringing the proprietary rights of third parties. It is uncertain whether the issuance of any third-party patent would require us to alter our development or commercial strategies, or our drugs or processes, obtain licenses or cease certain activities. Our breach of any license agreements or failure to obtain a license to proprietary rights that we may require to develop or commercialize our future drugs may have a material adverse impact on us. If third parties prepare and file patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the U.S. PTO, to determine priority of invention.

In addition, substantial scientific and commercial research has been conducted for many years in the areas in which we have focused our development efforts, which has resulted in third parties having a number of issued patents and pending patent applications. Patent applications in the United States and elsewhere are published only after 18 months from the priority date. The publication of discoveries in the scientific or patent literature frequently occurs substantially later than the date on which the underlying discoveries were made. Therefore, patent applications relating to drugs similar to beloranib and any future drugs, discoveries or technologies we might develop may have already been filed by others without our knowledge.

Competition

The biopharmaceuticals industry is highly competitive. There are many public and private biopharmaceutical companies, universities, governmental agencies and other research organizations actively engaged in the research and development of products that may be similar to our product candidates or address similar markets. It is probable that the number of companies seeking to develop products and therapies similar to our products will increase. Many of these and other existing or potential competitors have substantially greater financial, technical and human resources than we do and may be better equipped to develop, manufacture and market products. These competitors may develop and introduce products and processes comparable or superior to ours.

Obesity Caused by Rare Conditions

There are no current pharmacological treatments for regulating hunger and hyperphagia-related behaviors of PWS patients and patients with craniopharyngioma-associated obesity, and bariatric surgery is contraindicated in PWS patients and not frequently employed in patients with craniopharyngioma-associated obesity. We are aware of a clinical trial planned by Ferring Pharmaceuticals, Inc. to evaluate the use of oxytocin, a brain peptide hormone hypothesized to increase trust, reduce anxiety and improve behavior in patients with PWS. We also are aware of a clinical trial being planned by Essentialis, Inc. to evaluate the safety and tolerability of controlled-release diazoxide in PWS patients and to explore the effects of diazoxide on hyperphagia-related behaviors and energy expenditure. We are not aware of any clinical trials of drugs specifically targeting patients with craniopharyngioma-associated obesity.

Severe Obesity in the General Population

Surgical Approaches

Surgical approaches to treat severe obesity are becoming increasingly accepted and are believed to be the main form of competition to beloranib in this indication. Bariatric surgery, including gastric bypass and gastric banding procedures, is typically employed for obese patients with a BMI exceeding 40 kg/m^2 or those with a BMI greater than 30 kg/m^2 who are experiencing obesity-related complications such as diabetes. However, in December 2010, the FDA's Advisory Committee for Gastroenterology and Urology Devices convened and voted in favor of recommending to the FDA that gastric banding procedures be approved for obese patients with a BMI greater than 30 kg/m^2 who are experiencing obesity related co-morbidities or patients with a BMI greater than 35 kg/m^2 with or without obesity related co-morbidities. In addition, other potential approaches which utilize various implantable devices or surgical tools are in development, by companies such as Allergan, Inc., Boston Scientific Corporation, Covidien Ltd., EnteroMedics, Inc., GI Dynamics, Inc., Johnson & Johnson and Medtronic, Inc.

Existing Obesity Drugs

In addition, beloranib will compete with orlistat, phentermine/topiramate and lorcaserin, three recently approved and currently marketed pharmaceutical products in the United States for the treatment of obesity, and several older agents, indicated for short-term administration, phentermine, phendimetrazine, benzphetamine and diethylpropion. Orlistat is marketed in the United States by Roche Group under the brand name Xenical and over-the-counter in the United States at half the prescribed dose by GlaxoSmithKline under the brand name alli. In June 2013, Arena Pharmaceuticals, Inc. launched its lorcaserin product, which is marketed in the United States under the name Belviq and in September 2012, Vivus, Inc. commercially launched its combination product, phentermine/topiramate, under the trade name Qsymia.

Despite the large market opportunity for anti-obesity agents, there are relatively few competitive products in late-stage clinical development. Other companies pursuing pharmaceutical treatments for obesity include Neurosearch A/S, Novo Nordisk A/S and Takeda Pharmaceutical Company Limited. In addition, Orexigen Therapeutics, Inc. resubmitted its NDA for Contrave in December 2013.

We are not aware of any clinical trials of drugs specifically targeting patients with severe obesity.

Government Regulation

Government authorities in the United States at the federal, state and local level and in other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of drug products such as beloranib. Generally, before a new drug can be marketed, considerable data demonstrating its quality, safety and efficacy must be obtained, organized into a format specific to each regulatory authority, submitted for review and approved by the regulatory authority.

U.S. Drug Development

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls or withdrawals from the market, product seizures, total or partial suspension of production or distribution injunctions, fines, refusals of government contracts, restitution, disgorgement, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

Our product candidates must be approved by the FDA through the NDA process before they may be legally marketed in the United States. The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- Completion of extensive nonclinical, sometimes referred to as pre-clinical laboratory tests, pre-clinical animal studies and formulation studies in accordance with applicable regulations, including the FDA's Good Laboratory Practice, or GLP, regulations;
- Submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- Performance of adequate and well-controlled human clinical trials in accordance with applicable IND and other clinical trial-related regulations, sometimes referred to as current good clinical practices, or cGCPs, to establish the safety and efficacy of the proposed drug for its proposed indication;
- Submission to the FDA of an NDA, for a new drug;
- A determination by the FDA within 60 days of its receipt of an NDA to file the NDA for review;
- Satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities where the drug is produced to assess compliance with the FDA's current good manufacturing practice requirements, or cGMP, to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- Potential FDA audit of the pre-clinical and/or clinical trial sites that generated the data in support of the NDA; and
- FDA review and approval of the NDA prior to any commercial marketing or sale of the drug in the United States.

The data required to support an NDA is generated in two distinct development stages: pre-clinical and clinical. For new chemical entities, the pre-clinical development stage generally involves synthesizing the active component, developing the formulation and determining the manufacturing process, as well as carrying out non-human toxicology, pharmacology and drug metabolism studies in the laboratory, which support subsequent clinical testing. The conduct of the pre-clinical tests must comply with federal regulations, including GLPs. The sponsor must submit the results of the pre-clinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. An IND is a request for authorization from the FDA to administer an investigational drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol(s) for human trials. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions regarding the proposed clinical trials and places the IND on clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a drug candidate at any time before or during clinical trials due to safety concerns or non-

compliance. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that could cause the trial to be suspended or terminated.

The clinical stage of development involves the administration of the drug candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety and assess efficacy. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Further, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries.

Clinical trials are generally conducted in three sequential phases that may overlap, known as Phase 1, Phase 2 and Phase 3 clinical trials. Phase 1 clinical trials generally involve a small number of healthy volunteers who are initially exposed to a single dose and then multiple doses of the product candidate. The primary purpose of these clinical trials is to assess the metabolism, pharmacologic action, side effect tolerability and safety of the drug. Phase 2 clinical trials typically involve studies in disease-affected patients to determine the dose required to produce the desired benefits. At the same time, safety and further pharmacokinetic and pharmacodynamic information is collected, as well as identification of possible adverse effects and safety risks and preliminary evaluation of efficacy. Phase 3 clinical trials generally involve large numbers of patients at multiple sites, in multiple countries (from several hundred to several thousand subjects) and are designed to provide the data necessary to demonstrate the efficacy of the product for its intended use, its safety in use, and to establish the overall benefit/risk relationship of the product and provide an adequate basis for product approval. Phase 3 clinical trials may include comparisons with placebo and/or other comparator treatments. The duration of treatment is often extended to mimic the actual use of a product during marketing. Generally, two adequate and well-controlled Phase 3 clinical trials are required by the FDA for approval of an NDA.

Post-approval trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, FDA may mandate the performance of Phase 4 clinical trials.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and written IND safety reports must be submitted to the FDA and the investigators for serious and unexpected adverse events or any finding from tests in laboratory animals that suggests a significant risk for human subjects. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA, the IRB, or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether or not a trial may move forward at designated check points based on access to certain data from the trial. We may also suspend or terminate a clinical trial based on evolving business objectives and/or competitive climate. Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing

process must be capable of consistently producing quality batches of the drug candidate and, among other things, must develop methods for testing the identity, strength, quality and purity of the final drug product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

NDA and FDA Review Process

Following trial completion, trial data is analyzed to assess safety and efficacy. The results of pre-clinical studies and clinical trials are then submitted to the FDA as part of an NDA, along with proposed labeling for the product and information about the manufacturing process and facilities that will be used to ensure product quality, results of analytical testing conducted on the chemistry of the drug, and other relevant information. The NDA is a request for approval to market the drug and must contain proof of safety, purity, potency and efficacy, which is demonstrated by extensive pre-clinical and clinical testing. The application includes both negative or ambiguous results of pre-clinical and clinical trials as well as positive findings. Data may come from company-sponsored clinical trials intended to test the safety and efficacy of a use of a product, or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the investigational drug product to the satisfaction of the FDA. The submission of an NDA is subject to the payment of substantial user fees; a waiver of such fees may be obtained under certain limited circumstances. FDA approval of an NDA must be obtained before a drug may be offered for sale in the United States.

In addition, under the Pediatric Research Equity Act, or PREA, an NDA or supplement to an NDA must contain data to assess the safety and efficacy of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers.

Under the Prescription Drug User Fee Act, or PDUFA, as amended, each NDA must be accompanied by a user fee. The FDA adjusts the PDUFA user fees on an annual basis. According to the FDA's fee schedule, effective through September 30, 2014, the user fee for an application requiring clinical data, such as an NDA, is $2,169,100. PDUFA also imposes an annual product fee for human drugs ($104,060) and an annual establishment fee ($554,600) on facilities used to manufacture prescription drugs. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on NDAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA reviews all NDAs submitted before it accepts them for filing and may request additional information rather than accepting an NDA for filing. The FDA must make a decision on accepting an NDA for filing within 60 days of receipt. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has 10 months from the filing date in which to complete its initial review of a standard NDA and respond to the applicant, and six months from the filing date for a priority NDA. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs, and the review process is often significantly extended by FDA requests for additional information or clarification.

After the NDA submission is accepted for filing, the FDA reviews the NDA to determine, among other things, whether the proposed product is safe and effective for its intended use, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, strength, quality and purity. The FDA may refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. In the case of obesity drugs, the FDA normally refers such drugs to the Endocrinologic and Metabolic Drugs Advisory Committee. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. The FDA will likely

re-analyze the clinical trial data, which could result in extensive discussions between the FDA and us during the review process. The review and evaluation of an NDA by the FDA is extensive and time consuming and may take longer than originally planned to complete, and we may not receive a timely approval, if at all.

Before approving an NDA, the FDA will conduct a pre-approval inspection of the manufacturing facilities for the new product to determine whether they comply with cGMPs. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. In addition, before approving an NDA, the FDA may also audit data from clinical trials to ensure compliance with GCP requirements. After the FDA evaluates the application, manufacturing process and manufacturing facilities, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter usually describes all of the specific deficiencies in the NDA identified by the FDA. The Complete Response Letter may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant and time-consuming requirements related to clinical trials, pre-clinical studies or manufacturing. If a Complete Response Letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data.

There is no assurance that the FDA will ultimately approve a drug product for marketing in the United States and we may encounter significant difficulties or costs during the review process. If a product receives marketing approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling or may condition the approval of the NDA on other changes to the proposed labeling, development of adequate controls and specifications, or a commitment to conduct post-market testing or clinical trials and surveillance to monitor the effects of approved products. For example, the FDA may require Phase 4 testing which involves clinical trials designed to further assess a drug safety and effectiveness and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized. The FDA may also place other conditions on approvals including the requirement for a REMS to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS. The FDA will not approve the NDA without an approved REMS, if required. A REMS could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Any of these limitations on approval or marketing could restrict the commercial promotion, distribution, prescription or dispensing of products. Product approvals may be withdrawn for non-compliance with regulatory standards or if problems occur following initial marketing.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biological product intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making a drug or biological product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan product designation must be requested before submitting an NDA. After the FDA grants orphan product designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means

that the FDA may not approve any other applications to market the same drug or biological product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity. Competitors, however, may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity. Orphan product exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval of the same biological product as defined by the FDA or if our product candidate is determined to be contained within the competitor's product for the same indication or disease. If a drug or biological product designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity. Orphan drug status in the European Union has similar, but not identical, benefits.

Expedited Development and Review Programs

The FDA has a Fast Track program that is intended to expedite or facilitate the process for reviewing new drugs and biological products that meet certain criteria. Specifically, new drugs and biological products are eligible for Fast Track designation if they are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request the FDA to designate the drug or biologic as a Fast Track product at any time during the clinical development of the product. Unique to a Fast Track product, the FDA may consider for review sections of the marketing application on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

Any product submitted to the FDA for marketing, including under a Fast Track program, may be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. Any product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug or biological product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Drug or biological products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means that they may be approved on the basis of adequate and well-controlled clinical trials establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials. If the FDA concludes that a drug shown to be effective can be safely used only if distribution or use is restricted, it will require such post-marketing restrictions as it deems necessary to assure safe use of the drug, such as:

- distribution restricted to certain facilities or physicians with special training or experience; or
- distribution conditioned on the performance of specified medical procedures.

The limitations imposed would be commensurate with the specific safety concerns presented by the drug. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast Track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Pediatric Trials

Recently, the Food and Drug Administration Safety and Innovation Act, or FDASIA, which was signed into law on July 9, 2012, amended the FDCA. FDASIA requires that a sponsor who is planning to submit a marketing application for a drug or biological product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, within sixty days of an end-of-Phase 2 meeting or as may be agreed between the sponsor and FDA. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from nonclinical studies, early phase clinical trials, and/or other clinical development programs.

Post-Marketing Requirements

Following approval of a new product, a pharmaceutical company and the approved product are subject to continuing regulation by the FDA, including, among other things, monitoring and recordkeeping activities, reporting to the applicable regulatory authorities of adverse experiences with the product, providing the regulatory authorities with updated safety and efficacy information, product sampling and distribution requirements, and complying with promotion and advertising requirements, which include, among others, standards for direct-to-consumer advertising, restrictions on promoting drugs for uses or in patient populations that are not described in the drug's approved labeling (known as "off-label use"), limitations on industry-sponsored scientific and educational activities, and requirements for promotional activities involving the internet. Although physicians may prescribe legally available drugs for off-label uses, manufacturers may not market or promote such off-label uses. Modifications or enhancements to the product or its labeling or changes of the site of manufacture are often subject to the approval of the FDA and other regulators, which may or may not be received or may result in a lengthy review process.

Prescription drug advertising is subject to federal, state and foreign regulations. In the United States, the FDA regulates prescription drug promotion, including direct-to-consumer advertising. Prescription drug promotional materials must be submitted to the FDA in conjunction with their first use. Any distribution of prescription drug products and pharmaceutical samples must comply with the U.S. Prescription Drug Marketing Act, or the PDMA, a part of the FDCA.

In the United States, once a product is approved, its manufacture is subject to comprehensive and continuing regulation by the FDA. The FDA regulations require that products be manufactured in specific approved facilities and in accordance with cGMP. We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products in accordance with cGMP regulations. cGMP regulations require among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. These regulations also impose certain organizational, procedural and documentation requirements with respect to manufacturing and quality assurance activities. NDA holders using contract manufacturers, laboratories or packagers are responsible for the selection and monitoring of qualified firms, and, in certain circumstances, qualified suppliers to these firms. These firms and, where applicable, their suppliers are subject to inspections by the FDA at any time, and the discovery of violative conditions, including failure to conform to cGMP, could result in enforcement actions that interrupt the operation of any such facilities or the ability to distribute products manufactured, processed or tested by them. Discovery of

problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including, among other things, recall or withdrawal of the product from the market.

The FDA also may require post-approval testing, sometimes referred to as Phase 4 testing, risk minimization action plans and post-marketing surveillance to monitor the effects of an approved product or place conditions on an approval that could restrict the distribution or use of the product. Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement, warning letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

Other Regulatory Matters

Manufacturing, sales, promotion and other activities following product approval are also subject to regulation by numerous regulatory authorities in addition to the FDA, including, in the United States, the Centers for Medicare & Medicaid Services, other divisions of the Department of Health and Human Services, the Drug Enforcement Administration, the Consumer Product Safety Commission, the Federal Trade Commission, the Occupational Safety & Health Administration, the Environmental Protection Agency and state and local governments. In the United States, sales, marketing and scientific/educational programs must also comply with state and federal fraud and abuse laws. Pricing and rebate programs must comply with the Medicaid rebate requirements of the U.S. Omnibus Budget Reconciliation Act of 1990 and more recent requirements in the Health Care Reform Law, as amended by the Health Care and Education Affordability Reconciliation Act, or ACA. If products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. The handling of any controlled substances must comply with the U.S. Controlled Substances Act and Controlled Substances Import and Export Act. Products must meet applicable child-resistant packaging requirements under the U.S. Poison Prevention Packaging Act. Manufacturing, sales, promotion and other activities are also potentially subject to federal and state consumer protection and unfair competition laws.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The failure to comply with regulatory requirements subjects firms to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, recall or seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, or refusal to allow a firm to enter into supply contracts, including government contracts. In addition, even if a firm complies with FDA and other requirements, new information regarding the safety or efficacy of a product could lead the FDA to modify or withdraw product approval. Prohibitions or restrictions on sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

U.S. Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of the FDA approval of our drug candidates, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of an NDA plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. PTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we intend to apply for restoration of patent term for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA.

Marketing exclusivity provisions under the FDCA can also delay the submission or the approval of certain marketing applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication, where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the pre-clinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness. Orphan drug exclusivity, as described above, may offer a seven-year period of marketing exclusivity, except in certain circumstances. Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial.

European Union Drug Development

In the European Union, our future products may also be subject to extensive regulatory requirements. As in the United States, medicinal products can only be marketed if a marketing authorization from the competent regulatory agencies has been obtained.

Similar to the United States, the various phases of pre-clinical and clinical research in the European Union are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the EU clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the EU, the EU Member States have transposed and applied the provisions of the Directive

differently. This has led to significant variations in the member state regimes. Under the current regime, before a clinical trial can be initiated it must be approved in each of the EU countries where the trial is to be conducted by two distinct bodies: the National Competent Authority, or NCA, and one or more Ethics Committees, or ECs. Under the current regime all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred.

The EU clinical trials legislation is currently undergoing a revision process mainly aimed at uniforming and streamlining the clinical trials authorization process, simplifying adverse event reporting procedures, improving the supervision of clinical trials, and increasing their transparency.

European Union Drug Review and Approval

In the European Economic Area, or EEA, (which is comprised of the 27 Member States of the European Union (excluding Croatia) plus Norway, Iceland and Liechtenstein), medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA. There are two types of marketing authorizations:

The Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use, or CHMP, of the European Medicines Agency, or EMA, and which is valid throughout the entire territory of the EEA. The Centralized Procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products, and medicinal products containing a new active substance indicated for the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and viral diseases. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU.

National MAs, which are issued by the competent authorities of the Member States of the EEA and only cover their respective territory, are available for products not falling within the mandatory scope of the Centralized Procedure. Where a product has already been authorized for marketing in a Member State of the EEA, this National MA can be recognized in another Member States through the Mutual Recognition Procedure. If the product has not received a National MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the Decentralized Procedure. Under the Decentralized Procedure an identical dossier is submitted to the competent authorities of each of the Member States in which the MA is sought, one of which is selected by the applicant as the Reference Member State, or RMS. The competent authority of the RMS prepares a draft assessment report, a draft summary of the product characteristics, or SPC, and a draft of the labeling and package leaflet, which are sent to the other Member States (referred to as the Member States Concerned) for their approval. If the Member States Concerned raise no objections, based on a potential serious risk to public health, to the assessment, SPC, labeling, or packaging proposed by the RMS, the product is subsequently granted a national MA in all the Member States (i.e. in the RMS and the Member States Concerned).

Under the above described procedures, before granting the MA, the EMA or the competent authorities of the Member States of the EEA make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

European Union New Chemical Entity Exclusivity

In the European Union, new chemical entities, sometimes referred to as new active substances, qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity. This data exclusivity, if granted, prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic application for eight years, after which generic marketing authorization can be submitted, and the innovator's data may be referenced, but not approved for two years. The overall ten-year period will be extended to a maximum of 11 years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the

scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

European Union Orphan Designation and Exclusivity

In the European Union, the EMA's Committee for Orphan Medicinal Products grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than 5 in 10,000 persons in the European Union Community and for which no satisfactory method of diagnosis, prevention, or treatment has been authorized (or the product would be a significant benefit to those affected). Additionally, designation is granted for products intended for the diagnosis, prevention, or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the medicinal product.

In the European Union, orphan drug designation entitles a party to financial incentives such as reduction of fees or fee waivers and ten years of market exclusivity is granted following medicinal product approval. This period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. Orphan drug designation must be requested before submitting an application for marketing approval. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

Reimbursement

Sales of our products will depend, in part, on the extent to which our products will be covered by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing reimbursements for medical products and services. Additionally, the containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our product candidate or a decision by a third-party payor to not cover our product candidate could reduce physician usage of the product candidate and have a material adverse effect on our sales, results of operations and financial condition.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities which provide coverage of outpatient prescription drugs. Unlike Medicare Part A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for products for which we receive marketing approval. However, any negotiated prices for our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. The plan for the research was published in

2012 by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures will be made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our product candidate, if any such product or the condition that it is intended to treat is the subject of a trial. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of our product candidate. If third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

The Health Care Reform Law, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, or collectively the ACA, enacted in March 2010, is expected to have a significant impact on the health care industry. The ACA is expected to expand coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, among other things, the ACA is expected to expand and increase industry rebates for drugs covered under Medicaid programs and make changes to the coverage requirements under the Medicare Part D program. We cannot predict the impact of the ACA on pharmaceutical companies as many of the ACA reforms require the promulgation of detailed regulations implementing the statutory provisions which has not yet occurred. For example, pharmaceutical manufacturers are required to track certain financial arrangements with physicians and teaching hospitals, including any "transfer of value" made or distributed to such entities, as well as any investment interests held by physicians and their immediate family members. Manufacturers are required by ACA to begin tracking this information in 2013 and to report this information to CMS beginning in 2014.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, started in April 2013. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which delayed for another two months the budget cuts mandated by these sequestration provisions of the Budget Control Act of 2011. The ATRA, among other things, also reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. We expect that additional federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, and in turn could significantly reduce the projected value of certain development projects and reduce our profitability.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the European Union do not follow price structures of the United States and generally tend to be significantly lower.

Employees

As of February 28, 2014, we employed ten full-time employees, including six in research and development and four in general and administrative, and two part-time employees in general and administrative. We have

never had a work stoppage, and none of our employees is represented by a labor organization or under any collective-bargaining arrangements. We consider our employee relations to be good.

Facilities

We lease our office space, which consists of 2,625 square feet located in Cambridge, Massachusetts. Our lease expired on January 31, 2014, under an extended six-month term, but we extended the lease pursuant to the terms of the current lease agreement for an additional six-month period, which commenced on February 1, 2014. We have an opportunity to extend for one more six-month extension under the current lease agreement, which if extended would commence on August 1, 2014. We believe our current office space is sufficient to meet our needs until the expiration of our lease.

Legal Proceedings

As of the date of this prospectus, we were not party to any legal matters or claims. In the future, we may become party to legal matters and claims arising in the ordinary course of business, the resolution of which we do not anticipate would have a material adverse impact on our financial position, results of operations or cash flows.

MANAGEMENT

Executive Officers, Key Employees and Directors

The following table sets forth certain information about our executive officers, key employees and directors, including their ages as of February 28, 2014.

Name	Age	Position(s)
Executive Officers:		
Thomas E. Hughes, Ph.D.	54	President, Chief Executive Officer and Director
Dennis D. Kim, M.D., M.B.A.	44	Chief Medical Officer
Patricia L. Allen	52	Chief Financial Officer
Key Employees:		
James E. Vath, Ph.D.	53	Head of Research and Development
Directors:		
Peter Barrett, Ph.D.	61	Chairman
Bruce Booth, Ph.D.	39	Director
Avi Goldberg	38	Director
John L. LaMattina, Ph.D.	64	Director
Kevin P. Starr	51	Director
Lou Tartaglia, Ph.D.	50	Director

(1) Member of the Compensation Committee.
(2) Member of the Audit Committee.
(3) Member of the Nominating and Corporate Governance Committee.

The following paragraphs provide information as of the date of this prospectus about our executive officers, key employees and directors. The information presented includes information about each of our directors' specific experience, qualifications, attributes and skills that led our board of directors to the conclusion that he should serve as a director.

Thomas E. Hughes, Ph.D. Dr. Hughes has served as our Chief Executive Officer, President and a member of our board of directors since October 2008. From 1987 to 2008, he held several positions at Novartis AG (and formerly Sandoz Pharmaceuticals) including vice president and global head of the cardiovascular and metabolic diseases therapeutic area at the Novartis Institutes for BioMedical Research in Cambridge, MA. In these roles he oversaw many drug discovery and development projects targeting obesity, diabetes and heart disease. Dr. Hughes is the author of over 40 peer-reviewed publications and is an inventor on numerous issued and pending patents related to the treatment of diabetes, cardiovascular disease and obesity. Dr. Hughes also serves as a director on the board of Miragen Therapeutics, Inc., and is a member of several scientific and strategic advisory boards, including Broadview Ventures and Nimbus Discovery, LLC. Dr. Hughes holds a Ph.D. in nutritional biochemistry from Tufts University, an M.S. in Zoology from Virginia Polytechnic Institute & State University and a B.S. in biology from Franklin and Marshall College. Dr. Hughes' qualifications to sit on our board of directors include his extensive knowledge of the obesity industry combined with his leadership, executive, managerial and pharmaceutical company experience, and his more than 25 years of industry experience in the development and commercialization of pharmaceutical products.

Dennis D. Kim, M.D., M.B.A. Dr. Kim has served as our Chief Medical Officer since September 2011. From 2001 to 2012, Dr. Kim was an assistant professor of medicine, division of endocrinology/metabolism, at the University of California, San Diego School of Medicine. From September 2008 to February 2011, Dr. Kim held multiple senior-level clinical and corporate affairs positions at Orexigen Therapeutics, a biopharmaceutical company focused on the treatment of obesity, including senior vice president, head of obesity/metabolic diseases; senior vice president, corporate development; and senior vice president, medical affairs and communications. Prior to Orexigen, from September 2007 to September 2008, he was chief medical officer and vice president of

medical affairs at EnteroMedics, Inc., where he oversaw all aspects of clinical affairs and successfully implemented an initial public offering as part of the executive team in 2007. Previously, from July 2001 to September 2007, he held positions of increasing responsibility at Amylin Pharmaceuticals, Inc., most recently as executive director, corporate strategy, where he managed corporate and business strategic planning spanning all commercial products, developmental drug candidates, corporate alliance partnership and manufacturing support. Dr. Kim holds an M.D. from the University of Health Sciences, The Chicago Medical School, an M.B.A from University of California, San Diego Rady School of Management and a B.S. in biology from the University of California at Los Angeles.

Patricia L. Allen. Ms. Allen has served as our Chief Financial Officer since January 2013. Ms. Allen has over 20 years of financial leadership experience in the biotechnology industry at both publicly traded and private companies. From 2011 to 2012, she provided independent consulting services to biotechnology companies in a variety of areas, including interim CFO services, fundraising, deal structures, financial planning, organizational structure, investor relations and business development. Previously, from 2004 to 2011, Ms. Allen served as the Vice President of Finance, Treasurer and Principal Financial Officer of Alnylam Pharmaceuticals, where she had significant interactions with the investment community and was influential in raising over $900 million via the company's initial public offering, follow-on common stock offerings and multiple business development transactions with top-tier pharmaceutical companies. Prior to Alnylam, Ms. Allen was at Alkermes, Inc., most recently as the Director of Finance. Ms. Allen began her career as an auditor at Deloitte & Touche, LLP. Ms. Allen graduated summa cum laude from Bryant College with a B.S. in business administration.

James E. Vath, Ph.D. Dr. Vath has served as our Head of Research and Development since 2006. From July 2006 to 2008, Dr. Vath served as our Chief Scientific Officer. Dr. Vath has over 20 years of experience in the biotechnology and pharmaceutical industries. Prior to joining the company, from 2004 to 2005, Dr. Vath served as senior vice president of product development at Phylogix Inc. where he created and implemented the corporate operational and R&D plan for the lead product in oncology-supportive care. Prior to Phylogix, from 1999 to 2004, he served in multiple roles, most recently as senior vice president of research at Praecis Pharmaceuticals where he led the R&D organization through multiple IND filings and a product approval. From 1996 to 1999 Dr. Vath was at Millennium Pharmaceuticals where he was most recently Director of Protein Technologies and from 1989 to 1996 he was a laboratory head in the development organization at Genetics Institute. Dr. Vath is a contributing author on numerous peer-reviewed journal publications and book chapters. Dr. Vath holds a Ph.D. in chemistry from the Massachusetts Institute of Technology and a B.S. in chemistry from Northeastern University.

Peter Barrett, Ph.D. Dr. Barrett has served as the chairman of our board of directors since August 2006. Dr. Barrett joined Atlas Venture, an early-stage venture capital fund, in 2002, and currently serves as a partner in the life sciences group. Previously, from 1998 to 2002, he was a co-founder, executive vice president and chief business officer of Celera Genomics. Prior to Celera, from 1979 to 1998, Dr. Barrett held senior management positions at the Perkin-Elmer Corporation, most recently serving as vice president, corporate planning and business development. Dr. Barrett served on the boards of directors of SciClone Pharmaceuticals, Inc. from 2011 to 2013, and Helios BioSciences Corporation from 2003 to 2012. Dr. Barrett currently serves on the boards of directors of the Perkin-Elmer Corporation and several other privately held companies. Dr. Barrett is currently vice chairman of the advisory council of the Barnett Institute of Chemical and Biological Analysis at Northeastern University, as well as adjunct professor at the Barnett Institute. He also serves as president of the Autism Consortium, a non-profit institution and is a member of the research council at Boston Children's Hospital. Dr. Barrett holds a B.S. in chemistry from Lowell Technological Institute (now known as the University of Massachusetts, Lowell) and a Ph.D. in analytical chemistry from Northeastern University. He also completed Harvard Business School's Management Development Program. Dr. Barrett's qualifications to sit on our board include his extensive leadership, executive, managerial and business experience with life sciences companies, including experience in the formation, development and business strategy of multiple start-up companies in the life sciences sector.

Bruce Booth, Ph.D. Dr. Booth has served as a member of our board of directors since August 2006. Dr. Booth joined Atlas Venture in 2005, and currently serves as partner in the life sciences group. Previously, from 2004 to 2005, Dr. Booth was a principal at Caxton Health Holdings L.L.C., a healthcare-focused investment firm, where he focused on the firm's venture capital activities. Prior to Caxton, from 1999 to 2004, he was an associate principal at McKinsey & Company, a global strategic management consulting firm, where he advised clients on R&D productivity, corporate strategy and business development issues across the biopharmaceutical sector. Dr. Booth currently serves on the board of directors of Miragen Therapeutics, Bicycle Therapeutics, Nimbus Discovery, Rodin Therapeutics and several other seed-stage biotechnology companies. In addition, Dr. Booth serves on UCB Pharma's New Medicines Scientific Advisory Board, and participates on several other advisory boards for pharmaceutical companies and academic medical centers. Dr. Booth is also a trustee of the New York Academy of Medicine. As a British Marshall Scholar, Dr. Booth holds a Ph.D. in molecular immunology from the Oxford University's Nuffield Department of Medicine and a B.S. in biochemistry, summa cum laude, from the Pennsylvania State University. Dr. Booth's qualifications to sit on our board include his extensive leadership, executive, managerial and business experience with life sciences companies, including experience in the formation, development and business strategy of multiple start-up companies in the life sciences sector.

Avi Goldberg. Mr. Goldberg has served as a member of our board of directors since May 2004. Since 2004, Mr. Goldberg has served as partner at Greatpoint Ventures. Mr. Goldberg served as the chief operating officer at GreatPoint Energy from 2004 to 2013, where he was responsible for managing all business development, legal, financial and operational planning functions for the company. Previously, from 2000 to 2004, Mr. Goldberg co-founded Coatue Corporation, a microelectronics company developing novel polymer materials for use in the semiconductor industry. As the chief operating officer and member of the board of directors, he was instrumental in assembling the executive team, securing venture and debt financing, and negotiating the purchase of the company in June 2003 by Advanced Micro Devices. From 1998 to 2000, Mr. Goldberg served as director of worldwide sales and network optimization for Cignal Global Communications, a pioneer in voice over data network communications, where he managed global sales and cost containment for Cignal's core business units, generating over $50 million a year in revenue. Mr. Goldberg graduated magna cum laude from Boston University with a B.A. in political science and strategic intelligence. Mr. Goldberg's qualifications to sit on our board include his extensive operating and managerial experiences.

John L. LaMattina, Ph.D. Dr. LaMattina has served as a member of our board of directors since December 2013. Since 2009, Dr. LaMattina has been a senior partner at PureTech Health, a technology development company focusing on biotech investments. Prior to that, Dr. LaMattina spent 30 years at Pfizer Inc. beginning as a medicinal chemist in 1977. During his career, he was appointed to various positions of increasing responsibility for Pfizer Central Research, including Vice President of U.S. Discovery Operations in 1993, Senior Vice President of Worldwide Discovery Operations in 1998, Senior Vice President of Worldwide Development in 1999 and President of Pfizer Global R&D in 2003. Dr. LaMattina graduated with cum laude honors from Boston College with a B.S. in Chemistry. He received a Ph.D. from the University of New Hampshire in Organic Chemistry and subsequently was at Princeton University in the National Institutes of Health Postdoctoral Fellowship program. From 2008 to 2012, Dr. LaMattina served on the board of directors of Human Genome Sciences. From 2008 to 2010, Dr. LaMattina served on the board of directors of Neurogen Corp. Dr. LaMattina currently serves on several boards, including the board of directors of Ligand Pharmaceuticals, the Board of Trustees of Boston College, the Scientific Advisory Board for Trevena Pharmaceuticals and the Scientific Advisory Board of Ziarco Pharmaceuticals. Dr. LaMattina's qualifications to sit on our board include his valuable pharmaceutical experience, including his service at Pfizer Inc., one of the world's largest pharmaceutical companies, in addition to his experience on several boards and involvement in the biotechnology industry through his position as a senior partner at PureTech.

Kevin P. Starr. Mr. Starr has served as a member of our board of directors since December 2006. In April 2007, Mr. Starr co-founded Third Rock Ventures, a venture capital firm where he remains a partner. From January 2003 to March 2007, Mr. Starr undertook a number of entrepreneurial endeavors in the life science and entertainment industries. From December 2001 to December 2002, Mr. Starr served as chief operating officer of Millennium. He also served as Millennium's chief financial officer from December 1998 to December 2002. Mr. Starr currently serves on the board of

directors of Agios Pharmaceuticals, Inc., Alnylam Pharmaceuticals, Inc., PanOptica, Inc., MyoKardia, Inc., Global Blood Therapeutics, Inc., Afferent Pharmaceutical, Ember Therapeutics and SAGE Therapeutics. Mr. Starr received an M.S. in corporate finance from Boston College and a B.S./B.A. in mathematics and business from Colby College. Mr. Starr's qualifications to serve on our board of directors include his executive management roles with responsibility over key financial and business planning functions and experience in the formation, development and business strategy of multiple start-up companies in the life sciences sector.

Lou Tartaglia, Ph.D. Dr. Tartaglia has served as a member of our board of directors since October 2007. He joined Third Rock Ventures, a venture capital firm dedicated to building transformational life science companies, in 2007, and currently serves as a partner. Prior to joining Third Rock Ventures, from July 2004 to June 2007, Dr. Tartaglia was senior vice president and general manager at Gene Logic, and from April 1993 to June 2004, he served as vice president of new ventures and vice president of metabolic diseases at Millennium Pharmaceuticals. Dr. Tartaglia holds a Ph.D. in Biochemistry from the University of California, Berkeley and a B.S. in Chemistry from University at Albany, The State University of New York. Dr. Tartaglia's qualifications to sit on our board include his extensive leadership, executive, managerial and business experience with life sciences companies, including experience in the formation, development and business strategy of multiple start-up companies in the life sciences sector.

Composition of our Board of Directors

As of February 28, 2014, our board of directors consisted of seven members, each of whom are members pursuant to the board composition provisions of our certificate of incorporation and our voting agreement, which agreement is described under "Certain Relationships and Related Party Transactions" in this prospectus. These board composition provisions will terminate upon the completion of this offering. Upon the termination of these provisions, there will be no further contractual obligations regarding the election of our directors. Our nominating and corporate governance committee and our board of directors may therefore consider a broad range of factors relating to the qualifications and background of nominees, which may include diversity, which is not only limited to race, gender or national origin. We have no formal policy regarding board diversity. Our nominating and corporate governance committee's and our board of directors' priority in selecting board members is identification of persons who will further the interests of our stockholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business, understanding of the competitive landscape and professional and personal experiences and expertise relevant to our growth strategy. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal. Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the completion of this offering also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. Notwithstanding the foregoing, Dr. Hughes will serve without further compensation as a member of the board of directors for as long as he serves as our chief executive officer.

Director Independence. Our board of directors has determined that all members of the board of directors, except Dr. Hughes, are independent directors, including for purposes of the rules of NASDAQ Stock Market and relevant federal securities laws and regulations. There are no family relationships among any of our directors or executive officers.

Staggered Board. In accordance with the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the completion of this offering, our board of directors will be divided into three staggered classes of directors of the same or nearly the same number and each will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the

directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2015 for Class I directors, 2016 for Class II directors and 2017 for Class III directors.

- Our Class I directors will be , and ;
- Our Class II directors will be and ; and
- Our Class III directors will be and .

Our amended and restated certificate of incorporation and amended and restated by-laws provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class shall consist of one third of the board of directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

Committees of our Board of Directors

Our board of directors plans on establishing an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter to be adopted by our board of directors and will be effective upon completion of the offering. Upon the completion of this offering, the composition and functioning of all of our committees will comply with all applicable requirements of the Sarbanes-Oxley Act of 2002, the NASDAQ Stock Market and the SEC rules and regulations.

Audit committee. Effective upon completion of this offering, , and will serve on the audit committee, which will be chaired by . Our board of directors has determined that , and are "independent" for audit committee purposes as that term is defined in the rules of the SEC and the applicable NASDAQ Stock Market rules, and has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has designated as an "audit committee financial expert," as defined under the applicable rules of the SEC. Our board has determined that while satisfy the independence requirements under applicable NASDAQ Stock Market rules, they do not satisfy the independence requirements of the SEC applicable to members of audit committees. The transition rules of the SEC provide that two members of the audit committee may be exempt from these more stringent independence requirements for 90 days after the effectiveness of this registration statement, and one member may be exempt for one year after the effectiveness of this registration statement. Our board of directors intends to cause our audit committee to comply with the transition rules within the applicable time periods. The audit committee's responsibilities include:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our consolidated financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly consolidated financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;

- recommending based upon the audit committee's review and discussions with management and our independent registered public accounting firm whether our audited consolidated financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our consolidated financial statements and our compliance with legal and regulatory requirements as they relate to our consolidated financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases and scripts.

Compensation committee. Effective upon completion of this offering, , and will serve on the compensation committee, which will be chaired by . Our board of directors has determined that each member of the compensation committee is "independent" as defined in the applicable NASDAQ Stock Market rules. The compensation committee's responsibilities include:

- annually reviewing and approving corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and determining the compensation of our Chief Executive Officer;
- reviewing and approving the compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- reviewing and making recommendations to the board of directors with respect to director compensation;
- reviewing and discussing with management the compensation discussion and analysis to be included in our annual proxy statement or Annual Report on Form 10-K; and
- reviewing and discussing with the board of directors the corporate succession plans for the Chief Executive Officer and other key officers.

Nominating and corporate governance committee. Effective upon completion of this offering, , and will serve on the nominating and corporate governance committee, which will be chaired by . Our board of directors has determined that each member of the nominating and corporate governance committee is "independent" as defined in the applicable NASDAQ Stock Market rules. The nominating and corporate governance committee's responsibilities include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the size and composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees;
- developing and recommending to the board of directors a code of business conduct and ethics and a set of corporate governance guidelines;

- developing a mechanism by which violations of the code of business conduct and ethics can be reported in a confidential manner; and
- overseeing the evaluation of the board of directors and management.

Our board of directors may from time to time establish other committees.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee has at any time during the prior three years been one of our officers or employees. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee.

Corporate Governance

We plan to adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting, which will be effective upon completion of this offering. Upon the completion of this offering, our code of business conduct and ethics will be available on our website at www.zafgen.com. We intend to disclose any amendments to the code, or any waivers of its requirements, on our website or in a Current Report on Form 8-K.

Board Leadership Structure and Board's Role in Risk Oversight

The positions of chairman of the board and Chief Executive Officer are presently separated and have historically been separated at our company. We believe that separating these positions allows our Chief Executive Officer to focus on our day-to-day business, while allowing the chairman of the board to lead the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort and energy that the Chief Executive Officer is required to devote to his position in the current business environment, as well as the commitment required to serve as our chairman, particularly as the board of directors' oversight responsibilities continue to grow. While our amended and restated by-laws and corporate governance guidelines do not require that our chairman and Chief Executive Officer positions be separate, our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including risks relating to our operations, strategic direction and intellectual property as more fully discussed under "Risk Factors" in this prospectus. Management is responsible for the day-to-day management of risks we face, while our board of directors, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, our board of directors has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed.

The role of the board of directors in overseeing the management of our risks is conducted primarily through committees of the board of directors, as disclosed in the descriptions of each of the committees above and in the charters of each of the committees. The full board of directors (or the appropriate board committee in the case of risks that are under the purview of a particular committee) discusses with management our major risk exposures, their potential impact on us, and the steps we take to manage them. When a board committee is responsible for evaluating and overseeing the management of a particular risk or risks, the chairman of the relevant committee reports on the discussion to the full board of directors during the committee reports portion of the next board meeting. This enables the board of directors and its committees to coordinate the risk oversight role, particularly with respect to risk interrelationships.

EXECUTIVE AND DIRECTOR COMPENSATION

Summary Compensation Table

The following table sets forth the compensation paid or accrued during the fiscal year ended December 31, 2013 to our chief executive officer and our next highest-paid executive officers as of December 31, 2013. We refer to these officers as our named executive officers.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Option Awards(1) ($)	Non-Equity Incentive Plan Compensation ($)	All Other Compensation ($)	Total ($)
Thomas E. Hughes, Ph.D. *Chief Executive Officer*	2013	400,000	120,000	591,961	5,100	—	1,117,061
Dennis D. Kim, M.D., M.B.A. *Chief Medical Officer*	2013	325,000	82,000	85,342	5,100	—	497,442
Patricia L. Allen *Chief Financial Officer*	2013	237,898(2)	60,000	225,563	4,620	—	528,081

(1) Amounts represent the aggregate grant-date fair value of option awards granted to our named executive officers in 2013 computed in accordance with FASB ASC Topic 718. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our consolidated financial statements and discussions in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this prospectus. The amounts above reflect our aggregate accounting expense for these awards and do not necessarily correspond to the actual value that will be recognized by the named executive officers.

(2) Represents base salary earned by Ms. Allen for services as our Chief Financial Officer during 2013. Ms. Allen's annual base salary during this period was $265,000.

Narrative to Summary Compensation Table

Employment Arrangements with Our Named Executive Officers

We have entered into an employment agreement or offer letter with each of our named executive officers in connection with their employment with us. These employment agreements and offer letters provide for "at will" employment.

Thomas E. Hughes, Ph.D. On July 25, 2008, we entered into an offer letter with Dr. Hughes for the position of President and Chief Executive Officer. Dr. Hughes' employment has no specified term, but can be terminated at will by either party. Dr. Hughes currently receives a base salary of $425,000, which is subject to review and adjustment in accordance with company policy. Dr. Hughes is also eligible for an annual merit bonus with a target bonus opportunity of 35% of his base salary, payable at the discretion of the board of directors, based upon performance. Dr. Hughes is eligible to participate in our employee benefit plans generally available to our executive employees, subject to the terms of those plans.

Dennis D. Kim, M.D., M.B.A. On August 23, 2011, we entered into an offer letter with Dr. Kim for the position of Chief Medical Officer. Dr. Kim's employment has no specified term, but can be terminated at will by either party. Dr. Kim currently receives a base salary of $350,000, which is subject to review and adjustment in accordance with company policy. Dr. Kim is also eligible for an annual merit bonus with a target bonus opportunity of 30% of his base salary, payable at the discretion of the board of directors, based on performance and the business conditions at the company. Dr. Kim is eligible to participate in our employee benefit plans generally available to our executive employees, subject to the terms of those plans.

Patricia L. Allen. On December 10, 2012, we entered into an offer letter with Ms. Allen for the position of Chief Financial Officer. Ms. Allen's employment has no specified term, but can be terminated at will by either party. Ms. Allen currently receives a base salary of $275,000, which is subject to review and adjustment in

accordance with company policy. Ms. Allen is also eligible for an annual merit bonus with a target bonus opportunity of 30% of her base salary, payable at the discretion of the board of directors based on performance. Ms. Allen is also eligible to participate in our employee benefit plans generally available to our executive employees, subject to the terms of those plans.

Payments Provided Upon Death or Disability

Under the terms of Dr. Kim's offer letter, if his employment is terminated by reason of his death or disability, he is entitled to base salary and benefits continuation for two months following his death or disability.

Payments Provided Upon Termination for Good Reason or Without Cause

Pursuant to the terms of their offer letters, each of Dr. Kim and Ms. Allen is eligible to receive two months of base salary and benefits continuation in the event his or her employment is terminated by us without Cause, or he or she terminates his or her employment with Good Reason subject to execution and non-revocation of a general release of claims. "Cause" is defined as dishonesty, embezzlement, misappropriate of assets or property of the company, gross negligence, misconduct, neglect of duties, theft, fraud or breach of fiduciary duty to the company, violation of federal or state securities laws, breach of an employment or other agreement with the company, conviction of a felony or any crime involving moral turpitude or material unsatisfactory performance as determined by our board of directors. "Good Reason" is defined as a material diminution in responsibilities, authority and function, a material reduction in base salary, unless such reduction is pursuant to a salary reduction program affecting substantially all of the senior level employees of the company and does not disproportionately adversely affect him, or a material change in the geographic location at which he or she must regularly work.

In addition, under certain option agreements that we have entered into with our named executive officers, we have agreed that if the named executive officer is terminated by us other than for death or disability or cause (as defined in the respective named executive officer's employment agreement), then such executive officer will have a period to exercise his or her vested options as of the date of termination for a period of three months from the date of the termination or the expiration date of the option, whichever is earlier.

Payments Provided Upon a Change of Control

Pursuant to Dr. Hughes' offer letter, we agreed to make certain equity awards to him in the form of options to purchase common stock, and in the event of a change of control of the company, any unvested stock options will be accelerated such that 100% of the shares underlying such options which would otherwise be unvested at the time of the change of control will become vested upon the change of control. Pursuant to Ms. Allen's offer letter, we agreed to make certain equity awards to her in the form of stock options to purchase common stock, and in the event of a consummation of a change of control of the company within the first 12 months of her employment start date, 25% of the unvested stock options at the time of the change of control will become vested upon the change of control. "Change of control" is defined as the acquisition of beneficial ownership (as defined in Rule 13d-3 of the Exchange Act) directly or indirectly by any individual, corporation, partnership or any other entity or organization other than the company or its affiliates of the company's securities representing a majority or more of the voting power of the company's then outstanding securities, a merger or consolidation with any other corporation or the sale by the company of all or substantially all of its assets.

Employee Confidentiality, Non-Competition, Non-Solicitation and Assignment Agreements

Each of our named executive officers has entered into a standard form agreement with respect to confidential information and assignment of inventions. Among other things, this agreement obligates each named executive officer to refrain from disclosing any of our proprietary information received during the course of employment and to assign to us any inventions conceived or developed during the course of employment. Such agreement also provides that during the period of the named executive officer's employment and for 12 months thereafter, the named executive officer will not compete with us and will not solicit our employees, consultants, customers or suppliers.

Outstanding Equity Awards at Fiscal Year End

The following table presents the outstanding equity awards held by each of our named executive officers as of December 31, 2013.

	Option Awards			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
Thomas E. Hughes, Ph.D.	809,227(1)	—	0.12	12/15/2018
Thomas E. Hughes, Ph.D.	78,000(2)	—	0.12	3/18/2019
Thomas E. Hughes, Ph.D.	837,164	17,836(3)	0.13	3/10/2020
Thomas E. Hughes, Ph.D.	524,874	1,574,625(4)	0.39	6/12/2023
Dennis D. Kim, M.D., M.B.A.	506,250	393,750(5)	0.25	10/10/2021
Dennis D. Kim, M.D., M.B.A.	75,670	227,010(6)	0.39	6/12/2023
Patricia L. Allen	—	800,000(7)	0.39	6/12/2023

(1) Under the terms of Dr. Hughes' option agreement, the shares vested in 36 equal monthly installments beginning on October 2, 2009 and became fully vested on September 2, 2012.
(2) Under the terms of Dr. Hughes' stock option agreement, all of the shares became fully vested on March 19, 2009.
(3) Under the terms of Dr. Hughes' stock option agreement, the remaining unvested shares will vest in equal monthly installments through January 1, 2014.
(4) Under the terms of Dr. Hughes' stock option agreements, 25% of the shares vested on December 19, 2013 and the remaining unvested shares will vest in equal monthly installments through December 19, 2016.
(5) Under the terms of Dr. Kim's stock option agreement, the remaining unvested shares will vest in equal monthly installments through September 5, 2015.
(6) Under the terms of Dr. Kim's stock option agreement, 25% of the shares vested on December 19, 2013 and the remaining unvested shares will vest in equal monthly installments through December 19, 2016.
(7) Under the terms of Ms. Allen's stock option agreements, 25% of the shares vest on January 2, 2014 and the remaining unvested shares will vest in equal monthly installments through January 2, 2017.

Director Compensation

The following table sets forth a summary of the compensation we paid to our nonemployee directors during 2013. Other than as set forth in the table and described more fully below, we did not pay any compensation, reimburse any expense of, make any equity awards or non-equity awards to, or pay any other compensation to any of the other nonemployee members of our board of directors in 2013. We reimburse nonemployee directors for reasonable travel expenses. Dr. Hughes, our President and Chief Executive Officer, receives no compensation for his service as a director, and, consequently, is not included in this table. The compensation received by Dr. Hughes as an employee during 2013 is presented in the "Summary Compensation Table" above.

Name	Fees earned or paid in cash($)	Option awards($)(1)	Total($)
Peter Barrett, Ph.D.	—	—	—
Bruce Booth, Ph.D.	—	—	—
Avi Goldberg	—	—	—
Kevin P. Starr	—	—	—
Lou Tartaglia, Ph.D.	—	—	—
John L. LaMattina, Ph.D.	—	57,460	57,460

(1) Amounts represent the aggregate grant-date fair value of option awards granted to our directors in 2013 computed in accordance with FASB ASC Topic 718. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our consolidated financial statements and discussions in "Management's Discussion and Analysis of Financial Condition and Result of Operations."

included elsewhere in this prospectus. The amounts above reflect our aggregate accounting expense for these awards and do not necessarily correspond to the actual value that will be recognized by the directors.

Our board of directors plans on adopting a nonemployee director compensation policy, that will be effective as of the completion of this offering, that is designed to provide a total compensation package that enables us to attract and retain, on a long-term basis, high caliber nonemployee directors. Under the policy, all nonemployee directors will be paid cash compensation from and after the completion of this offering, as set forth below:

	Annual Retainer
Board of Directors:	
All nonemployee members	$
Additional retainer for Non-Executive Chairman of the Board	$
Audit Committee:	
Chairman	$
Non-Chairman members	$
Compensation Committee:	
Chairman	$
Non-Chairman members	$
Nominating and Corporate Governance Committee:	
Chairman	$
Non-Chairman members	$

Under the nonemployee director compensation policy, each person who is initially appointed or elected to the board of directors will be eligible for an option grant to purchase up to shares of our common stock under our stock option plan on the date he or she first becomes a nonemployee director, which will vest annually over a period. In addition, on the date of the annual meeting of stockholders, each continuing non-employee director who has served on the board of directors for a minimum of six months will be eligible to receive an annual option grant to purchase up to shares of our common stock, which will vest in full upon the earlier of the first anniversary of the date of grant or the date of the following annual meeting of stockholders. All of the foregoing options will be granted at fair market value on the date of grant.

Compensation Risk Assessment

We believe that although a portion of the compensation provided to our executive officers and other employees is performance-based, our executive compensation program does not encourage excessive or unnecessary risk-taking. This is primarily due to the fact that our compensation programs are designed to encourage our executive officers and other employees to remain focused on both short-term and long-term strategic goals, in particular in connection with our pay-for-performance compensation philosophy. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on the company.

Stock Option Plans

2006 Stock Option Plan

The Amended and Restated 2006 Stock Option Plan, or 2006 Stock Option Plan, was approved by our board of directors and our stockholders on February 1, 2006 and was most recently amended on April 26, 2013. Under the 2006 Stock Option Plan, 10,863,864 shares of common stock have been reserved for issuance in the form of incentive stock options, non-qualified stock options, restricted stock, unrestricted stock or any combination of the foregoing. The shares issuable pursuant to awards granted under the 2006 Plan are authorized but unissued shares.

The 2006 Stock Option Plan is administered by our board of directors, which has full power to select the employees, directors and service providers to whom awards will be granted and to determine the specific terms and conditions of each award, subject to the provisions of the 2006 Stock Option Plan.

The option exercise price of each option granted under the 2006 Stock Option Plan is determined by our board of directors and may not be less than the fair market value of a share of common stock on the date of grant. The term of each option is fixed by the board of directors and may not exceed ten years from the date of grant. The board of directors determines at what time or times each option may be exercised when granting the option.

The 2006 Stock Option Plan provides that, upon a sale transaction of the company, unless provision is made in connection with the sale transaction in the sole discretion of the parties thereto for the assumption or continuation of the awards by the successor entity or substitution of the awards with new awards of the successor entity, with appropriate adjustment, all options not exercised will terminate upon the closing of the sale transaction.

Our board of directors may amend the 2006 Stock Option Plan but no such action may adversely affect the rights of an award holder without such holder's consent. Approval by our stockholders of amendments to the 2006 Stock Option Plan must be obtained if required by law.

As of December 31, 2013, options to purchase 8,228,975 shares of common stock were outstanding under the 2006 Stock Option Plan. Our board of directors has determined not to make any further awards under the 2006 Stock Option Plan following the completion of this offering.

2014 Stock Option Plan

On , 2014, our board of directors adopted and thereafter our stockholders approved our 2014 Stock Option and Incentive Plan, or 2014 Stock Option Plan, which will become effective upon completing of this offering and will replace the 2006 Stock Option Plan. Our 2014 Stock Option Plan provides us flexibility to use various equity-based incentive and other awards as compensation tools to motivate our workforce. These tools include stock options, stock appreciation rights, restricted stock, restricted stock units, unrestricted stock, performance share awards and cash-based awards. The 2014 Stock Option Plan will become effective immediately prior to the completion of this offering.

We have initially reserved shares of common stock for the issuance of awards under the 2014 Stock Option Plan (including shares of common stock reserved for issuance under our 2006 Stock Option Plan, which will be added to the shares reserved under the 2014 Stock Option Plan), which will be cumulatively increased by % of the number of shares of common stock issued and outstanding on the immediately preceding December 31. This number is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares issuable pursuant to awards granted under the 2014 Stock Option Plan will be authorized but unissued shares or shares that we reacquire. The shares of common stock underlying any awards from the 2014 Stock Option Plan and the 2006 Stock Option Plan that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without any issuance of common stock, expire or are otherwise terminated (other than by exercise) under the 2014 Stock Option Plan will be added back to the shares available for issuance under the 2014 Stock Option Plan.

Under the 2014 Stock Option Plan, stock options or stock appreciation rights with respect to no more than shares may be granted to any one individual in any one calendar year and the maximum aggregate number of shares that may be issued in the form of incentive stock options shall not exceed the initial number of shares reserved and available for issuance under the 2014 Stock Option Plan.

The 2014 Stock Option Plan will be administered by the compensation committee of the board of directors. The compensation committee has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, to make any combination of awards to participants, and to determine the specific terms and conditions of each award, subject to the provisions of the 2014 Stock Option Plan. Employees, nonemployee directors and other key persons (including consultants) are eligible to receive awards under the 2014 Stock Option Plan.

The 2014 Stock Option Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code and options that do not so qualify. The exercise price of each stock option will be determined by our compensation committee but may not be less than 100% of the fair market value of our common stock on the date of grant or, in the case of an incentive stock option granted to a 10% owner, less than 110% of the fair market value of our common stock on the date of grant. The term of each stock option will be fixed by the compensation committee and may not exceed ten years from the date of grant (or five years in the case of an incentive stock option granted to a 10% owner). The compensation committee will also determine vesting schedule for granted stock options.

The compensation committee may award stock appreciation rights subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock, or cash, equal to the value of the appreciation in our stock price over the exercise price. The exercise price of each stock appreciation right may not be less than 100% of the fair market value of the common stock on the date of grant.

The compensation committee may award restricted stock or restricted stock units to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or continued employment or service with us through a specified vesting period. The compensation committee may also grant cash-based awards to participants subject to such conditions and restrictions as it may determine. Our compensation committee may also grant shares of common stock that are free from any restrictions under the 2014 Stock Option Plan. Unrestricted stock may be granted to participants in recognition of past services or for other valid consideration and may be issued in lieu of cash compensation due to such participant.

The compensation committee may grant performance share awards to participants that entitle the recipient to receive share awards of common stock upon the achievement of certain performance goals and such other conditions as our compensation committee shall determine.

The compensation committee may grant cash bonuses under the 2014 Stock Option Plan to participants, subject to the achievement of certain performance goals.

The compensation committee may grant performance-based awards to participants in the form of restricted stock, restricted stock units, performance shares or cash-based awards upon the achievement of certain performance goals and such other conditions as the compensation committee shall determine. The compensation committee may grant such performance-based awards under the 2014 Stock Option Plan that are intended to qualify as "performance-based compensation" under Section 162(m) of the Code. Those awards would only vest or become payable upon the attainment of performance goals that are established by our compensation committee and related to one or more performance criteria. The performance criteria that could be used with respect to any such awards include: total shareholder return, earnings before interest, taxes, depreciation and amortization, net income (loss) (either before or after interest, taxes, depreciation and/or amortization), changes in the market price of our common stock, economic value-added, sales or revenue, development, clinical or regulatory milestones, acquisitions or strategic transactions, operating income (loss), cash flow (including, but not limited to, operating cash flow and free cash flow), return on capital, assets, equity, or investment, return on sales, gross or net profit levels, productivity, expense, margins, operating efficiency, customer satisfaction, working capital, earnings (loss) per share of stock, sales or market shares and number of customers, any of which may be measured either in absolute terms or as compared to any incremental increase or as compared to results of a peer group. From and after the time that we become subject to Section 162(m) of the Code, the maximum award that is intended to qualify as "performance-based compensation" under Section 162(m) of the Code that may be made to any one employee during any one calendar year period is shares with respect to a stock-based award and $ with respect to a cash-based award.

The 2014 Stock Option Plan provides that upon the effectiveness of a "sale event," as defined in the 2014 Stock Option Plan, all options and stock appreciation rights that are not exercisable immediately prior to the

effective time of the sale event shall become fully exercisable as of the effective time of the sale event, all other awards with time-based vesting, conditions or restrictions, shall become fully vested and nonforfeitable as of the effective time of the sale event and all awards with conditions and restrictions relating to the attainment of performance goals may become vested and nonforfeitable in the discretion of the compensation committee and all awards granted under the 2014 Stock Option Plan shall terminate. In addition, in connection with the termination of the 2014 Stock Option Plan upon a sale event, we may make or provide for a cash payment to participants holding options and stock appreciation rights equal to the difference between the per share cash consideration payable to stockholders in the sale event and the exercise price of the options or stock appreciation rights.

Our board of directors may amend or discontinue the 2014 Stock Option Plan and our compensation committee may amend or cancel outstanding awards for purposes of satisfying changes in law or any other lawful purpose, including option repricing, but no such action may adversely affect rights under an award without the holder's consent. Certain amendments to the 2014 Stock Option Plan may require the approval of our stockholders.

No awards may be granted under the 2014 Stock Option Plan after the date that is ten years from the date of stockholder approval of the 2014 Stock Option Plan.

Senior Executive Cash Incentive Bonus Plan

On , 2014, our board of directors adopted the Senior Executive Cash Incentive Bonus Plan, or the Bonus Plan, which will become effective upon completion of this offering. The Bonus Plan provides for cash bonus payments based upon the attainment of performance targets established by our compensation committee. The payment targets will be related to corporate, financial and operational measures or objectives, or Corporate Performance Goals, as well as individual performance objectives.

Our compensation committee may select Corporate Performance Goals from among the following: cash flow (including, but not limited to, operating cash flow and free cash flow); sales or revenue; corporate revenue; earnings before interest, taxes, depreciation and amortization; net income (loss) (either before or after interest, taxes, depreciation and/or amortization); changes in the market price of our common stock; economic value-added; development, clinical or regulatory milestones; acquisitions or strategic transactions; operating income (loss); return on capital, assets, equity, or investment; stockholder returns; return on sales; gross or net profit levels; productivity; expense efficiency; margins; operating efficiency; customer satisfaction; working capital; earnings (loss) per share of our common stock; bookings, new bookings or renewals; sales or market shares; number of customers; number of new customers or customer references; operating income and/or net annual recurring revenue, any of which may be measured in absolute terms, as compared to any incremental increase, in terms of growth, as compared to results of a peer group, against the market as a whole, compared to applicable market indices and/or measured on a pre-tax or post-tax basis.

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation committee and communicated to each executive. The Corporate Performance Goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the Corporate Performance Goals and individual performance objectives are met, payments will be made as soon as practicable following the end of each performance period. Subject to the rights contained in any agreement between the executive officer and the company, an executive officer must be employed by the company on the bonus payment date to be eligible to receive a bonus payment. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion.

Simple IRA

In 2009, we established a Savings Incentive Match Plan for employees. Under the terms of the plan, we contribute 2% of an employee's annual base salary, up to a maximum of the annual Internal Revenue Service compensation limits, for all full-time employees.

Other Compensation

We currently maintain broad-based benefits that are provided to all employees, including health insurance, life and disability insurance and dental insurance.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Other than compensation arrangements, we describe below the transactions, and series of similar transactions, since January 1, 2011, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

In connection with this offering, we plan to adopt a written policy, effective upon completion of this offering, that requires all future transactions between us and any director, executive officer, holder of 5% or more of any class of our capital stock or any member of the immediate family of, or entities affiliated with, any of them, or any other related persons (as defined in Item 404 of Regulation S-K) or their affiliates, in which the amount involved is equal to or greater than $120,000, be approved in advance by our audit committee. Any request for such a transaction must first be presented to our audit committee for review, consideration and approval. In approving or rejecting any such proposal, our audit committee is to consider the relevant facts and circumstances available and deemed relevant to the audit committee, including, but not limited to, the extent of the related party's interest in the transaction, and whether the transaction is on terms no less favorable to us than terms we could have generally obtained from an unaffiliated third party under the same or similar circumstances.

All of the transactions described below were entered into prior to the adoption of this written policy but each was approved by our board of directors. Prior to our board of directors' consideration of a transaction with a related person, the material facts as to the related person's relationship or interest in the transaction were disclosed to our board of directors, and the transaction was not approved by our board of directors unless a majority of the directors approved the transaction. Our current policy with respect to approval of related person transactions is not set forth in writing.

Private Placements of Securities

Series C Financing

On June 30, 2011, we entered into a securities purchase agreement, as amended, with TRV, Atlas and certain other existing investors of the company pursuant to which we issued, in a series of closings, an aggregate of 16,732,284 shares of our Series C redeemable convertible preferred stock at a price of $0.90610 per share.

The following table summarizes the participation in the Series C redeemable convertible preferred stock financing by any of our directors, executive officers, holders of more than 5% of our voting securities, or any member of the immediate family of the foregoing persons.

Name	Shares of Series C Preferred	Aggregate Purchase Price Paid	Date Purchased
Atlas Venture Fund VII, L.P.	3,310,892	$ 2,999,999	6/30/2011
Atlas Venture Fund VII, L.P.	1,103,630	$ 999,999	12/1/2011
Atlas Venture Fund VII, L.P.	3,849,073	$ 3,487,645	2/1/2012
Third Rock Ventures, L.P.	3,310,892	$ 2,999,999	6/30/2011
Third Rock Ventures, L.P.	1,103,630	$ 999,999	12/1/2011
Third Rock Ventures, L.P.	3,849,073	$ 3,487,645	2/1/2012

August 2012 Convertible Note Financing

On August 13, 2012, we entered into a note purchase agreement pursuant to which we issued promissory notes, in two closings, for an aggregate principal amount of $6,000,000 to TRV and Atlas, which were convertible, under certain circumstances, into shares of the company' stock issued in the next qualified financing round. The promissory notes incurred interest at a rate of 8% per annum.

The following table summarizes the participation in the convertible promissory note financing by any of our directors, executive officers, holders of more than 5% of our voting securities, or any member of the immediate family of the foregoing persons.

Name	Convertible Promissory Note Principal Amount	Date Purchased
Atlas Venture Fund VII, L.P.	$ 1,500,000	8/13/2012
Atlas Venture Fund VII, L.P.	$ 1,500,000	11/8/2012
Third Rock Ventures, L.P.	$ 1,500,000	8/13/2012
Third Rock Ventures, L.P.	$ 1,500,000	11/8/2012

On November 30, 2012, the principal and accrued interest of these convertible promissory notes were converted, in accordance with their terms and at their respective conversion prices, into shares of Series D redeemable convertible preferred stock, and following such conversion, the notes were cancelled.

Series D Financing

On November 30, 2012, we entered into a securities purchase agreement with TRV, Atlas and certain other investors pursuant to which we agreed to issue, in a series of closings, up to an aggregate of 16,011,162 shares of our Series D redeemable convertible preferred stock at a price of $1.3592 per share for shares purchased for cash and $1.22328 for shares issued upon conversion of convertible promissory notes and interest accrued thereon.

The following table summarizes the participation in the Series D redeemable convertible preferred stock financing by any of our directors, executive officers, holders of more than 5% of our voting securities, or any member of the immediate family of the foregoing persons.

Name	Shares of Series D Preferred	Aggregate Purchase Price Paid	Date Purchased
Atlas Venture Fund VII, L.P.	2,487,630	$ 3,043,068	11/30/2012
Atlas Venture Fund VII, L.P.	2,203,066	$ 2,994,407	1/11/2013
Third Rock Ventures, L.P.	2,487,630	$ 3,043,068	11/30/2012
Third Rock Ventures, L.P.	2,178,848	$ 2,961,491	1/11/2013
Alta Partners VIII, L.P.	6,621,542	$ 9,000,000	11/30/2012

Series E Financing

On November 25, 2013, we entered into a securities purchase agreement with TRV, Atlas, Alta, Fidelity, and certain other investors pursuant to which we agreed to issue, in a series of closings, up to an aggregate of 20,919,679 shares of our Series E redeemable convertible preferred stock at a price of $2.1725 per share.

The following table summarizes the participation in the Series E redeemable convertible preferred stock financing by any of our directors, executive officers, holders of more than 5% of our voting securities, or any member of the immediate family of the foregoing persons.

Name	Shares of Series E Preferred	Aggregate Purchase Price Paid	Date Purchased
Alta Partners VIII, L.P.	690,449	$ 1,500,000	11/25/2013
Entities Affiliated with Fidelity Investment	5,983,890	$ 13,000,000	11/25/2013

Agreements with Stockholders

In connection with the Series E redeemable convertible preferred stock financing, we entered into the Third Amended and Restated Investors' Rights Agreement, or investor rights agreement, dated as of November 25, 2013, with certain of our stockholders, including our principal stockholders and their affiliates, the Third

Amended and Restated Voting Agreement, dated as of November 25, 2013, with certain of our stockholders, including our principal stockholders and their affiliates, and the Third Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 25, 2013, with certain of our stockholders, including our principal stockholders and their affiliates. All of the provisions of these agreements will terminate immediately upon completion of the offering, other than the provisions relating to registration rights, which will continue in effect following completion of the offering and entitle the holders of such rights to have us register their shares of our common stock for sale in the United States. See "Description of Capital Stock—Registration Rights."

Executive Officer and Director Compensation

See "Executive and Director Compensation" for information regarding compensation of directors and executive officers.

Employment Agreements

We have entered into offer letters or employment agreements with our executive officers. For more information regarding our agreements with our named executive officers for the fiscal year ended 2013, see "Executive and Director Compensation—Narrative to Summary Compensation Table—Employment Arrangements with Our Named Executive Officers."

Indemnification Agreements

We have entered into or plan to enter into indemnification agreements with each of our directors and officers, the form of which is attached as an exhibit to the registration statement of which this prospectus is a part. The indemnification agreements and our amended and restated certificate of incorporation and amended and restated by-laws require us to indemnify our directors and officers to the fullest extent permitted by Delaware law.

PRINCIPAL STOCKHOLDERS

The following table presents information concerning the beneficial ownership of the shares of our common stock as of February 28, 2014 by:

- each person we know to be the beneficial owner of 5% or more of our outstanding shares of our capital stock;
- each of our directors;
- each of our named executive officers; and
- all of our executive officers and directors as a group.

We have determined beneficial ownership in accordance with SEC rules. The information does not necessarily indicate beneficial ownership for any other purpose. Under these rules, a person is deemed to be a beneficial owner of our common stock if that person has a right to acquire ownership within 60 days by the exercise of vested options or the conversion of our redeemable convertible preferred stock. A person is also deemed to be a beneficial holder of our common stock if that person has or shares voting power, which includes the power to vote or direct the voting of our common stock, or investment power, which includes the power to dispose of or to direct the disposition of such capital stock. Except in cases where community property laws apply or as indicated in the footnotes to this table, we believe that each stockholder identified in the table possesses sole voting and investment power over all shares of common stock shown as beneficially owned by the stockholder.

Percentage of beneficial ownership in the table below is based on 99,268,174 shares of common stock deemed to be outstanding as of February 28, 2014, assuming the conversion of all outstanding shares of redeemable convertible preferred stock into common stock, and shares of common stock outstanding after the completion of this offering. The table below assumes that the underwriters do not exercise their over-allotment option. If the over-allotment option is exercised in full, we will sell an aggregate of additional shares of common stock. Shares of common stock subject to options that are currently exercisable or exercisable within 60 days of February 28, 2014 are considered outstanding and beneficially owned by the person holding the options for the purpose of computing the percentage ownership of that person but are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless indicated below, the address of each individual listed below is c/o Zafgen, Inc., One Broadway, 8 th Floor, Cambridge, MA 02142.

	Shares beneficially owned prior to offering		Shares beneficially owned after the offering	
Name and address of beneficial owner (1)	Number	Percent	Number	Percent
5% Stockholders				
Atlas Venture Fund VII, L.P. (2)	35,373,545	35.6%		
Third Rock Ventures, L.P. (3)	35,180,843	35.4%		
Alta Partners VIII, L.P. (4)	7,311,991	7.4%		
Entities Affiliated with Fidelity Investment (5)	5,983,890	6.0%		
Named Executive Officers and Directors				
Thomas E. Hughes, Ph.D. (6)	2,663,456	2.6%		
Named Executive Officers				
Dennis D. Kim, M.D., M.B.A. (7)	682,143	*		
Patricia L. Allen (8)	250,000	*		
Other Directors				
Peter Barrett, Ph.D. (9)	35,373,545	35.6%		
Bruce Booth, Ph.D. (10)	35,373,545	35.6%		
Avi Goldberg (11)	2,183,194	2.2%		
Kevin P. Starr (12)	50,921	*		
Lou Tartaglia, Ph.D. (13)	—	—		
All directors and executive officers as a group (8 persons) (14)	41,203,259	40.1%		

* Indicates beneficial ownership of less than one percent.

(1) Unless otherwise indicated, the address for each beneficial owner is c/o Zafgen, Inc., One Broadway, 8th Floor, Cambridge, Massachusetts 02142.

(2) The address for Atlas Venture Fund VII, L.P., or Atlas Venture VII, is 25 First Street, Suite 303, Cambridge, MA 02141. Consists of (i) 4,768,001 shares of common stock issuable upon conversion of shares of Series A redeemable convertible preferred stock, (ii) 17,651,253 shares of common stock issuable upon conversion of shares of Series B redeemable convertible preferred stock, (iii) 8,263,595 shares of common stock issuable upon conversion of shares of Series C redeemable convertible preferred stock and (iv) 4,690,696 shares of common stock issuable upon conversion of shares of Series D redeemable convertible preferred stock. All shares are held directly by Atlas Venture VII. Atlas Venture Associates VII, L.P., or AVA VII LP, is the general partner of Atlas Venture VII, and Atlas Venture Associates VII, Inc., or AVA VII Inc., is the general partner of AVA VII LP. Peter Barrett, Jean-Francois Formela and Jeff Fagnan is each a director of AVA VII Inc. Drs. Booth and Barrett are members of our board of directors. Each of the reporting persons disclaims beneficial ownership of such shares, except to the extent of their proportionate pecuniary interest therein, if any.

(3) The address for Third Rock Ventures, L.P., or TRV LP, is 29 Newbury Street, 3rd Floor, Boston, MA 02116. Consists of (i) 22,250,770 shares of common stock issuable upon conversion of shares of Series B redeemable convertible preferred stock, (ii) 8,263,595 shares of common stock issuable upon conversion of shares of Series C redeemable convertible preferred stock and (iii) 4,666,478 shares of common stock issuable upon conversion of shares of Series D redeemable convertible preferred stock. All shares are held directly by TRV LP. Each of Third Rock Ventures GP, LP, or TRV GP, the general partner of TRV LP, and Third Rock Ventures GP, LLC, or TRV LLC, the general partner of TRV GP, may be deemed to have voting and dispositive power over the shares held by TRV LP. Investment decisions with respect to the shares held by TRV LP are made by an investment committee at TRV GP comprised of Mark Levin, Kevin Starr, Bob Tepper, Neil Exter, Kevin Gillis, Lou Tartaglia, Craig Muir, Cary Pfeffer, Alexis Borisy and Craig Greaves. No stockholder, director, officer, manager, member or employee of TRV GP or TRV LLC has beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of any shares held by TRV LP. Dr. Tartaglia and Mr. Starr are members of our board of directors.

(4) The address for Alta Partners VIII, L.P. is One Embarcadero Center, 37th Floor, San Francisco, CA 94111. Consists of (i) 6,621,542 shares of common stock issuable upon conversion of shares of Series D redeemable convertible preferred stock and (ii) 690,449 shares of common stock issuable upon conversion of shares of Series E redeemable convertible preferred stock. These shares are held of record by Alta Partners VIII, L.P. Alta Partners Management VIII, LLC is the general partner of Alta Partners VIII, L.P. Guy Nohra, Daniel Janney and Farah Champsi are managing directors of Alta Partners Management VIII, LLC and exercise shared voting and investment powers with respect to the shares owned by Alta Partners VIII, L.P. Each of the reporting persons disclaims beneficial ownership of such shares, except to the extent of their proportionate pecuniary interest therein, if any.

(5) Fidelity Management & Research Company, or Fidelity, 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of shares of common stock as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940. Consists of (i) 5,172,990 shares of common stock issuable upon conversion of shares of Series E redeemable convertible preferred stock held by Fidelity Select Portfolios: Biotech Portfolio, and (ii) 810,900 shares of common stock issuable upon conversion of shares of Series E redeemable convertible preferred stock held by Fidelity Advisor Series VII: Fidelity Advisor Biotech Fund. Edward C. Johnson 3d and FMR LLC, through its control of Fidelity, and the funds each has sole power to dispose of the shares owned by the Funds. Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting

common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity Funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees.

(6) Consists of 221,396 shares of common stock and 2,442,060 shares of common stock issuable upon exercise of options within 60 days of February 28, 2014.

(7) Consists of 682,143 shares of common stock issuable upon exercise of options within 60 days of February 28, 2014.

(8) Consists of 250,000 shares of common stock issuable upon exercise of options within 60 days of February 28, 2014.

(9) Consists of the shares described in note (2) above. Dr. Barrett is a general partner of Atlas Venture Fund VII, L.P., and as such Dr. Barrett may be deemed to share voting and dispositive power with respect to all shares held by such entity. Dr. Barrett disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Barrett's business address is 25 First Street, Suite 303, Cambridge, MA 02141.

(10) Consists of the shares described in note (2) above. Dr. Booth is a general partner of Atlas Venture Fund VII, L.P., and as such Dr. Booth may be deemed to share voting and dispositive power with respect to all shares held by such entity. Dr. Booth disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Booth's business address is 25 First Street, Suite 303, Cambridge, MA 02141.

(11) Consists of 2,183,194 shares of common stock held by Greatpoint Ventures Fund I, LLC, or GPV. Mr. Goldberg is a partner at GPV and as such Mr. Goldberg may be deemed to share voting and dispositive power with respect to all shares held by GPV. Mr. Goldberg disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Mr. Goldberg's business address is 71 Summer Street, 4th floor, Boston, MA 02110.

(12) Consists of 50,921 shares of common stock Mr. Starr holds in his individual capacity. Investment decisions with respect to the shares held by TRV LP are made by an investment committee at TRV GP comprised of Mark Levin, Kevin Starr, Bob Tepper, Neil Exter, Kevin Gillis, Lou Tartaglia, Craig Muir, Cary Pfeffer, Alexis Borisy and Craig Greaves. No stockholder, director, officer, manager, member or employee of TRV GP or TRV LLC has beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of any shares held by TRV LP.

(13) Investment decisions with respect to the shares held by TRV LP are made by an investment committee at TRV GP comprised of Mark Levin, Kevin Starr, Bob Tepper, Neil Exter, Kevin Gillis, Lou Tartaglia, Craig Muir, Cary Pfeffer, Alexis Borisy and Craig Greaves. No stockholder, director, officer, manager, member or employee of TRV GP or TRV LLC has beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of any shares held by TRV LP.

(14) Includes 3,117,816 shares of common stock issuable upon exercise of options within 60 days of December 1, 2013.

DESCRIPTION OF CAPITAL STOCK

Upon the completion of this offering, our authorized capital stock will consist of shares of common stock, par value $0.001 per share, and shares of preferred stock, par value $0.001 per share, all of which will be undesignated, and there will be shares of common stock outstanding and no shares of preferred stock outstanding. As of February 28, 2014, we had approximately record holders of our capital stock. All of our outstanding shares of redeemable convertible preferred stock will automatically convert into shares of our common stock upon the completion of this offering. In addition, upon completion of this offering, options to purchase shares of our common stock will be outstanding and shares of our common stock will be reserved for future grants under our stock option plans.

The following description of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated by-laws are summaries of material terms and provisions and are qualified by reference to our amended and restated certificate of incorporation and amended and restated by-laws, copies of which have been filed with the SEC as exhibits to the registration statement of which this prospectus is a part. The descriptions of our common stock and preferred stock reflect amendments to our amended and restated certificate of incorporation and amended and restated by-laws that will become effective immediately prior to the completion of this offering.

Common Stock

Upon the completion of this offering, we will be authorized to issue one class of common stock. Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. Except as described under “Antitakeover Effects of Delaware Law and Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws” below, a majority vote of the holders of common stock is generally required to take action under our amended and restated certificate of incorporation and amended and restated by-laws.

Preferred Stock

Upon the completion of this offering, our board of directors will be authorized, without action by the stockholders, to designate and issue up to an aggregate of shares of preferred stock in one or more series. Our board of directors can designate the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of restricting dividends on our common stock, diluting the voting power of our common stock, impairing the liquidation rights of our common stock, or delaying, deferring or preventing a change in control of our company, which might harm the market price of our common stock. See also “Antitakeover Effects of Delaware Law and Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws—Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws—Undesignated preferred stock” below.

Our board of directors will make any determination to issue such shares based on its judgment as to our company's best interests and the best interests of our stockholders. Upon the completion of this offering, we will have no shares of preferred stock outstanding and we have no current plans to issue any shares of preferred stock following completion of this offering.

Registration Rights

Upon the completion of this offering, the holders of 95,029,181 shares of our common stock, including shares issuable upon the conversion of our redeemable convertible preferred stock or their permitted transferees, are entitled to rights with respect to the registration of these securities under the Securities Act. These rights are provided under the terms of an investor rights agreement between us and the holders of our redeemable convertible preferred stock. The investor rights agreement includes demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations under the investor rights agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

Demand Registration Rights

Upon the completion of this offering, the holders of 95,029,181 shares of our common stock, including shares issuable upon the conversion of our redeemable convertible preferred stock or their permitted transferees, are entitled to demand registration rights. Under the terms of the investor rights agreement, we will be required, upon the written request of holders of 70% of these securities, to use our best efforts to file a registration statement and use reasonable, diligent efforts to affect the registration of all or a portion of these shares for public resale. We are required to effect only one registration pursuant to this provision of the investor rights agreement. A demand for registration may not be made until 180 days after the completion of this offering.

Short Form Registration Rights

Upon the completion of this offering, the holders of 95,029,181 shares of our common stock, including shares issuable upon the conversion of our redeemable convertible preferred stock or their permitted transferees, are also entitled to short form registration rights. Pursuant to the investor rights agreement, if we are eligible to file a registration statement on Form S-3, upon the request of 10% of these holders to sell registrable securities at an aggregate price of at least $500,000, we will be required to use our best efforts to affect a registration of such shares. We are required to effect only one registration in any twelve month period pursuant to this provision of the investor rights agreement.

Piggyback Registration Rights

The holders of 95,029,181 shares of our common stock, including shares issuable upon the conversion of our redeemable convertible preferred stock or their permitted transferees, are entitled to piggyback registration rights. If we register any of our securities either for our own account or for the account of other security holders, the holders of these shares are entitled to include their shares in the registration. Subject to certain exceptions contained in the investor rights agreement, we and the underwriters may limit the number of shares included in the underwritten offering if the underwriters determine in good faith that marketing factors require a limitation of the number of shares to be underwritten.

Indemnification

Our investor rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of Registration Rights

The registration rights granted under the investor rights agreement will terminate upon the earlier of (i) a deemed liquidation event, as defined in our amended and restated certificate of incorporation or (ii) at such time when all registrable securities could be sold without restriction under Rule 144 of the Securities Act.

Antitakeover Effects of Delaware Law and Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws

Certain provisions of the Delaware General Corporation Law and of our amended and restated certificate of incorporation and amended and restated by-laws that will become effective upon the completion of this offering could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Delaware Takeover Statute

Upon completion of this offering, we will be subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge, exchange, mortgage or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws

Our amended and restated certificate of incorporation and amended and restated by-laws to be in effect upon completion of this offering will include a number of provisions that may have the effect of delaying, deferring or discouraging another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board composition and filling vacancies. In accordance with our amended and restated certificate of incorporation, our board is divided into three classes serving staggered three-year terms, with one class being elected each year. Our amended and restated certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No written consent of stockholders. Our amended and restated certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our by-laws or removal of directors by our stockholder without holding a meeting of stockholders.

Meetings of stockholders. Our amended and restated by-laws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our amended and restated by-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance notice requirements. Our amended and restated by-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in our amended and restated by-laws.

Amendment to certificate of incorporation and by-laws. As required by the Delaware General Corporation Law, any amendment of our amended and restated certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our amended and restated certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that

the amendment of the provisions relating to stockholder action, directors, limitation of liability and the amendment of our amended and restated certificate of incorporation must be approved by not less than 75% of the outstanding shares entitled to vote on the amendment, and not less than 75% of the outstanding shares of each class entitled to vote thereon as a class. Our amended and restated by-laws may be amended by the affirmative vote of a majority vote of the directors then in office, subject to any limitations set forth in the amended and restated by-laws; and may also be amended by the affirmative vote of at least 75% of the outstanding shares entitled to vote on the amendment, or, if the board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Undesignated preferred stock. Our amended and restated certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is . The transfer agent and registrar's address is .

Listing

We have applied to list our common stock on the NASDAQ Global Market under the symbol "ZFGN."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based on the number of shares of common stock outstanding as of February 28, 2014, upon completion of this offering, shares of common stock will be outstanding, assuming no exercise of the underwriter's over-allotment option and no exercise of options. All of the shares sold in this offering will be freely tradable. The remaining shares of common stock outstanding after this offering will be restricted as a result of securities laws or lock-up agreements as described below. Following the expiration of the lock-up period, all shares will be eligible for resale in compliance with Rule 144 or Rule 701 under the Securities Act. "Restricted securities" as defined under Rule 144 of the Securities Act were issued and sold by us in reliance on exemptions from the registration requirements of the Securities Act. These shares may be sold in the public market only if registered or qualified for an exemption from registration, such as under Rule 144 or Rule 701 under the Securities Act.

Rule 144

In general, under Rule 144 under the Securities Act of 1933, as in effect on the date of this prospectus, a person who is one of our affiliates and has beneficially owned shares of our common stock for at least six months would be entitled to sell within any three-month period a number of shares that does not exceed the greater of:

- one percent of the number of shares of common stock then outstanding, which will equal approximately shares immediately after the completion of this offering; or
- the average weekly trading volume of our common stock on the NASDAQ Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to manner of sale provisions and notice requirements and to the availability of current public information about us. For a person who has not been deemed to have been one of our affiliates at any time during the 90 days preceding a sale, sales of our securities held longer than six months, but less than one year, will be subject only to the current public information requirement.

In general, under Rule 144 under the Securities Act, as in effect on the date of this prospectus, a person who is not deemed to have been one of our affiliates at any time during the 90 days preceding a sale, and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than an affiliate, is entitled to sell the shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, and will be subject only to the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell such shares without complying with any of the requirements of Rule 144. shares of our common stock will qualify for resale under Rule 144 within 180 days of the date of this prospectus, subject to the lock-up agreements as described under "Lock-up Agreements" below and under "Underwriting" in this prospectus, and to the extent such shares have been released from any repurchase option that we may hold.

Rule 701

Rule 701 under the Securities Act, or Rule 701, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the

holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" included elsewhere in this prospectus and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Lock-up Agreements

In connection with this offering, we, each of our directors and executive officers, and holders holding shares of our outstanding stock have agreed that, subject to limited exceptions, which include:

- sales of securities acquired in open market transactions after the completion of this offering,
- transfers of securities (i) as a bona fide gift or gifts or (ii) by will or intestacy to the legal representative, heir, beneficiary or a member of the immediate family of the undersigned in a transaction not involving a disposition for value,
- if the holder is an individual, transfers of shares of our common stock or any security convertible into our common stock to any trust for the benefit of the holder or the immediate family of the undersigned, or limited partnerships the partners of which are the holder and/or the immediate family members of the holder, in each case for estate planning purposes,
- if the holder is a trust, distributions of shares of our common stock or any security convertible into our common stock to its beneficiaries in a transaction not involving a disposition for value,
- if the holder is a corporation, limited liability company, partnership or other entity, distribution of shares of our common stock or any security convertible into our common stock to members, stockholders, limited partners, subsidiaries or affiliates (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the holder or to any investment fund or other entity that controls or manages the holder in a transaction not involving a disposition for value,
- the receipt by the holder of shares of our common stock in connection with the conversion of our outstanding preferred stock into shares of our common stock,
- transfers to us pursuant to agreements under which we have the option to repurchase such shares or securities upon termination of service of the holder,
- the receipt by the holder from us of shares of our common stock upon the exercise of options, and
- the establishment of a trading plan that satisfies the requirements of Rule 10b5-1 under the Exchange Act for the transfer of shares of our common stock,

without the prior written consent of Leerink Partners LLC and Cowen and Company, LLC on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or publicly disclose the intention to make any offer, sale, pledge or disposition, (2) enter into any swap or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock or such other securities, whether any such transaction is to be settled by delivery of our common stock or such other securities, in cash or otherwise or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock.

Registration Rights

We are party to an investor rights agreement which provides that holders holding shares of our redeemable convertible preferred stock have the right to demand that we file a registration statement or request that their shares of our common stock be covered by a registration statement that we are otherwise filing. See "Description of Capital Stock—Registration Rights" in this prospectus. Except for shares purchased by affiliates, registration of their shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon effectiveness of the registration, subject to the expiration of the lock-up period described above and under "Underwriting" in this prospectus, and to the extent such shares have been released from any repurchase option that we may hold.

Stock Option Plan

As soon as practicable after the completion of this offering, we intend to file a Form S-8 registration statement under the Securities Act to register shares of our common stock subject to options outstanding or reserved for issuance under our stock plans. This registration statement will become effective immediately upon filing, and shares covered by this registration statement will thereupon be eligible for sale in the public markets, subject to Rule 144 limitations applicable to affiliates and any lock-up agreements. For a more complete discussion of our stock plans, see "Executive and Director Compensation —Stock Option Plans."

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS TO NON-U.S. HOLDERS

The following is a general discussion of certain material U.S. federal income and estate tax considerations relating to ownership and disposition of our common stock by a non-U.S. holder. For purposes of this discussion, the term "non-U.S. holder" means a beneficial owner of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or of any political subdivision of the United States;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons (as defined in the Code) have authority to control all substantial decisions of the trust or if the trust has a valid election in effect to be treated as a U.S. person under applicable U.S. Treasury Regulations.

A modified definition of "non-U.S. holder" applies for U.S. federal estate tax purposes (as discussed below).

This discussion is based on current provisions of the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences to non-U.S. holders described in this prospectus. In addition, the Internal Revenue Service, or the IRS, could challenge one or more of the tax consequences described in this prospectus.

We assume in this discussion that each non-U.S. holder holds shares of our common stock as a capital asset (generally, property held for investment) within the meaning of Section 1221 of the Code. This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any aspects of state, local or non-U.S. taxes, or U.S. federal taxes other than income and estate taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- insurance companies;
- tax-exempt organizations;
- financial institutions;
- brokers or dealers in securities;
- regulated investment companies;
- pension plans;
- controlled foreign corporations;
- passive foreign investment companies;
- owners that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment;
- certain U.S. expatriates;
- persons who have elected to mark securities to market;

- persons subject to the unearned income Medicare contribution tax;
- persons subject to the alternative minimum tax; or
- persons that acquire our common stock as compensation for services.

In addition, this discussion does not address the tax treatment of partnerships (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) or other entities that are transparent for U.S. federal income tax purposes or persons who hold their common stock through partnerships or other entities that are transparent for U.S. federal income tax purposes. In the case of a holder that is classified as a partnership for U.S. federal income tax purposes, the tax treatment of a person treated as a partner in such partnership for U.S. federal income tax purposes generally will depend on the status of the partner and the activities of the partner and the partnership. A person treated as a partner in a partnership or who holds their stock through another transparent entity should consult his, her or its own tax advisor regarding the tax consequences of the ownership and disposition of our common stock through a partnership or other transparent entity, as applicable.

Prospective investors should consult their own tax advisors regarding the U.S. federal, state, local and non-U.S. income and other tax considerations of acquiring, holding and disposing of our common stock.

Distributions on our Common Stock

We do not currently expect to pay dividends. See "Dividend Policy" above in this prospectus. However, in the event that we do pay distributions of cash or property on our common stock (or in the case of certain redemptions that are treated as distributions with respect to our common stock), those distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below under the heading "Gain on Sale, Exchange or Other Taxable Disposition of Common Stock."

Subject also to the discussions below under the headings "Information Reporting and Backup Withholding Tax" and "Foreign Account Tax Compliance Act," dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence. If we determine, at a time reasonably close to the date of payment of a distribution on our common stock, that the distribution will not constitute a dividend because we do not anticipate having current or accumulated earnings and profits, we intend not to withhold any U.S. federal income tax on the distribution as permitted by U.S. Treasury Regulations. If we or another withholding agent apply over-withholding, a non-U.S. holder may be entitled to a refund or credit of any excess tax withheld by timely filing an appropriate claim with the IRS.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States, and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. To obtain this exemption, a non-U.S. holder must generally provide us with a properly executed original and unexpired IRS Form W-8ECI properly certifying such exemption. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim with the IRS.

Any documentation provided to an applicable withholding agent may need to be updated in certain circumstances. The certification requirements described above also may require a non-U.S. holder to provide its U.S. taxpayer identification number.

Gain on Sale, Exchange or Other Taxable Disposition of Common Stock

Subject to the discussions below under the headings "Information Reporting and Backup Withholding Tax" and "Foreign Account Tax Compliance Act," a non-U.S. holder generally will not be subject to U.S. federal income tax or withholding tax on gain recognized on a sale, exchange or other taxable disposition of our common stock (other than a redemption that is treated as a distribution for U.S. federal income tax purposes and taxed as described above) unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States, and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States; in these cases, the non-U.S. holder will be taxed on a net income basis at the regular graduated rates and in the manner applicable to U.S. persons, and, if the non-U.S. holder is a foreign corporation, an additional branch profits tax at a rate of 30%, or a lower rate as may be specified by an applicable income tax treaty, may also apply;
- the non-U.S. holder is an individual present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty) on the amount by which the non-U.S. holder's capital gains allocable to U.S. sources exceed capital losses allocable to U.S. sources during the taxable year of the disposition ; or
- we are or were a "U.S. real property holding corporation" during a certain look-back period, unless our common stock is regularly traded on an established securities market and the non-U.S. holder held no more than five percent of our outstanding common stock, directly or indirectly, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a "U.S. real property holding corporation" if the fair market value of its "U.S. real property interests" equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we believe that we have not been and are not currently, and we do not anticipate becoming, a "U.S. real property holding corporation" for U.S. federal income tax purposes.

If these exceptions do not apply, gain on the disposition of shares of our common stock will generally be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax will not apply.

Information Reporting and Backup Withholding Tax

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S.

holders may have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Generally, a holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption.

Information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Any documentation provided to an applicable withholding agent may need to be updated in certain circumstances.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

Foreign Account Tax Compliance Act

Legislation commonly referred to as the Foreign Account Tax Compliance Act and associated guidance, or collectively, FATCA, will generally impose a 30% withholding tax on any "withholdable payment" (as defined below) to a "foreign financial institution," unless such institution enters into an agreement with the U.S. government to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which would include certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with United States owners) or another applicable exception applies or such institution is compliant with applicable foreign law enacted in connection with an applicable intergovernmental agreement between the United States and a foreign jurisdiction. FATCA will also generally impose a 30% withholding tax on any "withholdable payment" (as defined below) to a foreign entity that is not a financial institution, unless such entity provides the withholding agent with a certification identifying the substantial U.S. owners of the entity (which generally includes any U.S. person who directly or indirectly owns more than 10% of the entity), if any, or another applicable exception applies or such entity is compliant with applicable foreign law enacted in connection with an applicable intergovernmental agreement between the United States and a foreign jurisdiction. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes.

Under final regulations and other current guidance, "withholdable payments" will generally include dividends on our common stock paid on or after July 1, 2014 and the gross proceeds of a disposition of our common stock paid on or after January 1, 2017. The FATCA withholding tax will apply regardless of whether a payment would otherwise be exempt from or not subject to U.S. nonresident withholding tax (e.g., under the portfolio interest exemption or as capital gain). The IRS is authorized to provide, and has begun the process of providing, rules for coordinating the FATCA withholding regime with the existing nonresident withholding tax rules.

Federal Estate Tax

Common stock owned or treated as owned by an individual who is a non-U.S. holder (as specially defined for U.S. federal estate tax purposes) at the time of death will be included in the individual's gross estate for U.S. federal estate tax purposes and, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

The preceding discussion of material U.S. federal tax considerations is for general information only. It is not tax advice. Prospective investors should consult their own tax advisors regarding the particular U.S. federal, state, local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed changes in applicable laws.

UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. Leerink Partners LLC and Cowen and Company, LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of Shares
Leerink Partners LLC	
Cowen and Company, LLC	
Canaccord Genuity Inc.	
JMP Securities LLC	
Total	

The underwriters are committed to purchase all the common shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common shares directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to $ per share from the initial public offering price. After the initial public offering of the shares, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this over-allotment option. If any shares are purchased with this over-allotment option, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without over-allotment exercise	With full over-allotment exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to

allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences of ownership of any shares of common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of Leerink Partners LLC and Cowen and Company, LLC for a period of 180 days after the date of this prospectus, other than the shares of our common stock to be sold hereunder and any shares of our common stock issued upon the exercise of options granted under our existing stock-based compensation plans.

Our directors and executive officers, and certain of our significant shareholders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 180 days after the date of this prospectus, may not, without the prior written consent of Leerink Partners LLC and Cowen and Company, LLC, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock. We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

We have applied to list our common stock on The NASDAQ Global Market under the symbol “ZFGN”.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ over-allotment option referred to above, or may be “naked” shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their over-allotment option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the over-allotment option. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the NASDAQ, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

This document is only being distributed to and is only directed at (i) persons who are outside the United Kingdom or (ii) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (iii) high net worth entities, and other persons to whom it may lawfully be communicated, falling with Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). The securities are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such securities will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), from and including the date on which the European Union Prospectus Directive (the "EU Prospectus Directive") was implemented in that Relevant Member State (the "Relevant Implementation Date") an offer of securities described in this prospectus may not be made to the

public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the EU Prospectus Directive, except that, with effect from and including the Relevant Implementation Date, an offer of securities described in this prospectus may be made to the public in that Relevant Member State at any time:

- to any legal entity which is a qualified investor as defined under the EU Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the EU Prospectus Directive); or

in any other circumstances falling within Article 3(2) of the EU Prospectus Directive, provided that no such offer of securities described in this prospectus shall result in a requirement for the publication by us of a prospectus pursuant to Article 3 of the EU Prospectus Directive.

For the purposes of this provision, the expression an "offer of securities to the public" in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe for the securities, as the same may be varied in that Member State by any measure implementing the EU Prospectus Directive in that Member State. The expression "EU Prospectus Directive" means Directive 2003/71/EC (and any amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State, and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts and for the underwriters by Ropes & Gray LLP, Boston, Massachusetts.

EXPERTS

The financial statements as of December 31, 2013 and 2012 and for each of the three years in the period ended December 31, 2013 and, cumulatively, for the period from November 22, 2005 (date of inception) to December 31, 2013 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act that registers the shares of our common stock to be sold in this offering. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules filed as part of the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The reports and other information we file with the SEC can be read and copied at the SEC's Public Reference Room at 100 F Street, NE, Washington D.C. 20549. Copies of these materials can be obtained at prescribed rates from the Public Reference Section of the SEC at the principal offices of the SEC, 100 F Street, NE, Washington D.C. 20549. You may obtain information regarding the operation of the public reference room by calling 1(800) SEC-0330. The SEC also maintains a web site (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC.

Upon completion of this offering, we will become subject to the reporting and information requirements of the Exchange Act and, as a result, will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference room and the web site of the SEC referred to above.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Zafgen, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive loss, of redeemable convertible preferred stock and stockholders' deficit and of cash flows present fairly, in all material respects, the financial position of Zafgen, Inc. and its subsidiaries (a development stage company) at December 31, 2013 and 2012, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2013 and, cumulatively, for the period from November 22, 2005 (date of inception) to December 31, 2013 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States), which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 14, 2014

ZAFGEN, INC.
(A Development Stage Company)

CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share data)

	December 31,		Pro Forma December 31,
	2012	2013	2013
			(unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 9,935	$ 35,517	$ 35,517
Prepaid expenses and other current assets	389	224	224
Tax incentive receivable	—	1,617	1,617
Total current assets	10,324	37,358	37,358
Tax incentive receivable	630	—	—
Property and equipment, net	32	37	37
Deferred offering costs	—	743	743
Total assets	$ 10,986	$ 38,138	$ 38,138
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)			
Current liabilities:			
Accounts payable	$ 1,231	$ 2,015	$ 2,015
Accrued expenses	1,699	900	900
Total current liabilities	2,930	2,915	2,915
Total liabilities	2,930	2,915	2,915
Commitments and contingencies (Note 10)			
Redeemable convertible preferred stock (Series A, B, C, D and E), $0.001 par value; 78,372,931 and 99,292,610 shares authorized at December 31, 2012 and 2013, respectively; 73,991,017 and 94,483,404 shares issued and outstanding at December 31, 2012 and 2013, respectively; aggregate liquidation preference of $104,588 at December 31, 2013; no shares issued or outstanding pro forma at December 31, 2013 (unaudited)	62,785	103,797	—
Stockholders' equity (deficit):			
Common stock, $0.001 par value; 100,000,000 and 115,000,000 shares authorized at December 2012 and 2013, respectively; 4,622,336 and 4,580,669 shares issued and outstanding at December 31, 2012 and 2013, respectively; 99,064,073 shares issued and outstanding pro forma at December 31, 2013 (unaudited)	5	5	99
Additional paid-in capital	146	328	104,031
Deficit accumulated during the development stage	(54,880)	(68,907)	(68,907)
Total stockholders' equity (deficit)	(54,729)	(68,574)	35,223
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 10,986	$ 38,138	$ 38,138

The accompanying notes are an integral part of these consolidated financial statements.

ZAFGEN, INC.
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In thousands, except share and per share data)

	Year Ended December 31,			Cumulative Period From Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	11,403	11,544	9,561	54,290
General and administrative	1,751	2,247	4,219	14,309
Total operating expenses	13,154	13,791	13,780	68,599
Loss from operations	(13,154)	(13,791)	(13,780)	(68,599)
Other income (expense):				
Interest income	—	—	—	120
Interest expense	—	(97)	—	(106)
Foreign currency transaction gains (losses), net	(3)	8	(247)	(243)
Total other expense, net	(3)	(89)	(247)	(229)
Net loss and comprehensive loss	(13,157)	(13,880)	(14,027)	(68,828)
Accretion of redeemable convertible preferred stock to redemption value	(53)	(67)	(213)	(554)
Net loss attributable to common stockholders	$ (13,210)	$ (13,947)	$ (14,240)	$ (69,382)
Net loss per share attributable to common stockholders, basic and diluted	$ (3.05)	$ (3.13)	$ (3.11)	
Weighted average common shares outstanding, basic and diluted	4,326,581	4,456,778	4,578,127	
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)			$ (0.17)	
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)			84,189,565	

The accompanying notes are an integral part of these consolidated financial statements.

ZAFGEN, INC.
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT

(In thousands, except share data)

	Series A, B, C, D and E Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Deficit Accumulated During the Development Stage	Total Stockholders' Deficit
	Shares	Amount	Shares	Par Value			
Balances at Inception (November 22, 2005)	—	$ —	—	$ —	$ —	$ —	$ —
Issuance of common stock	—	—	4,073,596	4	—	—	4
Issuance of restricted common stock	—	—	1,195,736	2	32	—	34
Issuance of common stock upon exercise of stock options	—	—	223,130	—	2	—	2
Issuance of common stock for services rendered	—	—	74,541	—	—	—	—
Repurchase and retirement of common stock, at cost	—	—	(1,045,588)	(1)	—	—	(1)
Issuance of Series A redeemable convertible preferred stock, net of issuance costs of $82	4,768,001	1,918	—	—	—	—	—
Conversion of promissory notes to Series A redeemable convertible preferred stock	595,238	175	—	—	—	—	—
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $111	36,741,738	27,630	—	—	—	—	—
Conversion of promissory notes and accrued interest to Series B redeemable convertible preferred stock	842,497	509	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	160	—	160
Accretion of redeemable convertible preferred stock to redemption value	—	221	—	—	(142)	(79)	(221)
Net loss	—	—	—	—	—	(27,764)	(27,764)
Balances at December 31, 2010	42,947,474	30,453	4,521,415	5	52	(27,843)	(27,786)
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $9	2,682,011	2,016	—	—	—	—	—
Issuance of Series C redeemable convertible preferred stock, net of issuance costs of $33	8,923,884	8,053	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	80	—	80
Accretion of redeemable convertible preferred stock to redemption value	—	53	—	—	(53)	—	(53)
Net loss	—	—	—	—	—	(13,157)	(13,157)
Balances at December 31, 2011	54,553,369	40,575	4,521,415	5	79	(41,000)	(40,916)
Issuance of Series C redeemable convertible preferred stock, net of issuance costs of $8	7,808,400	7,067	—	—	—	—	—
Issuance of Series D redeemable convertible preferred stock, net of issuance costs of $54	6,653,988	8,990	—	—	—	—	—
Conversion of promissory notes and accrued interest to Series D redeemable convertible preferred stock	4,975,260	6,086	—	—	—	—	—
Issuance of common stock upon exercise of stock options	—	—	100,921	—	13	—	13
Stock-based compensation expense	—	—	—	—	121	—	121
Accretion of redeemable convertible preferred stock to redemption value	—	67	—	—	(67)	—	(67)
Net loss	—	—	—	—	—	(13,880)	(13,880)
Balances at December 31, 2012	73,991,017	62,785	4,622,336	5	146	(54,880)	(54,729)
Issuance of Series D redeemable convertible preferred stock, net of issuance costs of $1	4,381,914	5,955	—	—	—	—	—
Issuance of Series E redeemable convertible preferred stock, net of issuance costs of $156	16,110,473	34,844	—	—	—	—	—
Repurchase and retirement of common stock, at cost	—	—	(41,667)	—	—	—	—
Stock-based compensation expense	—	—	—	—	395	—	395
Accretion of redeemable convertible preferred stock to redemption value	—	213	—	—	(213)	—	(213)
Net loss	—	—	—	—	—	(14,027)	(14,027)
Balances at December 31, 2013	94,483,404	$103,797	4,580,669	$ 5	$ 328	$ (68,907)	$(68,574)

The accompanying notes are an integral part of these consolidated financial statements.

ZAFGEN, INC.
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CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,			Cumulative Period From Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
Cash flows from operating activities:				
Net loss	$(13,157)	$(13,880)	$(14,027)	$ (68,828)
Adjustments to reconcile net loss to net cash used in operating activities				
Stock-based compensation expense	80	121	395	756
Non-cash interest expense	—	97	—	106
Depreciation expense	4	11	12	42
Unrealized foreign currency transaction losses	—	—	250	250
(Gain) loss on disposal of property and equipment	(2)	—	—	30
Changes in operating assets and liabilities:				
Prepaid expenses and other current assets	(61)	(269)	165	(192)
Tax incentive receivable	—	(630)	(1,237)	(1,867)
Accounts payable	(43)	727	237	1,468
Accrued expenses	905	234	(799)	900
Net cash used in operating activities	(12,274)	(13,589)	(15,004)	(67,335)
Cash flows from investing activities:				
Purchases of property and equipment	(35)	(2)	(17)	(130)
Proceeds from sales of property and equipment	2	—	—	21
Deposits	(12)	—	—	(32)
Net cash used in investing activities	(45)	(2)	(17)	(141)
Cash flows from financing activities:				
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	10,069	16,057	40,799	96,473
Issuance of convertible promissory notes, net of issuance costs	—	5,989	—	6,664
Proceeds from issuance of common stock	—	—	—	38
Proceeds from exercise of common stock options	—	13	—	15
Repurchase of common stock at cost	—	—	—	(1)
Payments of initial public offering costs	—	—	(196)	(196)
Net cash provided by financing activities	10,069	22,059	40,603	102,993
Net increase (decrease) in cash and cash equivalents	(2,250)	8,468	25,582	35,517
Cash and cash equivalents at beginning of period	3,717	1,467	9,935	—
Cash and cash equivalents at end of period	$ 1,467	$ 9,935	$ 35,517	$ 35,517
Supplemental disclosure of non-cash investing and financing activities:				
Accretion of redeemable convertible preferred stock to redemption values	$ 53	$ 67	$ 213	$ 554
Conversion of convertible promissory notes and accrued interest to shares of redeemable convertible preferred stock	$ —	$ 6,086	$ —	$ 6,770
Deferred offering costs included in accounts payable	$ —	$ —	$ 547	$ 547

The accompanying notes are an integral part of these consolidated financial statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except share and per share data)

1. Nature of the Business and Basis of Presentation

Zafgen, Inc. (the "Company") (a development stage company) was incorporated on November 22, 2005 under the laws of the State of Delaware. The Company is a biopharmaceutical company dedicated to significantly improving the health and well-being of patients affected by obesity. Beloranib, the Company's lead product candidate, is a novel, first-in-class, twice-weekly subcutaneous injection being developed for the treatment of multiple indications, including obesity and hyperphagia in Prader-Willi Syndrome patients, craniopharyngioma-associated obesity, and severe obesity in the general population. Since its inception, the Company has devoted substantially all of its efforts to research and development, recruiting management, acquiring operating assets and raising capital. Accordingly, the Company is considered to be in the development stage.

The Company is subject to risks common to companies in the biotechnology industry including, but not limited to, new technological innovations, protection of proprietary technology, dependence on key personnel, compliance with government regulations and the need to obtain additional financing. Product candidates currently under development will require significant additional research and development efforts, including extensive pre-clinical and clinical testing and regulatory approval, prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel infrastructure, and extensive compliance-reporting capabilities.

The Company's product candidates are all in the development stage. There can be no assurance that the Company's research and development will be successfully completed, that adequate protection for the Company's intellectual property will be obtained, that any products developed will obtain necessary government regulatory approval or that any approved products will be commercially viable. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will generate significant revenue from product sales. The Company operates in an environment of rapid change in technology and substantial competition from pharmaceutical and biotechnology companies. In addition, the Company is dependent upon the services of its employees and consultants.

The Company's consolidated financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities in the ordinary course of business. The Company has experienced negative cash flows and has a deficit accumulated during the development stage of $68,907 as of December 31, 2013. The Company expects that its existing cash and cash equivalents as of December 31, 2013 will enable the Company to fund its operating expenses and capital expenditures requirements for at least twelve months. The future viability of the Company is largely dependent on its ability to generate cash from operating activities or to raise additional capital to finance its operations. The Company's failure to raise capital as and when needed could have a negative impact on its financial condition and ability to pursue its business strategies.

The Company is seeking to complete an initial public offering of its common stock. Upon a successful qualified public offering with net proceeds of not less than $35,000, the Company's outstanding redeemable convertible preferred stock will automatically convert into shares of common stock.

In the event the Company does not complete an initial public offering, the Company expects to seek additional funding through private financings, debt financing, collaboration agreements or government grants. The Company may not be able to obtain financing on acceptable terms, or at all, and the Company may not be able to enter into collaboration arrangements or obtain government grants. The terms of any financing may

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adversely affect the holdings or the rights of the Company's stockholders. If the Company is unable to obtain funding, the Company could be forced to delay, reduce or eliminate its research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect its business prospects. Although management continues to pursue these plans, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund continuing operations, if at all.

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries, Zafgen Securities Corporation, Zafgen Australia Pty Limited, and Zafgen Animal Health, LLC. All significant intercompany balances and transactions have been eliminated.

The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP").

At December 31, 2013, the Company is considered a development stage enterprise. Until planned principal operations have commenced and significant revenue is generated, financial statements prepared in accordance with GAAP are required to report cumulative statements of operations and comprehensive loss, stockholders' equity (deficit) and cash flows from date of inception of the company.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of expenses during the reporting periods. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the accrual of research and development expenses and the valuation of common stock and stock-based awards. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Actual results could differ from the Company's estimates.

Unaudited Pro Forma Information

The accompanying unaudited pro forma consolidated balance sheet as of December 31, 2013 has been prepared to give effect to the automatic conversion of all outstanding shares of redeemable convertible preferred stock into 99,064,073 shares of common stock as if the proposed initial public offering had occurred on December 31, 2013. In the accompanying consolidated statements of operations, unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2013 has been prepared to give effect to the automatic conversion of all outstanding shares of redeemable convertible preferred stock as if the proposed initial public offering had occurred on the later of January 1, 2013 or the issuance date of the redeemable convertible preferred stock.

Cash Equivalents

The Company considers all short-term, highly liquid investments with original maturities of ninety days or less at acquisition date to be cash equivalents. Cash equivalents, which consist of money market accounts, are stated at fair value.

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Concentration of Credit Risk and of Significant Suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents. The Company has all cash and cash equivalents balances at one accredited financial institution, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company is dependent on third-party manufacturers to supply products for research and development activities in its programs. In particular, the Company relies and expects to continue to rely on a small number of manufacturers to supply it with its requirements for the active pharmaceutical ingredients and formulated drugs related to these programs. These programs could be adversely affected by a significant interruption in the supply of active pharmaceutical ingredients and formulated drugs.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices) such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's cash equivalents of $8,001 and $26,501 as of December 31, 2012 and 2013, respectively, were carried at fair value based on quoted prices in active markets, a Level 1 measurement. The carrying values of accounts payable and accrued expenses approximate their fair value due to the short-term nature of these liabilities.

Deferred Offering Costs

The Company capitalizes certain legal, accounting and other third-party fees that are directly associated with in-process equity financings as other assets until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the offering or as a reduction to the carrying value of preferred stock issued, if such stock is classified outside of stockholders' equity (deficit). As of December 31, 2013, the Company recorded $743 in deferred offering costs in the accompanying consolidated balance sheet in contemplation of a probable 2014 equity financing. Should the equity financing no longer be considered probable of being consummated, the deferred offering costs would be expensed immediately as a charge to operating expenses in the consolidated statement of operations. The Company did not record any deferred offering costs as of December 31, 2012.

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Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over a five-year estimated useful life for both furniture and fixtures and office equipment. Expenditures for repairs and maintenance of assets are charged to expense as incurred. Upon retirement or sale, the cost and related accumulated depreciation of assets disposed of are removed from the accounts and any resulting gain or loss is included in loss from operations.

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends, and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Research and Development Costs

Research and development costs are expensed as incurred. Included in research and development expenses are wages, stock-based compensation and benefits of employees, third-party license fees and other operational costs related to the Company's research and development activities, including facility-related expenses and external costs of outside vendors engaged to conduct both pre-clinical studies and clinical trials. The Company records research and development expenses net of any research and development tax incentives the Company is entitled to receive from government authorities.

Research Contract Costs and Accruals

The Company has entered into various research and development contracts with research institutions and other companies both inside and outside of the United States. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Patent Costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are recorded as general and administrative expenses as incurred, as recoverability of such expenditures is uncertain.

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Accounting for Stock-Based Compensation

The Company measures all stock options and other stock-based awards granted to employees and directors at the fair value on the date of the grant using the Black-Scholes option-pricing model. The fair value of the awards is recognized as expense, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. The straight-line method of expense recognition is applied to all awards with service-only conditions.

For stock-based awards granted to consultants and nonemployees, compensation expense is recognized over the period during which services are rendered by such consultants and nonemployees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is re-measured using the then-current fair value of the Company's common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its consolidated statement of operations and comprehensive loss in the same manner in which the award recipient's payroll costs are classified or in which the award recipients' service payments are classified.

The Company recognizes compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate, the Company has considered its historical experience to estimate pre-vesting forfeitures for service-based awards. The impact of a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual forfeiture rate is materially different from the Company's estimate, the Company may be required to record adjustments to stock-based compensation expense in future periods.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the consolidated financial statements or in the Company's tax returns. Deferred taxes are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company accounts for uncertainty in income taxes recognized in the consolidated financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the consolidated financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

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Segment Data

The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company's singular focus is on advancing novel therapeutics for patients suffering from severe obesity and obesity-related disorders. No revenue has been generated since inception, and all tangible assets are held in the United States.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. For the years ended December 31, 2011, 2012 and 2013 and for the cumulative period from inception (November 22, 2005) through December 31, 2013, there was no difference between net loss and comprehensive loss.

Net Income (Loss) Per Share

The Company follows the two-class method when computing net income (loss) per share, as the Company has issued shares that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

Basic net income (loss) per share attributable to common stockholders is computed by dividing the net income (loss) attributable to common stockholders by the weighted average number of shares of common stock outstanding for the period. Diluted net income (loss) attributable to common stockholders is computed by adjusting income (loss) attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities, including outstanding stock options and unvested restricted common stock. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the diluted net income (loss) attributable to common stockholders by the weighted average number of common shares outstanding for the period, including potential dilutive common shares assuming the dilutive effect of outstanding stock options and unvested restricted common stock.

The Company's redeemable convertible preferred stock contractually entitles the holders of such shares to participate in dividends but does not contractually require the holders of such shares to participate in losses of the Company. Similarly, restricted stock awards granted by the Company entitle the holder of such awards to dividends declared or paid by the board of directors, regardless of whether such awards are unvested, as if such shares were outstanding common shares at the time of the dividend. However, the unvested restricted stock awards are not entitled to share in the residual net assets (deficit) of the Company. Accordingly, in periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. The Company reported a net loss attributable to common stockholders for the years ended December 31, 2011, 2012 and 2013.

Recently Issued and Adopted Accounting Pronouncements

In June 2011, the Financial Accounting Standards Board ("FASB") issued an amendment to the accounting guidance for presentation of comprehensive income. Under the amended guidance, a company may present the total of comprehensive income, the components of net income, and the components of other comprehensive income

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either in a single continuous statement of comprehensive income or in two separate but consecutive statements. In either case, a company is required to present each component of net income along with total net income, each component of other comprehensive income along with a total for other comprehensive income, and a total amount for comprehensive income. The amendment is effective for fiscal years ending, and interim periods within those years, beginning after December 15, 2011, and is applied retrospectively. The Company adopted this amendment in the accompanying consolidated financial statements by presenting comprehensive loss in a single continuous statement along with net loss.

Accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company's consolidated financial statements upon adoption.

3. Property and Equipment, net

Property and equipment, net consisted of the following as of December 31, 2012 and 2013:

	December 31,	
	2012	2013
Office equipment	$ 10	$ 27
Furniture and fixtures	44	44
	54	71
Less: Accumulated depreciation	(22)	(34)
	$ 32	$ 37

Depreciation expense was $4, $11 and $12 for the years ended December 31, 2011, 2012 and 2013, respectively, and $42 for the period from inception (November 22, 2005) through December 31, 2013.

4. Accrued Expenses

Accrued expenses consisted of the following as of December 31, 2012 and 2013:

	December 31,	
	2012	2013
Accrued payroll and related expenses	$ 74	$ 49
Accrued research and development expenses	1,558	616
Accrued professional fees	62	196
Accrued other	5	39
	$1,699	$ 900

5. Convertible Promissory Notes

In 2006, the Company issued promissory notes with a principal amount of $175. In August 2006, the Company and noteholders agreed to convert the outstanding principal into shares of the Company's newly issued Series A redeemable convertible preferred stock at a price of $0.294 per share for a total of 595,238 shares (see Note 6).

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In July 2007, the Company issued a convertible promissory note with a principal amount of $500. The note accrued interest at an annual rate of 8%. If not converted prior to maturity, principal and interest were payable at the stated maturity date of December 31, 2007 or, at the election of the noteholder, could be converted into Series A redeemable convertible preferred stock at a per share price of $0.388. Effective upon the closing of a financing of at least $3,000 (a "Qualified Financing"), all of the outstanding principal and interest under the note automatically converted into shares of the same class and series of capital stock as issued to others in the Qualified Financing at a conversion price of 80% of the price per share of the capital stock issued in the Qualified Financing. The Qualified Financing occurred in October 2007, at which time principal and accrued interest of $509 was converted into 842,497 shares of Series B redeemable preferred stock at an issuance price of $0.60 per share.

In August and November 2012, the Company issued convertible promissory notes with a principal amount of $6,000. The notes accrued interest at an annual rate of 8% and, unless otherwise converted, were due one year from the issuance date. The notes were to be automatically converted into shares of a new class of preferred stock upon the sale by the Company of the new class of preferred stock yielding proceeds of at least $10,000 or, if the sale of the new class of preferred stock was for less than $10,000, the notes could be converted at the option of the noteholder at 90% of the price of the new series of preferred stock. In November 2012, upon the Company's issuance of 6,653,988 shares of Series D redeemable convertible preferred stock for gross proceeds of $9,044 (see Note 6), the noteholders elected to convert the outstanding principal and accrued interest of $6,086 into 4,975,260 shares of Series D redeemable convertible preferred stock.

6. Redeemable Convertible Preferred Stock

As of December 31, 2013, the Company's Certificate of Incorporation, as amended and restated, authorizes the Company to issue 99,292,610 shares of $0.001 par value preferred stock.

The Company has issued Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock (collectively, the "Redeemable Preferred Stock"). The Redeemable Preferred Stock is classified outside of stockholders' equity (deficit) because the shares contain redemption features that are not solely within the control of the Company.

During 2006 and 2007, the Company issued a total of 4,768,001 shares of Series A redeemable convertible preferred stock at an issuance price equal to $0.419463 per share and received gross proceeds of $2,000. In connection with these financings, the Company paid total issuance costs of $82. Additionally, in 2006, $175 of convertible promissory notes were converted into 595,238 shares of Series A redeemable convertible preferred stock (see Note 5).

During 2007, 2008 and 2010, the Company issued a total of 36,741,738 shares of Series B redeemable convertible preferred stock at an issuance price equal to $0.75503 per share and received gross proceeds of $27,741. In connection with these financings, the Company paid total issuance costs of $111. Additionally, in 2007, a convertible promissory note of $500 and accrued interest of $9 were converted into 842,497 shares of Series B redeemable convertible preferred stock (see Note 5). In February 2011, the Company issued a total of 2,682,011 shares of Series B redeemable convertible preferred stock at an issuance price equal to $0.75503 per share and received gross proceeds of $2,025. In connection with this financing, the Company paid total issuance costs of $9.

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In June and December 2011, the Company issued a total of 8,923,884 shares of Series C redeemable convertible preferred stock at an issuance price equal to $0.9061 per share and received gross proceeds of $8,086. In connection with this financing, the Company paid total issuance costs of $33.

In February 2012, the Company issued 7,808,400 shares of Series C redeemable convertible preferred stock at an issuance price equal to $0.9061 per share and received gross proceeds of $7,075. In connection with this financing, the Company paid total issuance costs of $8.

In November 2012, the Company issued 6,653,988 shares of Series D redeemable convertible preferred stock at an issuance price equal to $1.3592 per share and received gross proceeds of $9,044. In connection with this financing, the Company paid total issuance costs of $54. Additionally, in November 2012, $6,000 of convertible promissory notes and $86 of accrued interest were converted into 4,975,260 shares of Series D redeemable convertible preferred stock (see Note 5).

In January 2013, the Company issued 4,381,914 shares of Series D redeemable convertible preferred stock at an issuance price equal to $1.3592 per share and received gross proceeds of $5,956. In connection with this financing, the Company paid total issuance costs of $1.

In November 2013, the Company issued 16,110,473 shares of Series E redeemable convertible preferred stock at an issuance price equal to $2.1725 per share and received gross proceeds of $35,000. In connection with this financing, the Company paid total issuance costs of $156.

Redeemable Preferred Stock consisted of the following as of December 31, 2012:

	Preferred Shares Authorized	Preferred Shares Issued and Outstanding	Liquidation Preference	Carrying Value	Common Stock Issuable Upon Conversion
Series A redeemable convertible preferred stock	5,363,239	5,363,239	$ 2,250	$ 2,222	5,363,239
Series B redeemable convertible preferred stock	40,266,246	40,266,246	30,402	30,335	40,266,246
Series C redeemable convertible preferred stock	16,732,284	16,732,284	15,161	15,137	16,732,284
Series D redeemable convertible preferred stock	16,011,162	11,629,248	15,816	15,091	11,629,248
	78,372,931	73,991,017	$ 63,629	$62,785	73,991,017

Redeemable Preferred Stock consisted of the following as of December 31, 2013:

	Preferred Shares Authorized	Preferred Shares Issued and Outstanding	Liquidation Preference	Carrying Value	Common Stock Issuable Upon Conversion
Series A redeemable convertible preferred stock	5,363,239	5,363,239	$ 2,250	$ 2,229	5,363,239
Series B redeemable convertible preferred stock	40,266,246	40,266,246	30,402	30,351	40,266,246
Series C redeemable convertible preferred stock	16,732,284	16,732,284	15,161	15,144	16,732,284
Series D redeemable convertible preferred stock	16,011,162	16,011,162	21,775	21,226	16,011,162
Series E redeemable convertible preferred stock	20,919,679	16,110,473	35,000	34,847	16,110,473
	99,292,610	94,483,404	$104,588	$103,797	94,483,404

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The holders of the Redeemable Preferred Stock have the following rights and preferences:

Voting Rights

The holders of Redeemable Preferred Stock are entitled to vote, together with the holders of common stock, on all matters submitted to stockholders for a vote. Holders of all Redeemable Preferred Stock have the right to vote the number of shares equal to the number of shares of common stock into which such Redeemable Preferred Stock could convert on the record date for determination of stockholders entitled to vote.

Dividends

The Company may not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Company unless the holders of the Redeemable Preferred Stock then outstanding shall first receive a dividend on each outstanding share of Redeemable Preferred Stock in an amount at least equal to (i) in the case of a dividend on common stock or any class or series that is convertible into common stock, that dividend per share of Redeemable Preferred Stock as would equal the product of (A) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into common stock and (B) the number of shares of common stock issuable upon conversion of a share of Redeemable Preferred Stock, or (ii) in the case of a dividend on any class or series that is not convertible into common stock, at a rate per share of Redeemable Preferred Stock determined by (A) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination of or other similar recapitalization affecting such shares) and (B) multiplying such fraction by an amount equal to the Original Issue Price (as defined below) of each series of Redeemable Preferred Stock. If the Company declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Company, the dividend payable to the holders of the Redeemable Preferred Stock shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Redeemable Preferred Stock dividend. The Original Issue Price for Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock is $0.419463, $0.75503, $0.9061, $1.3592 and $2.1725, respectively, per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Redeemable Preferred Stock.

Liquidation Preference

In the event of any liquidation, voluntary or involuntary, exclusive out-license of all or substantially all of the intellectual property of the Company, dissolution or winding up of the Company or Deemed Liquidation Event (as defined below), the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stockholders are entitled to receive, in preference to all other stockholders, and to the extent available, an amount equal to the Original Issue Price per share, adjusted for any stock dividends, stock splits or reclassifications, plus all dividends declared but unpaid. In the event that proceeds are not sufficient to permit payment in full to these holders, the proceeds will be ratably distributed among the Series A, Series B, Series C, Series D and Series E holders in proportion to the full preferential amount each such holder is otherwise entitled to receive.

After payments have been made in full to the holders of the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock, then, to the extent available, holders of the common stock and holders of the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock will

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receive the remaining amounts available for distribution ratably in proportion to the number of common shares held by them or issuable to them upon conversion of their redeemable convertible preferred stock into common stock. The distributions are subject to an overall distribution limit of the greater of (i) two times the amount the holders of the Redeemable Preferred Stock are entitled to based on their preference payment and (ii) the amount such holder would have received if such holder had converted shares of the Redeemable Preferred Stock into common stock immediately prior to such dissolution, liquidation, exclusive out-license of all or substantially all of the intellectual property, or winding up of the Company or Deemed Liquidation Event.

Unless the holders of at least 70% of the then outstanding shares of the Redeemable Preferred Stock, voting together as a single class on an as-converted basis, elect otherwise, a Deemed Liquidation Event shall include a sale of the Company, a sale of the capital stock representing a majority of the voting power or a merger or consolidation of the Company into or with another corporation in which the existing Company holds less than a majority of the voting power of the surviving or resulting corporation, or the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Company of all or substantially all of the assets of the Company.

Conversion

Each share of Redeemable Preferred Stock is convertible into common stock at the option of the stockholder at any time after the date of issuance. Each share of the preferred stock will automatically be converted into shares of common stock, at the applicable Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock conversion ratio then in effect, upon a qualified public offering with net proceeds of not less than $35,000. The conversion ratio of the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock, as defined, is determined by dividing the Original Issue Price of each series of preferred stock by the Conversion Price of each series. The Conversion Price of each series shall initially be $0.419463 for Series A, $0.75503 for Series B, $0.90610 for Series C, $1.3592 for Series D and $2.1725 for Series E. The Conversion Price is subject to adjustment as set forth in the Company's Certificate of Incorporation, as amended and restated, unless at least a majority of the Series A holders, at least 70% of each of Series B or Series C holders, at least 65% of Series D holders and at least a majority of the Series E holders, voting separately as a class with respect to their series, agree that no such adjustment shall be made to their series. As of December 31, 2013, all outstanding shares of Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock were convertible into common stock on a 1-for-1 basis.

Redemption Rights

At the written election of at least 70% of the holders of the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock, voting together as a single class on an as-converted basis, the shares of Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock outstanding are redeemable, at any time on or after November 22, 2017, in three equal annual installments commencing sixty days after receipt of the required vote at the Original Issue Price per share of Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock plus all declared but unpaid dividends thereon.

The carrying values of the Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock are being accreted to their redemption values through their respective redemption dates.

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Reissuance

Shares of any Series A, Series B, Series C, Series D or Series E redeemable convertible preferred stock that are redeemed or converted will be retired or canceled and not reissued by the Company.

7. Common Stock

As of December 31, 2013, the Company's Certificate of Incorporation, as amended and restated, authorizes the Company to issue 115,000,000 shares of $0.001 par value common stock.

Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of the Redeemable Preferred Stock. When dividends are declared on shares of common stock, the Company must declare at the same time a dividend payable to the holders of Redeemable Preferred Stock equivalent to the dividend amount they would receive if each preferred share were converted into common stock. The Company may not pay dividends to common stockholders until all dividends accrued or declared but unpaid on the Redeemable Preferred Stock have been paid in full. As of December 31, 2013, no dividends had been declared.

During the year ended December 31, 2013, the Company reacquired and retired 41,667 shares of restricted common stock, at cost, that were forfeited by a former employee.

As of December 31, 2013, the Company had reserved 105,043,636 shares of common stock for the conversion of the outstanding shares of Series A, Series B, Series C, Series D and Series E redeemable convertible preferred stock (see Note 6) and the exercise of stock options and issuance of common stock under the Company's Amended and Restated 2006 Stock Option Plan (see Note 8).

8. Stock-Based Awards

2006 Stock Option Plan

The Company's Amended and Restated 2006 Stock Option Plan (the "2006 Plan") provides for the Company to sell or issue common stock or restricted common stock, or to grant incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the board of directors and consultants of the Company. The 2006 Plan is administered by the board of directors, or at the discretion of the board of directors, by a committee of the board. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, or their committee if so delegated, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the share of common stock on the date of grant and the term of stock option may not be greater than ten years.

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Stock options granted under the 2006 Plan generally vest over four years and expire after ten years, although options have been granted with vesting terms less than four years.

The total number of shares of common stock that may be issued under the 2006 Plan was 11,863,864 shares as of December 31, 2013, of which 2,331,257 shares remained available for future grant at December 31, 2013.

The Company generally grants stock-based awards with service conditions only ("service-based" awards).

As required by the 2006 Plan, the exercise price for stock options granted is not to be less than the fair value of common shares as determined by the Company as of the date of grant. The Company values its common stock by taking into consideration its most recently available valuation of common shares performed by management and the board of directors as well as additional factors which may have changed since the date of the most recent contemporaneous valuation through the date of grant.

Stock Option Valuation

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model. The Company historically has been a private company and lacks company-specific historical and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The expected term of stock options granted to nonemployees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future. The assumptions that the Company used to determine the fair value of the stock options granted to employees and directors are as follows, presented on a weighted average basis (the Company did not grant any stock options to employees or directors during the year ended December 31, 2012):

	Year Ended December 31,	
	2011	2013
Risk-free interest rate	1.41%	1.12%
Expected term (in years)	6.25	6.25
Expected volatility	78%	85%
Expected dividend yield	0%	0%

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The following table summarizes the Company's stock option activity since January 1, 2011:

	Shares Issuable Under Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (In years)	Aggregate Intrinsic Value
Outstanding as of January 1, 2011	2,765,148	$ 0.12	8.5	$ 216
Granted	2,988,000	0.25		
Exercised	—	—		
Forfeited	—	—		
Outstanding as of December 31, 2011	5,753,148	$ 0.19	8.7	$ 354
Granted	50,000	0.25		
Exercised	(100,921)	0.14		
Forfeited	(1,988,000)	0.25		
Outstanding as of December 31, 2012	3,714,227	$ 0.16	7.1	$ 342
Granted	4,514,748	0.42		
Exercised	—			
Forfeited	—			
Outstanding as of December 31, 2013	8,228,975	$ 0.30	7.8	$ 10,185
Options vested and expected to vest as of December 31, 2013	8,228,975	$ 0.30	7.8	$ 10,185
Options exercisable as of December 31, 2013	4,128,016	$ 0.20	6.6	$ 5,543

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock. The aggregate intrinsic value of stock options exercised was $12 during the year ended December 31, 2012. No stock options were exercised during the years ended December 31, 2011 or 2013.

The Company received cash proceeds from the exercise of stock options of $13 during the year ended December 31, 2012.

The weighted average grant-date fair value of stock options granted to employees and directors during the years ended December 31, 2011 and 2013 was $0.17 and $0.29 per share, respectively. The Company did not grant stock options to employees or directors in 2012. The grant of stock options in 2012 was to a consultant.

As of December 31, 2013, there were outstanding unvested service-based stock options held by nonemployees for the purchase of 110,000 shares of common stock. Additionally as of December 31, 2013, there were outstanding unvested performance-based stock options held by nonemployees for the purchase of 5,000 shares of common stock.

Restricted Common Stock

The 2006 Plan provides for the award of restricted stock. The Company has granted restricted common stock with time-based vesting conditions. Unvested shares of restricted common stock may not be sold or transferred by the holder. These restrictions lapse according to the time-based vesting conditions of each award.

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The table below summarizes the Company's restricted stock activity since January 1, 2011:

	Shares	Weighted Average Grant-Date Fair Value
Unvested restricted common stock as of January 1, 2011	241,667	$ 0.13
Issued	—	—
Vested	(87,500)	0.12
Forfeited	—	—
Unvested restricted common stock as of December 31, 2011	154,167	$ 0.13
Issued	—	—
Vested	(87,500)	0.12
Forfeited	—	—
Unvested restricted common stock as of December 31, 2012	66,667	$ 0.13
Issued	—	—
Vested	(25,000)	0.12
Forfeited	(41,667)	0.13
Unvested restricted common stock as of December 31, 2013	—	—

The aggregate intrinsic value of restricted stock awards is calculated as the difference between the grant-date fair value of the restricted stock awards and the fair value of the Company's common stock. The aggregate intrinsic value of restricted stock awards that vested during each of the years ended December 31, 2011, 2012 and 2013 was $22, $22 and $38, respectively. As of December 31, 2013, there were no unvested restricted stock awards subject to repurchase.

Stock-based Compensation

The Company recorded stock-based compensation expense related to stock options and restricted common stock in the following expense categories of its statements of operations:

	Year Ended December 31,			Cumulative Period From Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
Research and development	$ 30	$ 68	$ 176	$ 339
General and administrative	50	53	219	417
	$ 80	$ 121	$ 395	$ 756

As of December 31, 2013, the Company had an aggregate of $1,334 of unrecognized stock-based compensation cost, which is expected to be recognized over a weighted average period of 3.6 years.

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9. Net Loss Per Share and Unaudited Pro Forma Net Loss Per Share

Net Loss Per Share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows for the years ended December 31, 2011, 2012 and 2013:

	Year Ended December 31,		
	2011	2012	2013
Numerator:			
Net loss	$ (13,157)	$ (13,880)	$ (14,027)
Accretion of redeemable convertible preferred stock to redemption value	(53)	(67)	(213)
Net loss attributable to common stockholders	$ (13,210)	$ (13,947)	$ (14,240)
Denominator:			
Weighted average common shares outstanding, basic and diluted	4,326,581	4,456,778	4,578,127
Net loss per share attributable to common stockholders, basic and diluted	$ (3.05)	$ (3.13)	$ (3.11)

The Company excluded the following common stock equivalents, outstanding as of December 31, 2011, 2012 and 2013, from the computation of diluted net loss per share attributable to common stockholders for the years ended December 31, 2011, 2012 and 2013 because they had an anti-dilutive impact due to the net loss attributable to common stockholders incurred for the periods.

	December 31,		
	2011	2012	2013
Stock options to purchase common stock	5,753,148	3,714,227	8,228,975
Unvested restricted common stock	154,167	66,667	—
	5,907,315	3,780,894	8,228,975

Unaudited Pro Forma Net Loss Per Share

The unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2013 gives effect to adjustments arising upon the closing of a qualified initial public offering. The unaudited pro forma net loss attributable to common stockholders used in the calculation of unaudited basic and diluted pro forma net loss per share attributable to common stockholders does not include the effects of the accretion on redeemable convertible preferred stock, because it assumes that the conversion of redeemable convertible preferred stock into common stock had occurred on the later of January 1, 2013 or the issuance date of the redeemable convertible preferred stock.

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The unaudited pro forma basic and diluted weighted average common shares outstanding used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2013 gives effect to the automatic conversion upon a qualified initial public offering of all outstanding shares of redeemable convertible preferred stock as of December 31, 2013 into 94,483,404 shares of common stock as if the conversion had occurred on the later of January 1, 2013 or the issuance date of the redeemable convertible preferred stock.

The computation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders is as follows:

	Year Ended December 31, 2013 (unaudited)
Numerator:	
Net loss	$ (14,027)
Pro forma net loss attributable to common stockholders	$ (14,027)
Denominator:	
Weighted average common shares outstanding, basic and diluted	4,578,127
Pro forma adjustment for assumed automatic conversion of all outstanding shares of redeemable convertible preferred stock upon the closing of the proposed initial public offering	79,611,438
Pro forma weighted average common shares outstanding, basic and diluted	84,189,565
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (0.17)

10. Commitments and Contingencies

Leases

The Company leases its office space under an operating lease agreement that initially expired on July 31, 2013, but was amended in 2013 to extend the lease through January 31, 2014. The lease, as amended, allows for up to two six-month extension periods. In December 2013, the Company extended the lease through July 31, 2014, cancellable with 30 days' notice.

Future minimum lease payments for its operating lease as of December 31, 2013 were as follows:

Year ending December 31,	
2014	$64
Total	$64

The Company also leased laboratory space in prior years; however, these leases terminated prior to 2011 and, as of December 31, 2013, there are no future commitments for laboratory space. During the years ended December 31, 2011, 2012 and 2013, the Company recognized $102, $129 and $ 105, respectively, of rental expense related to office space. For the period from inception (November 22, 2005) through December 31, 2013, the Company recognized $882 of rental expense related to office and laboratory space.

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Intellectual Property Licenses

The Company has acquired exclusive rights to develop patented compounds and related know-how for beloranib under two licensing agreements with two third parties in the course of its research and development activities. The licensing rights obligate the Company to make payments to the licensors for license fees, milestones, license maintenance fees and royalties. The Company is also responsible for patent prosecution costs. Related to these license agreements, the Company made payments and recorded research and development expenses in its consolidated statements of operations as follows:

	Year Ended December 31,			Cumulative Period From Inception (November 22, 2005) to December 31, 2013
	2011	2012	2013	
Licensing, milestone and license maintenance fees	$ 1,055	$ 150	$ —	$ 2,365

The Company is obligated to make additional milestone payments of up to $18,950 upon reaching certain pre-commercialization milestones, such as clinical trials and government approvals, and up to $12,500 upon reaching certain product commercialization milestones. Under one of the license agreements, the Company is also obligated to pay up to $1,250 with respect to each subsequent licensed product, if any, that is a new chemical entity. In addition, the Company will owe single-digit royalties on sales of commercial products developed using these licensed technologies, if any. The Company is also obligated to pay to the licensors a percentage of fees received if and when the Company sublicenses the technology. As of December 31, 2013, the Company has not yet developed a commercial product using the licensed technologies and it has not entered into any sublicense agreements for the technologies.

Indemnification Agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners, and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its board of directors that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company does not believe that the outcome of any claims under indemnification arrangements will have a material effect on its financial position, results of operations or cash flows, and it has not accrued any liabilities related to such obligations in its consolidated financial statements as of December 31, 2012 or 2013.

11. Income Taxes

During the years ended December 31, 2011, 2012 and 2013, the Company recorded no income tax benefits for the net operating losses incurred in each year or interim period, due to its uncertainty of realizing a benefit from those items.

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A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,		
	2011	2012	2013
Federal statutory income tax rate	(34.0%)	(34.0%)	(34.0%)
Federal and state research and development tax credit	(6.4)	(1.2)	(9.0)
Orphan drug tax credit	—	—	(3.1)
State taxes, net of federal benefit	(5.4)	(5.0)	(4.0)
Meals and entertainment	0.1	—	—
Stock-based compensation expense	0.2	0.2	0.6
Nondeductible Australia research and development expenses	—	1.8	4.1
Change in deferred tax asset valuation allowance	45.5	38.2	45.4
Effective income tax rate	0.0%	0.0%	0.0%

Net deferred tax assets as of December 31, 2012 and 2013 consisted of the following:

	December 31,	
	2012	2013
Current deferred tax assets:		
Accrued expenses	$ 46	$ 18
Other temporary differences	1	2
Total current deferred tax assets	47	20
Noncurrent deferred tax assets:		
Capitalized research and development expenses	16,676	19,856
Net operating loss carryforwards	3,209	4,021
Tax credit carryforwards	3,656	5,579
Capitalized legal expenses	385	790
Stock-based compensation	33	91
Total noncurrent deferred tax assets	23,959	30,337
Total gross deferred tax assets	24,006	30,357
Valuation allowance	(24,006)	(30,357)
Net deferred tax assets	$ —	$ —

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Changes in the valuation allowance for deferred tax assets during the years ended December 31, 2011, 2012 and 2013 related primarily to the increase in net operating loss carryforwards, capitalized research and development expenses and research and development tax credit carryforwards and were as follows:

	Year Ended December 31,		
	2011	2012	2013
Valuation allowance as of beginning of year	$ 12,748	$ 18,744	$ 24,006
Decreases recorded as benefit to income tax provision	—	—	—
Increases recorded to income tax provision	5,996	5,262	6,351
Valuation allowance as of end of year	$ 18,744	$ 24,006	$ 30,357

As of December 31, 2013, the Company had net operating loss carryforwards for federal and state income tax purposes of $10,548 and $8,226, respectively, which begin to expire in 2026 and 2014, respectively. The Company also had an additional $16 of federal and state net operating losses not reflected above that were attributable to stock option exercises, which will be recorded as an increase in additional paid-in capital once they are realized in accordance with accounting for stock-based compensation awards. As of December 31, 2013, the Company also had available research and development tax credit carryforwards for federal and state income tax purposes of $4,706 and $1,322, respectively, which begin to expire in 2026 and 2021, respectively. Utilization of the net operating loss carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain shareholders or public groups in the stock of a corporation by more than 50% over a three-year period. The Company has not conducted a study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined by Section 382, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization. Further, until a study is completed and any limitation is known, no amounts are being presented as an uncertain tax position.

As of December 31, 2012 and 2013, the Company's gross deferred tax asset balance of $24,006 and $30,357, respectively, was comprised principally of net operating loss carryforwards, capitalized research and development expenses and research and development tax credit carryforwards. During the years ended December 31, 2011, 2012 and 2013, gross deferred tax assets increased due to additional net operating loss carryforwards, research and development tax credits generated and additional research and development expenses capitalized for tax purposes.

ZAFGEN, INC.
(A Development Stage Company)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except share and per share data)

The Company has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets. Management has considered the Company's history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception and has concluded that it is more likely than not that the Company will not realize the benefits of the deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets as of December 31, 2012 and 2013. Management reevaluates the positive and negative evidence at each reporting period.

The Company has not recorded any amounts for unrecognized tax benefits as of December 31, 2012 or 2013.

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal and state jurisdictions, where applicable. There are currently no pending income tax examinations. The Company's tax years are still open under statute from 2010 to the present. Earlier years may be examined to the extent that tax credit or net operating loss carryforwards are used in future periods. The Company's policy is to record interest and penalties related to income taxes as part of its income tax provision.

12. Retirement Plan

In 2009, the Company established a Savings Incentive Match Plan for employees. Under the terms of the plan, the Company contributes 2% of an employee's annual base salary, up to a maximum of the annual Internal Revenue Service compensation limits, for all full-time employees.

During the years ended December 31, 2011, 2012 and 2013, the Company recognized $15, $16 and $26, respectively, of expense related to its contributions to this plan. During the period from inception (November 22, 2005) through December 31, 2013, the Company recognized $78 of expense related to its contributions to this plan.

13. Qualifying Therapeutic Discovery Project Program

In 2010, the Company received $489 for two research projects under the Qualifying Therapeutic Discovery Project Credit program under the Patient Protection and Affordable Care Act, covering 50% of qualifying expenses incurred. The Company recorded the proceeds as a reduction of research and development expenses in the consolidated statements of operations for the period from inception (November 22, 2005) through December 31, 2013.

14. Australia Research and Development Tax Incentive

The Australian government has established a research and development tax incentive to encourage industry investment in research and development, which is available to companies incorporated under an Australian law that have core research and development activities. The Company established Zafgen Australia Pty Limited, a wholly owned subsidiary, in October 2012 to carry out certain research and development activities. As this subsidiary meets the eligibility requirements of the Australian tax law, it is eligible to receive a 45% refundable tax incentive for qualified research and development activities. For the years ended December 31, 2012 and 2013, $630 and $1,237, respectively, have been recorded as a reduction to research and development expenses in the consolidated

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statements of operations, representing 45% of the Company's qualified research and development spending in Australia. For the period from inception (November 22, 2005) through December 31, 2013, $1,867 has been recorded as a reduction to research and development expenses in the consolidated statements of operations. The refund is denominated in Australian dollars and, therefore, the receivable is re-measured into U.S. dollars as of each reporting date. For the year ended December 31, 2013, the Company recorded in its consolidated statements of operations unrealized foreign currency exchange losses of $250 related to this tax incentive receivable. The Company did not have any foreign exchange gains or losses related to this receivable for periods prior to 2013. As of December 31, 2012 and 2013, the Company's tax incentive receivable from the Australian government was $630 and $1,617, respectively.

15. Related Party Transactions

In October 2011, the Company entered into an agreement with a member of the board of directors under which the board member would also serve as a business development consultant. Under the terms of the agreement, the annual consulting fee was $80. Additionally, a success fee of $500 would be earned upon a change in control of the Company. During the years ended December 31, 2011 and 2012, the Company paid the board member $18 and $80, respectively, for consulting services. This agreement was terminated in 2012.

16. Subsequent Events

For its consolidated financial statements as of December 31, 2013 and for the year then ended, the Company evaluated subsequent events through March 14, 2014, the date on which those consolidated financial statements were originally issued, and through April 18, 2014, the date on which those consolidated financial statements were reissued.

In February 2014, the Company issued 204,101 shares of Series E redeemable convertible preferred stock at a price of $2.1725 per share for net proceeds of $443.

17. Subsequent Events (unaudited)

Credit Facility

On March 31, 2014, the Company entered into a loan and security agreement (the "Credit Facility"). The Credit Facility provides for initial borrowings of $7,500 under a term loan ("Term Loan A") and additional borrowings of up to $12,500 under other term loans, for a maximum of $20,000. On March 31, 2014, the Company received proceeds of $7,500 from the issuance of promissory notes under the Term Loan A. Of the additional $12,500 amount available, $7,500 ("Term Loan B") is available to be drawn down until September 30, 2014 and $5,000 ("Term Loan C") is available subject to the completion of an initial public offering with net cash proceeds to the Company of at least $50,000 (a "Qualified IPO"). Upon a Qualified IPO, Term Loan C will be available to be drawn down through the earlier of December 31, 2014 or 30 days after the Qualified IPO. All promissory notes issued under the Credit Facility are due on December 1, 2017 and are collateralized by substantially all of the Company's personal property, other than its intellectual property. There are no financial covenants associated with the debt facility; however, there are negative covenants restricting the Company's activities, including limitations on dispositions, mergers or acquisitions; encumbering or granting a security interest in its intellectual property; incurring indebtedness or liens; paying dividends; making certain investments; and certain other business transactions.

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The Company is obligated to make monthly, interest-only payments on any term loans funded under the Credit Facility until December 1, 2014 and, thereafter, to pay 36 consecutive, equal monthly installments of principal and interest from January 1, 2015 through December 1, 2017. Upon a Qualified IPO, the term of monthly, interest-only payments will be extended until June 1, 2015. Term loans under the Credit Facility bear interest at an annual rate of 8.1%. In addition, a final payment equal to 6.0% of any amounts drawn down under the Credit Facility is due upon its maturity date.

The Company is obligated to pay a separate fee of up to $450 upon any initial public offering; a sale of substantially all of the Company's assets; or a merger, reorganization or sale of the Company's voting equity securities where existing voting stockholders hold less than 50% of voting equity securities after such transaction.

Shares

COMMON STOCK

Preliminary Prospectus

Joint Bookrunners

Leerink Partners **Cowen and Company**

Co-Managers

Canaccord Genuity **JMP Securities**

, 2014

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. *Other Expenses of Issuance and Distribution*

The following table sets forth all expenses, other than the underwriting discounts and commissions, payable by Zafgen, Inc. (the "Company" or the "Registrant") in connection with the sale of the common stock being registered. All the amounts shown are estimates except the SEC registration fee and the FINRA filing fee.

	Amount
SEC registration fee	$11,109
FINRA filing fee	*
NASDAQ initial listing fee	*
Blue sky qualification fees and expenses	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees	*
Miscellaneous	*
Total	$ *

* To be filed by amendment.

Item 14. *Indemnification of Directors and Officers*

Section 145 of the Delaware General Corporation Law permits a corporation to include in its charter documents, and in agreements between the corporation and its directors and officers, provisions expanding the scope of indemnification beyond that specifically provided by the current law.

Section 145(a) of the Delaware General Corporation Law provides, in general, that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), because he or she is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145(b) of the Delaware General Corporation Law provides, in general, that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor because the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made with respect to any claim, issue or matter as to which he or she shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of

the case, he or she is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or other adjudicating court shall deem proper.

Section 145(g) of the Delaware General Corporation Law provides, in general, that a corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify the person against such liability under Section 145 of the Delaware General Corporation Law.

The Company's amended and restated certificate of incorporation, which will become effective upon completion of the offering, provides for the indemnification of directors to the fullest extent permissible under Delaware law.

The Company's amended and restated by-laws, which will become effective upon completion of the offering, provide for the indemnification of officers, directors and third parties acting on the Company's behalf if such persons act in good faith and in a manner reasonably believed to be in and not opposed to the Company's best interest, and, with respect to any criminal action or proceeding, such indemnified party had no reason to believe his or her conduct was unlawful.

The Company is entering into indemnification agreements with each of its directors and executive officers, in addition to the indemnification provisions provided for in its charter documents, and the Company intends to enter into indemnification agreements with any new directors and executive officers in the future. These agreements will provide that we will indemnify each of our directors and executive officers, and such entities to the fullest extent permitted by law.

The underwriting agreement (to be filed as Exhibit 1.1 hereto) will provide for indemnification by the underwriters of the Company, and its executive officers and directors, and indemnification of the underwriters by the Company for certain liabilities, including liabilities arising under the Securities Act of 1933, as amended, in connection with matters specifically provided in writing by the underwriters for inclusion in the registration statement.

The Company intends to purchase and maintain insurance on behalf of any person who is or was a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in that capacity, subject to certain exclusions and limits of the amount of coverage.

Item 15. *Recent Sales of Unregistered Securities*

In the three years preceding the filing of this registration statement, we have issued the following securities that were not registered under the Securities Act:

Issuances of Capital Stock

On February 15, 2011, we issued an aggregate of 2,682,011 shares of our Series B redeemable convertible preferred stock to three investors for aggregate consideration of $2,024,999.

On June 30, 2011, we issued an aggregate of 6,716,624 shares of our Series C redeemable convertible preferred stock to six investors for aggregate consideration of $6,085,933. On December 1, 2011, we issued an aggregate of 2,207,260 of our Series C redeemable convertible preferred stock to two investors for aggregate consideration of $1,999,998. On February 1, 2012, we issued an aggregate of 7,808,400 shares of our Series C redeemable convertible preferred stock to six investors for aggregate consideration of $7,075,191.

On August 13, 2012 and November 8, 2012, we issued convertible promissory notes to two of our existing investors for an aggregate principal amount of $6,000,000. On November 30, 2012, we issued an aggregate of 4,975,260 shares of our Series D redeemable convertible preferred stock to such investors upon conversion of the notes.

On November 30, 2012, we issued an aggregate of 6,653,988 shares of our Series D redeemable convertible preferred stock to four investors for aggregate consideration of $9,044,101 in cash. On January 11, 2013, we issued an aggregate of 4,381,914 shares of our Series D redeemable convertible preferred stock to two investors for aggregate consideration of $5,955,898.

On November 25, 2013, we issued an aggregate of 16,110,473 shares of our Series E redeemable convertible preferred stock to eight investors for aggregate consideration of $35,000,002 in cash.

On February 28, 2014, we issued an aggregate of 204,101 shares of at Series E redeemable convertible preferred stock to four investors for aggregate consideration of $443,409 in cash.

No underwriters were used in the foregoing transactions. All sales of securities described above were made in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act (and/or Regulation D promulgated thereunder) for transactions by an issuer not involving a public offering. All of the foregoing securities are deemed restricted securities for the purposes of the Securities Act.

Grants of Stock Options

Since January 1, 2011, we have granted stock options to purchase an aggregate of 8,827,748 shares of our common stock, with exercise prices ranging from $0.25 to $1.54 per share, to employees, directors and consultants pursuant to our stock option plan. The issuances of these securities were exempt either pursuant to Rule 701, as a transaction pursuant to a compensatory benefit plan, or pursuant to Section 4(2), as a transaction by an issuer not involving a public offering.

Item 16. *Exhibits and Financial Statement Schedules*

(a) Exhibits.

The exhibits to the registration statement are listed in the Exhibit Index to this registration statement and are incorporated herein by reference.

(b) Financial Statement Schedules.

None.

Item 17. *Undertakings*

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(a) The undersigned Registrant will provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

(b) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form

of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(c) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on the 18th day of April, 2014.

ZAFGEN, INC.

By: /s/ Thomas E. Hughes

Thomas E. Hughes, Ph.D.
President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Thomas E. Hughes and Patricia L. Allen, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney in fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Registration Statement, including any and all post effective amendments and amendments thereto, and any registration statement relating to the same offering as this Registration Statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys in fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys in fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities indicated below on the 18th day of April, 2014.

Signature	Title	Date
/s/ Thomas E. Hughes THOMAS E. HUGHES, PH.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	April 18, 2014
/s/ Patricia L. Allen PATRICIA L. ALLEN	Chief Financial Officer (Principal Financial and Accounting Officer)	April 18, 2014
/s/ Peter Barrett PETER BARRETT, PH.D.	Chairman of the Board of Directors	April 18, 2014
/s/ Bruce Booth BRUCE BOOTH, PH.D.	Director	April 18, 2014
/s/ Avi Goldberg AVI GOLDBERG	Director	April 18, 2014
/s/ John L. LaMattina JOHN L. LAMATTINA, PH.D.	Director	April 18, 2014
/s/ Kevin P. Starr KEVIN P. STARR	Director	April 18, 2014
/s/ Lou Tartaglia LOU TARTAGLIA, PH.D.	Director	April 18, 2014

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EXHIBIT INDEX

Exhibit No.	Description
1.1*	Form of Underwriting Agreement
3.1	Seventh Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of the offering
3.3	Second Amended and Restated By-laws of the Registrant and the amendments thereto, as currently in effect
3.4*	Form of Amended and Restated By-laws of the Registrant, to be in effect upon completion of the offering
4.1*	Specimen Common Stock Certificate
4.2	Third Amended and Restated Investors' Rights Agreement by and among the Registrant and certain of its stockholders dated November 25, 2013
5.1*	Opinion of Goodwin Procter LLP
10.1#	Amended and Restated 2006 Stock Option Plan and forms of award agreements thereunder
10.2*#	2014 Stock Option and Incentive Plan and forms of award agreements thereunder
10.3†	Exclusive License Agreement by and between the Registrant and Chong Kun Dang Pharmaceutical Corp. of South Korea, dated July 6, 2009, as amended
10.4	Lease Agreement by and between the Company and MIT One Broadway LLC, dated July 8, 2011, as amended by First Amendment to Lease, dated June 20, 2013
10.5	Letter by and between the Registrant and Thomas E. Hughes, dated July 25, 2008
10.6	Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Thomas E. Hughes, dated July 29, 2008
10.7	Letter by and between the Registrant and Dennis D. Kim, dated August 23, 2011
10.8	Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Dennis D. Kim, dated August 29, 2013
10.9	Letter by and between the Registrant and Patricia L. Allen, dated December 10, 2012
10.10	Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Patricia L. Allen, dated August 29, 2013
10.11*	Form of Indemnification Agreement, to be entered into between the Registrant and its officers and directors
10.12*#	Senior Executive Cash Incentive Bonus Plan
10.13†	Exclusive License Agreement by and between the Registrant and Children's Medical Center Corporation, dated January 4, 2007, as amended January 15, 2007
21.1	Subsidiaries of the Registrant
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature page)

* To be filed by amendment.

† Application has been made to the Securities and Exchange Commission for confidential treatment of certain provisions. Omitted material for which confidential treatment has been requested has been filed separately with the Securities and Exchange Commission.

Represents management compensation plan.

EXHIBIT 3.1

SEVENTH AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
ZAFGEN, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Zafgen, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "**General Corporation Law**"),

DOES HEREBY CERTIFY:

1. That the name of this corporation is Zafgen, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on November 22, 2005 under the same name. That the Certificate of Incorporation of the Corporation was amended on December 9, 2005. An Amended and Restated Certificate of Incorporation was filed on August 17, 2006. A Second Amended and Restated Certificate of Incorporation was filed on May 24, 2007. A Third Amended and Restated Certificate of Incorporation was filed on October 23, 2007, and amended on November 7, 2008. A Fourth Amended and Restated Certificate of Incorporation was filed on February 17, 2010, and amended on April 28, 2010. A Fifth Amended and Restated Certificate of Incorporation was filed on June 30, 2011. A Sixth Amended and Restated Certificate of Incorporation was filed on November 30, 2012.

2. That the Board of Directors of the corporation duly adopted resolutions proposing to amend and restate the Sixth Amended and Restated Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Sixth Amended and Restated Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

FIRST: The name of this corporation is Zafgen, Inc. (the "**Corporation**")

SECOND: The address of the registered office of the Corporation in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, New Castle County, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 115,000,000 shares of Common Stock, $0.001 par value per share ("**Common Stock**"), and (ii) 99,292,610 shares of Preferred Stock, $0.001 par value per share (" **Preferred Stock**"), of which 5,363,239 such shares shall be designated as "**Series A Preferred Stock**," 40,266,246 shall be designated as "**Series B Preferred Stock**," 16,732,284 shall be designated as "**Series C Preferred Stock**," 16,011,162 shall be designated as "**Series D Preferred Stock**," and 20,919,679 shall be designated as "**Series E Preferred Stock**." Of the Series B Preferred Stock, 8,115,211 shares shall be designated as "**Series B-1 Preferred Stock**," 18,542,308 shares shall be designated as "**Series B-2 Preferred Stock**," 10,926,716 shares shall be designated as "**Series B-3 Preferred Stock**," and 2,682,011 shares shall be designated as "**Series B-4 Preferred Stock**."

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings); provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to the Corporation's Certificate of Incorporation (the "**Certificate of Incorporation**") that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the Certificate of Incorporation or pursuant to the General Corporation Law. There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of the Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

B. PREFERRED STOCK

Preferred Stock may be issued from time to time in one or more series, each of such series to consist of such number of shares and to have such terms, rights, powers and preferences, and the qualifications and limitations with respect thereto, as stated or expressed herein.

The Series A Preferred Stock, the Series B Preferred Stock, the Series C Preferred Stock, the Series D Preferred Stock and the Series E Preferred Stock shall have the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. The rights, preferences, powers, privileges and restrictions, qualifications and limitations of the Series B-1

Preferred Stock, Series B-2 Preferred Stock, Series B-3 Preferred Stock and Series B-4 Preferred Stock are identical. Unless otherwise indicated, references to "Sections" or "Subsections" in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

1. Dividends.

The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in the Certificate of Incorporation) the holders of the Preferred Stock then outstanding shall first receive a dividend on each outstanding share of Preferred Stock in an amount at least equal to (i) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Preferred Stock as would equal the product of (A) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (B) the number of shares of Common Stock issuable upon conversion of a share of Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (ii) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Preferred Stock determined by (A) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization affecting such shares) and (B) multiplying such fraction by an amount equal to the Series A Original Issue Price (as defined below), Series B Original Issue Price (as defined below), Series C Original Issue Price (as defined below), Series D Original Issue Price (as defined below) or Series E Original Issue Price (as defined below), as applicable; provided that, if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Preferred Stock dividend. The "**Series A Original Issue Price**" shall mean $0.419463 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock. The " **Series B Original Issue Price**" shall mean $0.75503 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock. The " **Series C Original Issue Price**" shall mean $0.90610 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series C Preferred Stock. The "**Series D Original Issue Price**" shall mean $1.3592 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series D Preferred Stock. The " **Series E Original Issue Price**" shall mean $2.1725 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series E Preferred Stock.

2. Liquidation, Dissolution or Winding-Up; Certain Mergers, Consolidations and Asset Sales.

2.1 Preferential Payments to Holders of Preferred Stock. In the event of any voluntary or involuntary liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event (as defined below), the holders of shares of Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the Series A Original Issue Price, Series B Original Issue Price, Series C Original Issue Price, Series D Original Issue Price or Series E Original Issue Price, as applicable, plus any dividends declared but unpaid thereon. If upon any such liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1, the holders of shares of Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.2 Distribution of Remaining Assets. In the event of any voluntary or involuntary liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event, after the payment of all preferential amounts required to be paid to the holders of shares of Preferred Stock, the remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of shares of Preferred Stock and Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of the Certificate of Incorporation immediately prior to such dissolution, liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event; provided, however, that if the aggregate amount which the holders of a series of Preferred Stock are entitled to receive under Subsections 2.1 and 2.2 shall exceed two (2) times the amount which such holders of such series of Preferred Stock are entitled to receive under Subsection 2.1 (subject to appropriate adjustment in the event of a stock split, stock dividend, combination, reclassification, or similar event affecting such series of Preferred Stock) (the "**Maximum Participation Amount**"), each holder of such series of Preferred Stock shall be entitled to receive upon such dissolution, liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event the greater of (i) the Maximum Participation Amount and (ii) the amount such holder would have received if such holder had converted his, her or its shares of such series of Preferred Stock into Common Stock immediately prior to such dissolution, liquidation, exclusive out-license of all or substantially all of the intellectual property of the Corporation, dissolution or winding-up of the Corporation or Deemed Liquidation Event. The aggregate amount which a holder of a share of Preferred Stock is entitled to receive under Subsections 2.1 and 2.2 is hereinafter referred to as the "**Preferred Stock Liquidation Amount**."

2.3 Deemed Liquidation Events.

2.3.1 Definition. Each of the following events shall be considered a "**Deemed Liquidation Event**" unless the holders of at least seventy percent (70%) of the then outstanding shares of Preferred Stock, voting together as a single class on an as-converted basis (the "**Required Preferred Vote**"), elect otherwise by written notice sent to the Corporation at least ten (10) days prior to the effective date of any such event:

(a) a merger or consolidation in which

(i) the Corporation is a constituent party or

(ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation (provided that, for the purpose of this Subsection 2.3.1, all shares of Common Stock issuable upon exercise of Options (as defined below) outstanding immediately prior to such merger or consolidation or upon conversion of Convertible Securities (as defined below) outstanding immediately prior to such merger or consolidation shall be deemed to be outstanding immediately prior to such merger or consolidation and, if applicable, converted or exchanged in such merger or consolidation on the same terms as the actual outstanding shares of Common Stock are converted or exchanged); or

(b) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole or the sale or disposition (whether by merger or otherwise) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation.

2.3.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(i) above unless the agreement or plan of merger or consolidation for such transaction (the "**Merger Agreement**") provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 above.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(ii) or 2.3.1(b) above, if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within 90 days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Preferred Stock no later than the 90th day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Preferred Stock, and (ii) if the holders of at least seventy percent (70%) of the then outstanding shares of Preferred Stock so request in a written instrument delivered to the Corporation not later than 120 days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation (the "**Board of Directors**")) (the "**Net Proceeds**"), to the extent legally available therefor, on the 150th day after such Deemed Liquidation Event, to redeem all outstanding shares of Preferred Stock at a price per share equal to the Preferred Stock Liquidation Amount. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the available Net Proceeds are not sufficient to redeem all outstanding shares of Preferred Stock or if the Corporation does not have sufficient lawfully available funds to effect such redemption, the Corporation shall redeem a pro rata portion of each holder's shares of Preferred Stock to the fullest extent of such available Net Proceeds or such lawfully available funds, as the case may be, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the legally available funds were sufficient to redeem all such shares, and shall redeem the remaining shares to have been redeemed as soon as practicable after the Corporation has funds legally available therefor. The provisions of Section 6 below shall apply, with such necessary changes in the details thereof as are necessitated by the context, to the redemption of the Preferred Stock pursuant to this Subsection 2.3.2(b). Prior to the distribution or redemption provided for in this Subsection 2.3.2(b), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event or in the ordinary course of business.

2.3.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, exclusive license, other disposition or redemption shall be the cash or the value of the property, rights or securities paid or distributed to such holders by the Corporation or the acquiring person, firm or other entity. The value of such property, rights or securities shall be determined in good faith by the Board of Directors.

2.3.4 Allocation of Escrow. In the case of a Deemed Liquidation Event pursuant to Subsection 2.3.1(a)(i) above, if any portion of the consideration payable to the stockholders of the Corporation is placed into escrow and/or is payable to the stockholders of the Corporation subject to contingencies, the Merger Agreement shall provide that (a) the portion of such consideration that is not placed in escrow and not subject to any contingencies (the "**Initial Consideration**") shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 above as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event and (b) any additional consideration which becomes payable to the stockholders of the Corporation upon release from

escrow or satisfaction of contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 above after taking into account the previous payment of the Initial Consideration as part of the same transaction. The result of this approach is that, for certain transactions, the portion of the transaction consideration that is subject to an escrow or other contingencies may be allocated disproportionately (or even exclusively) to the holders of Common Stock.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

3.2 Election of Directors. The holders of record of the shares of Series A Preferred Stock, exclusively and as a separate class, shall be entitled to elect two (2) directors of the Corporation (the "**Series A Directors**") and the holders of record of the shares of Series B Preferred Stock and Series C Preferred Stock, voting together as an exclusive and separate class, shall be entitled to elect two (2) directors of the Corporation (the " **Series B/C Directors**," and together with the Series A Directors, the "**Preferred Directors**"), and the holders of shares of Common Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation (the "**Common Director**"). Any Series A Director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of a majority of the then outstanding shares of Series A Preferred Stock, voting as a separate class, any Series B/C Director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of a majority of the then outstanding shares of Series B Preferred Stock and Series C Preferred Stock, voting together as a separate class on an as-converted basis, and any Common Director elected as provided in the preceding sentence may be removed without cause by and only by, the affirmative vote of the holders of a majority of the then outstanding shares of Common Stock, voting as a separate class, in any case given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. The holders of record of the shares of Common Stock and of any other class or series of voting stock (including the Preferred Stock), exclusively and voting together as a single class on an as-converted basis, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. A vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series or by any remaining director or directors elected by the holders of such class or series pursuant to this Subsection 3.2.

3.3 Preferred Stock Protective Provisions. At any time when shares of Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or the Certificate of Incorporation) the Required Preferred Vote:

(a) liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any Deemed Liquidation Event, or consent to any of the foregoing;

(b) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws of the Corporation, whether by merger, consolidation or otherwise;

(c) create, or authorize the creation of, or issue or obligate itself to issue shares of, or issue warrants or options to purchase shares of any additional class or series of capital stock unless the same ranks junior to the Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding-up of the Corporation, the payment of dividends and redemption rights, or increase the authorized number of shares of Preferred Stock or increase the authorized number of shares of any additional class or series of capital stock unless the same ranks junior to the Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding-up of the Corporation, the payment of dividends and redemption rights;

(d) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein, (ii) dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and (iii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof;

(e) reclassify any capital stock in a manner that alters the designations, preferences, powers and/or the relative, participating, optional or other special rights, or the restrictions provided for the benefit of, the Preferred Stock;

(f) create, or authorize the creation of, or issue, or authorize the issuance of any debt security, or permit any subsidiary to take any such action with respect to any debt security if the aggregate indebtedness of the Corporation and its subsidiaries for borrowed money following such action would exceed $250,000;

(g) create, or hold capital stock in, any subsidiary, whether or not wholly owned (either directly or through one or more other subsidiaries) by the Corporation, or sell, transfer or otherwise dispose of any capital stock of any direct or indirect subsidiary of the Corporation, or permit any direct or indirect subsidiary to sell, lease, transfer, exclusively license or otherwise dispose (in a single transaction or series of related transactions) of all or substantially all of the assets of such subsidiary;

(h) increase or decrease the authorized number of directors constituting the Board of Directors;

(i) grant, or authorize the grant of, an exclusive license relating to all or substantially all of the technology or intellectual property of the Corporation or any subsidiary thereof;

(j) enter into any transaction with any director, officer or employee of the Corporation or any "associate" (as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended) of any such person except transactions made in the ordinary course of business and pursuant to reasonable requirements of the Corporation's business and upon fair and reasonable terms that are approved by a majority of the Board of Directors;

(k) change the principal business of the Corporation, or enter new lines of business, or exit the current line of business;

(l) hire, fire or change the compensation of the Corporation's Chief Executive Officer;

(m) approve of the Corporation's annual budget (which budget must be submitted to the Board of Directors and the holders of Preferred Stock prior to the beginning of the Corporation's next fiscal year) (the "**Budget**"); or

(n) pay, invest or incur any indebtedness not provided for in the Budget that exceeds the Budget, in any one instance or in aggregate, by $50,000.

3.4 Series D Preferred Stock Protective Provision. At any time when shares of Series D Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, alter or change the powers, preferences or special rights of the shares of the Series D Preferred Stock so as to affect the class of Series D Preferred Stock adversely but not so affect the entire class of Preferred Stock, without the written consent of the holders of at least sixty-five percent (65%) of then outstanding Series D Preferred Stock, voting separately as a class; provided that for the avoidance of doubt, the authorization or issuance of any other series or class of capital stock ranking junior, *pari passu* or senior to the Series D Preferred Stock with respect to one or more powers, preferences or special rights shall not, in and of itself, be deemed to constitute an amendment, alteration or change of the powers, preferences or special rights of the Series D Preferred Stock that adversely affects the Series D Preferred Stock for purposes hereof.

3.5 Series E Preferred Stock Protective Provision. At any time when shares of Series E Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, alter or change the powers, preferences or special rights of the shares of the Series E Preferred Stock so as to affect the class of Series E Preferred Stock adversely but not so affect the entire class of Preferred Stock, without the written consent of the holders of at least a majority of the then outstanding Series E Preferred Stock, voting separately as a class; provided that for the avoidance of doubt, the authorization or issuance of any other series or class of capital stock ranking junior, *pari passu* or senior to the Series E Preferred Stock with respect to one or more powers, preferences or special rights shall not, in and of itself, be deemed to constitute an amendment, alteration or change of the powers, preferences or special rights of the Series E Preferred Stock that adversely affects the Series E Preferred Stock for purposes hereof.

4. Optional Conversion.

The holders of the Preferred Stock shall have conversion rights as follows (the " **Conversion Rights**"):

4.1 Right to Convert.

4.1.1 Conversion Ratio. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series A Original Issue Price by the Series A Conversion Price (as defined below) in effect at the time of conversion. The "**Series A Conversion Price**" shall initially be equal to $0.419463. Such Series A Conversion Price, and the rate at which shares of Series A Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series B Original Issue Price by the Series B Conversion Price (as defined below) in effect at the time of conversion. The " **Series B Conversion Price**" shall initially be equal to $0.75503. Such Series B Conversion Price, and the rate at which shares of Series B Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. Each share of Series C Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series C Original Issue Price by the Series C Conversion Price (as defined below) in effect at the time of conversion. The " **Series C Conversion Price**" shall initially be equal to $0.90610. Such Series C Conversion Price, and the rate at which shares of Series C Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. Each share of Series D Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series D Original Issue Price by the Series D Conversion Price (as defined below) in effect at the time of conversion. The "**Series D Conversion Price**" shall initially be equal to $1.3592. Such Series D Conversion Price, and the rate at which shares of Series D Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. Each share of Series E Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series E Original Issue Price by the Series E Conversion Price (as defined below) in effect at the time of conversion. The " **Series E Conversion Price**" shall initially be equal to $2.1725. Such Series E Conversion Price, and the rate at which shares of Series E Preferred Stock may be converted into shares of

Common Stock, shall be subject to adjustment as provided below. The "**Conversion Price**" shall mean the Series A Conversion Price, the Series B Conversion Price, the Series C Conversion Price, the Series D Conversion Price or the Series E Conversion Price, as applicable.

4.1.2 Termination of Conversion Rights. In the event of a notice of redemption of any shares of Preferred Stock pursuant to Section 6, the Conversion Rights of the shares designated for redemption shall terminate at the close of business on the last full day preceding the date fixed for redemption, unless the redemption price is not fully paid on such redemption date, in which case the Conversion Rights for such shares shall continue until such price is paid in full. In the event of a liquidation, dissolution or winding-up of the Corporation or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board of Directors. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall surrender the certificate or certificates for such shares of Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent), together with written notice that such holder elects to convert all or any number of the shares of the Preferred Stock represented by such certificate or certificates and, if applicable, any event on which such conversion is contingent. Such notice shall state such holder's name or the names of the nominees in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. If required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation; duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such certificates (or lost certificate affidavit and agreement) and notice shall be the time of conversion (the " **Conversion Time**"), and the shares of Common Stock issuable upon conversion of the shares represented by such certificate shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time, issue and deliver to such holder of Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full

shares of Common Stock issuable upon such conversion in accordance with the provisions hereof, a certificate for the number (if any) of the shares of Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, and cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and payment of any declared but unpaid dividends on the shares of Preferred Stock converted.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to the Certificate of Incorporation. Before taking any action which would cause an adjustment reducing the Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and nonassessable shares of Common Stock at such adjusted Conversion Price.

4.3.3 Effect of Conversion. All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor and to receive payment for fractional shares as provided in Section 4.2 and payment of any dividends declared but unpaid thereon. Any shares of Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to the Conversion Price shall be made for any declared but unpaid dividends on the Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Conversion Price for Diluting Issues .

4.4.1 Special Definitions. For purposes of this Article Fourth, the following definitions shall apply:

(a) "**Option**" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) "**Series E Original Issuance Date**" shall mean the date on which the first share of Series E Preferred Stock was issued.

(c) "**Convertible Securities**" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) "**Additional Shares of Common Stock**" shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Series E Original Issuance Date, other than the following shares of Common Stock, and shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (collectively " **Exempted Securities**"):

(i) shares of Common Stock, Options or Convertible Securities issued ratably as a dividend or distribution on all shares of Preferred Stock;

(ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4.5, 4.6, 4.7 or 4.8 below;

(iii) shares (as appropriately adjusted in the event of any stock dividend, stock split, combination or other similar recapitalization) of Common Stock or Options therefor issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors, including the approval of the Preferred Directors, and the Required Preferred Vote;

(iv) shares of Common Stock, Options or Convertible Securities issued in connection with sponsored research, collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships approved by the Board of Directors, including the approval of the Preferred Directors;

(v) shares of Common Stock or Convertible Securities issued to a strategic investor pursuant to a transaction approved by the Board of Directors, including the approval of the Preferred Directors;

(vi) shares of Common Stock issued in the Company initial public offering, including the offering specified in Section 5.1;

(vii) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security;

(viii) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction approved by the Board of Directors, including the approval of the Preferred Directors; or

(ix) shares of Series E Preferred Stock issued at the Subsequent Closing (as defined in that certain Series E Preferred Stock Purchase Agreement by and among the Corporation and the parties named therein, dated November 22, 2013 (as amended, restated or otherwise modified from time to time, the "**Purchase Agreement**")).

4.4.2 No Adjustment of Conversion Price. No adjustment in the Series A Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least a majority of the then outstanding shares of Series A Preferred Stock voting separately as a class with respect to the Series A Conversion Price, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock. No adjustment in the Series B Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least seventy percent (70%) of the then outstanding shares of the Series B Preferred Stock, voting separately as a class with respect to the Series B Conversion Price, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock. No adjustment in the Series C Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least seventy percent (70%) of the then outstanding shares of the Series C Preferred Stock, voting separately as a class with respect to the Series C Conversion Price, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock. No adjustment in the Series D Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the

Corporation receives written notice from the holders of at least sixty-five percent (65%) of the then outstanding shares of the Series D Preferred Stock, voting separately as a class with respect to the Series D Conversion Price, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock. No adjustment in the Series E Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least a majority of the then outstanding shares of the Series E Preferred Stock, voting separately as a class with respect to the Series E Conversion Price, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Series E Original Issuance Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the applicable Conversion Price for any series of Preferred Stock pursuant to the terms of Subsection 4.4.4 below, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the applicable Conversion Price for any series of Preferred Stock computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing the applicable Conversion Price for any series of Preferred Stock to an amount which exceeds the lower of (i) the applicable Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the applicable Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the applicable Conversion Price for any series of Preferred Stock pursuant to the terms of Subsection 4.4.4 below (either because the consideration per share (determined pursuant to Subsection 4.4.5 hereof) of the Additional Shares of Common Stock subject thereto was equal to or greater than the applicable Conversion Price then in effect, or because such Option or Convertible Security was issued before the Series E Original Issuance Date), are revised after the Series E Original Issuance Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a) above) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to any Conversion Price pursuant to the terms of Subsection 4.4.4 below, such Conversion Price shall be readjusted to the Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the applicable Conversion Price provided for in this Subsection 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3. If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the applicable Conversion Price that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the applicable Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Conversion Price Upon Issuance of Additional Shares of Common Stock . In the event the Corporation shall at any time after the Series E Original Issuance Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than any Conversion Price in effect immediately prior to such issue, then any such Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = \frac{(CP_1 * (A+B)}{(A+C)}$$

For purposes of the foregoing formula, the following definitions shall apply:

(a) "**CP2**" shall mean such Conversion Price in effect immediately after such issue of Additional Shares of Common Stock.

(b) "**CP1**" shall mean such Conversion Price in effect immediately before such issue of Additional Shares of Common Stock.

(c) "**A**" shall mean the number of shares of Common Stock outstanding immediately prior to such issue of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issue or upon conversion or exchange of Convertible Securities (including the Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue).

(d) "**B**" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued at a price per share equal to CP1 (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP1);

(e) "**C"** shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration . For purposes of this Subsection 4.4, the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

(i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board of Directors.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing

(i) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to any Conversion Price pursuant to the terms of Subsection 4.4.4 above, then, upon the final such issuance, such Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series E Original Issuance Date effect a subdivision of the outstanding Common Stock, each applicable Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series E Original Issuance Date combine the outstanding shares of Common Stock, each applicable Conversion Price in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series E Original Issuance Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event each applicable Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying such Conversion Price then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing, (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, each applicable Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter such Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) that no such adjustment shall be made if the holders of Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series E Original Issuance Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a

dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.3, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock issuable upon conversion of one share of Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of each applicable Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Preferred Stock.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of each applicable Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which the Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Preferred Stock (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to such holder a certificate setting forth the applicable Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Deemed Liquidation Event; or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to the Preferred Stock and the Common Stock. Such notice shall be sent at least 20 days prior to the record date or effective date for the event specified in such notice.

5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) the closing of the sale of shares of Common Stock to the public, in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least $35 million of proceeds, net of the underwriting discount and commissions, to the Corporation or (b) the date and time, or the occurrence of an event, specified by the Required Preferred Vote (the time of such closing or the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the " **Mandatory Conversion Time**"), (i) all outstanding shares of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Preferred Stock shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice, and shall thereafter receive certificates for the number of shares of Common Stock to which such holder is entitled pursuant to this Section 5. At the Mandatory Conversion Time, all outstanding shares of Preferred Stock shall be deemed to have been

converted into shares of Common Stock, which shall be deemed to be outstanding of record, and all rights with respect to the Preferred Stock so converted, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate, except only the rights of the holders thereof, upon surrender of their certificate or certificates (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the last sentence of this Subsection 5.2. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. As soon as practicable after the Mandatory Conversion Time and the surrender of the certificate or certificates (or lost certificate affidavit and agreement) for Preferred Stock, the Corporation shall issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof, together with cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Preferred Stock converted.

5.3 Effect of Mandatory Conversion. All shares of Preferred Stock shall, from and after the Mandatory Conversion Time, no longer be deemed to be outstanding and, notwithstanding the failure of the holder or holders thereof to surrender the certificates for such shares on or prior to such time, all rights with respect to such shares shall immediately cease and terminate at the Mandatory Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor and to receive payment for any fractional shares pursuant to Section 4.2 and payment of any dividends declared but unpaid thereon. Such converted Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

5A. Special Mandatory Conversion. In the event that any Purchaser (as defined in the Purchase Agreement) does not purchase the number of shares of Series E Preferred Stock that such Purchaser has committed to purchase at the Subsequent Closing (as defined in the Purchase Agreement) as set forth on Exhibit A to the Purchase Agreement, then each share of Preferred Stock held by such Purchaser shall automatically, and without any further action on the part of such Purchaser, be converted into shares of Common Stock at the Series A Conversion Price, Series B Conversion Price, Series C Conversion Price, Series D Conversion Price or Series E Conversion Price, as applicable, in effect immediately prior to the Subsequent Closing, effective upon the close of business on the date set by the Board of Directors for the Subsequent Closing.

6. Redemption.

6.1 Redemption. Shares of Preferred Stock shall be redeemed by the Corporation out of funds lawfully available therefor at a price equal to the Series A Original Issue Price per share in the case of the Series A Preferred Stock, the Series B Original Issue Price per share in the case of the Series B Preferred Stock, the Series C Original Issue Price per share in the case of the Series C Preferred Stock, the Series D Original Issue Price per share in the case of the Series D Preferred Stock and the Series E Original Issue Price per share in the case of the Series E

Preferred Stock, plus all declared but unpaid dividends thereon (the " **Redemption Price**"), in three annual installments commencing sixty (60) days after receipt by the Corporation at any time on or after November 22, 2017, from the Required Preferred Vote, of written notice requesting redemption of all shares of Preferred Stock (the date of each such installment being referred to as a " **Redemption Date**"). On each Redemption Date, the Corporation shall redeem, on a pro rata basis in accordance with the number of shares of Preferred Stock owned by each holder, that number of outstanding shares of Preferred Stock determined by dividing (i) the total number of shares of Preferred Stock outstanding immediately prior to such Redemption Date by (ii) the number of remaining Redemption Dates (including the Redemption Date to which such calculation applies). lf the Corporation does not have sufficient funds legally available to redeem on any Redemption Date all shares of Preferred Stock to be redeemed on such Redemption Date, the Corporation shall redeem a pro rata portion of each holder's redeemable shares of such Preferred Stock out of funds legally available therefor, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the legally available funds were sufficient to redeem all such shares, and shall redeem the remaining shares to have been redeemed as soon as practicable after the Corporation has funds legally available therefor.

6.2 Redemption Notice. Written notice of the mandatory redemption (the "**Redemption Notice**") shall be sent to each holder of record of Preferred Stock not less than forty (40) days prior to each Redemption Date. Each Redemption Notice shall state:

(a) the number of shares of Preferred Stock held by the holder that the Corporation shall redeem on the Redemption Date specified in the Redemption Notice;

(b) the Redemption Date and the Redemption Price;

(c) the date upon which the holder's right to convert such shares terminates (as determined in accordance with Subsection 4.1); and

(d) that the holder is to surrender to the Corporation, in the manner and at the place designated, his, her or its certificate or certificates representing the shares of Preferred Stock to be redeemed.

6.3 Interest. If any shares of Preferred Stock required to be redeemed on any Redemption Date are not redeemed on such Redemption Date for any reason, all such unredeemed shares shall remain outstanding and entitled to all the rights and preferences provided herein, and the Corporation shall pay interest on the Redemption Price applicable to such unredeemed shares at an aggregate per annum rate equal to fifteen percent (15%), with such interest to accrue daily in arrears and to be compounded quarterly; provided, however, that in no event shall such interest exceed the maximum permitted rate of interest under applicable law (the "**Maximum Permitted Rate**"). In the event that fulfillment of any provision hereof results in such rate of interest being in excess of the Maximum Permitted Rate, the amount of interest required to be paid hereunder shall automatically be reduced to eliminate such excess; provided, however, that any subsequent increase in the Maximum Permitted Rate shall be retroactively effective to the applicable Redemption Date to the extent permitted by law.

6.4 Right to Elect Additional Directors. If any shares of Preferred Stock required to be redeemed on any Redemption Date are not redeemed within ninety (90) days following such Redemption Date for any reason, the number of directors constituting the Board of Directors shall automatically be increased by a number equal to the number of directors then constituting the Board of Directors, plus one (1), and the Required Preferred Vote, shall be allowed to elect such additional directors. For the avoidance of doubt, if the Board of Directors consisted of four (4) directors prior to the expiration of such 90-day period, the number of directors would be increased by five (5) to a total of nine (9), with all of such new directors elected by the Required Preferred Vote. The period beginning on the date that the number of directors is so increased and ending on the date upon which all shares of Preferred Stock required to be redeemed are so redeemed is referred to herein as the "**Voting Period**."

6.4.1 As soon as practicable after the commencement of the Voting Period, the Corporation shall call a special meeting of the holders of outstanding shares of Preferred Stock to be held not more than ten (10) days after the date of mailing of notice of such meeting. If the Corporation fails to send a notice, any such holder may call the meeting on like notice. The record date for determining the holders of Preferred Stock entitled to notice of and to vote at such special meeting shall be the close of business on the fifth (5th) business day preceding the day on which such notice is mailed. At any such special meeting and at each meeting of holders of shares of Preferred Stock held during a Voting Period at which directors are to be elected (or with respect to any action by written consent in lieu of a meeting of stockholders), such holders, voting together as a single class to the exclusion of the holders of all other securities and classes of capital stock of the Corporation, shall be entitled to elect the number of directors prescribed in this Section 6.4, and each share of Preferred Stock shall be entitled to one (1) vote (whether voted in person by the holder thereof or by proxy or pursuant to a stockholders consent).

6.4.2 The terms of office of all persons who are incumbent directors of the Corporation at the time of a special meeting of the holders of Preferred Stock to elect such additional directors shall continue, notwithstanding the election at such meeting of the additional directors that such holders are entitled to elect, and the additional directors so elected by such holders, together with such incumbent directors, shall constitute the duly elected directors of the Corporation. Simultaneously with the termination of a Voting Period, the terms of office of the additional directors elected by the holders of the Preferred Stock shall terminate, such incumbent directors shall constitute the directors of the Corporation until otherwise voted by the stockholders of the Company and the rights of the holders of Preferred Stock to elect additional directors pursuant to this Section 6.4 shall cease.

6.5 Surrender of Certificates Payment. On or before the applicable Redemption Date, each holder of shares of Preferred Stock to be redeemed on such Redemption Date, unless such holder has exercised his, her or its right to convert such shares as provided in Section 4, shall surrender the certificate or certificates representing such shares (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation, in the manner and at the place designated in the Redemption Notice, and thereupon the Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner

thereof. In the event less than all of the shares of Preferred Stock represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Preferred Stock shall promptly be issued to such holder.

6.6 Rights Subsequent to Redemption. If the Redemption Notice shall have been duly given, and if on the applicable Redemption Date the Redemption Price payable upon redemption of the shares of Preferred Stock to be redeemed on such Redemption Date is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor, then notwithstanding that the certificates evidencing any of the shares of Preferred Stock so called for redemption shall not have been surrendered, dividends with respect to such shares of Preferred Stock shall cease to accrue after such Redemption Date and all rights with respect to such shares shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest upon surrender of their certificate or certificates therefore.

7. Redeemed or Otherwise Acquired Shares.

Any shares of Preferred Stock which are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Preferred Stock following redemption.

8. Waiver.

Except as otherwise set forth herein, any of the rights, powers, preferences and other terms of the Preferred Stock set forth herein may be waived on behalf of all holders of Preferred Stock by the affirmative written consent or vote of the Required Preferred Vote.

9. Notices.

Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

FIFTH: Subject to any additional vote required by the Certificate of Incorporation, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of the Corporation.

SIXTH: Subject to any additional vote required by the Certificate of Incorporation, the number of directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation.

SEVENTH: Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

EIGHTH: Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

NINTH: To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article Ninth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any repeal or modification of the foregoing provisions of this Article Ninth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

TENTH: The following indemnification provisions shall apply to the persons enumerated below.

1. Right to Indemnification of Directors and Officers. The Corporation shall indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person (an " **Indemnified Person**") who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a " **Proceeding**"), by reason of the fact that such person, or a person for whom such person is the legal representative, is or was a director or officer of the Corporation or, while a director or officer of the Corporation, is or was serving at the request of the Corporation as a director, officer, employee or agent of another Corporation or of a partnership, joint venture, limited liability company, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such Indemnified Person in such Proceeding. Notwithstanding the preceding sentence, except as otherwise provided in Section 3 of this Article Tenth, the Corporation shall be required to indemnify an Indemnified Person in connection with a Proceeding (or part thereof) commenced by such Indemnified Person only if the commencement of such Proceeding (or part thereof) by the Indemnified Person was authorized in advance by the Board of Directors.

2. Prepayment of Expenses of Directors and Officers. The Corporation shall pay the expenses (including attorneys' fees) incurred by an Indemnified Person in defending any Proceeding in advance of its final disposition, provided, however, that, to the extent required by law, such payment of expenses in advance of the final disposition of the Proceeding shall be made only upon receipt of an undertaking by the Indemnified Person to repay all amounts advanced if it should be ultimately determined that the Indemnified Person is not entitled to be indemnified under this Article Tenth or otherwise.

3. Claims by Directors and Officers. If a claim for indemnification or advancement of expenses under this Article Tenth is not paid in full within thirty (30) days after a written claim therefor by the Indemnified Person has been received by the Corporation, the Indemnified Person may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expense of prosecuting such claim. In any such action the Corporation shall have the burden of proving that the Indemnified Person is not entitled to the requested indemnification or advancement of expenses under applicable law.

4. Indemnification of Employees and Agents. The Corporation may indemnify and advance expenses to any person who was or is made or is threatened to be made or is otherwise involved in any Proceeding by reason of the fact that such person, or a person for whom such person is the legal representative, is or was an employee or agent of the Corporation or, while an employee or agent of the Corporation, is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, limited liability company, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorney's fees) reasonably incurred by such person in connection with such Proceeding. The ultimate determination of entitlement to indemnification of persons who are non-director or officer employees or agents shall be made in such manner as is determined by the Board of Directors in its sole discretion. Notwithstanding the foregoing sentence, the Corporation shall not be required to indemnify a person in connection with a Proceeding initiated by such person if the Proceeding was not authorized in advance by the Board of Directors.

5. Advancement of Expenses of Employees and Agents. The Corporation may pay the expenses (including attorney's fees) incurred by an employee or agent in defending any Proceeding in advance of its final disposition on such terms and conditions as may be determined by the Board of Directors.

6. Non-Exclusivity of Rights. The rights conferred on any person by this Article Tenth shall not be exclusive of any other rights which such person may have or hereafter acquire under any statute, provision of the certificate of incorporation, these by-laws, agreement, vote of stockholders or disinterested directors or otherwise.

7. Other Indemnification. The Corporation's obligation, if any, to indemnify any person who was or is serving at its request as a director, officer or employee of another Corporation, partnership, limited liability company, joint venture, trust, organization or other enterprise shall be reduced by any amount such person may collect as indemnification from such other Corporation, partnership, limited liability company, joint venture, trust, organization or other enterprise.

8. Insurance. The Board of Directors may, to the full extent permitted by applicable law as it presently exists, or may hereafter be amended from time to time, authorize an appropriate officer or officers to purchase and maintain at the Corporation's expense insurance: (a) to indemnify the Corporation for any obligation which it incurs as a result of the indemnification of directors, officers and employees under the provisions of this Article Tenth; and (b) to indemnify or insure directors, officers and employees against liability in instances in which they may not otherwise be indemnified by the Corporation under the provisions of this Article Tenth.

9. Amendment or Repeal. Any repeal or modification of the foregoing provisions of this Article Tenth shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to the time of such repeal or modification. The rights provided hereunder shall inure to the benefit of any Indemnified Person and such person's heirs, executors and administrators.

ELEVENTH: The Corporation renounces any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An "**Excluded Opportunity**" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, "**Covered Persons**"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Corporation or as a holder of Preferred Stock or a partner, member, director, stockholder, employee or agent thereof.

* * *

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Seventh Amended and Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this corporation's Sixth Amended and Restated Certificate of Incorporation has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Seventh Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 22nd day of November, 2013.

By: /s/ Thomas Hughes

Thomas Hughes
President and CEO

EXHIBIT 3.3

SECOND AMENDED AND RESTATED BY-LAWS

OF

ZAFGEN, INC.

ARTICLE I

FISCAL YEAR

The fiscal year of Zafgen, Inc. (the "Corporation") shall be the twelve months ending on the last day of December.

ARTICLE II

STOCKHOLDERS

Section 1. Annual Meeting.

The annual meeting of stockholders shall be held not later than thirteen (13) months after the latest of the organization of the Corporation, its last annual meeting or the last vote or action by written consent to elect directors in lieu of an annual meeting, at the date and hour fixed by the Directors or the President and stated in the notice of the meeting. The purposes for which the annual meeting is to be held, in addition to those prescribed by law, by the Certificate of Incorporation or by these By-laws, may be specified by the Directors or the President. If no annual meeting is held in accordance with the foregoing provisions, a special meeting may be held in lieu thereof, and any action taken at such meeting shall have the same effect as if taken at the annual meeting.

Section 2. Special Meetings.

Special meetings of the stockholders may be called by the President, Secretary or by a majority of the Directors acting by vote or by written instrument(s) signed by such a majority of them.

Section 3. Place of Meetings.

All meetings of stockholders shall be held at the principal office of the Corporation unless a different place is fixed by the Directors or the President and stated in the notice of the meeting. The Board of Directors is authorized to determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication provided that (i) the Corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or a proxyholder, (ii) the Corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings, and (iii) if any stockholder or a proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the Corporation.

Section 4. Notices.

Notice of all meetings of stockholders shall be given as follows: A written notice, stating the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. Notices shall be given by the Board of Directors, the President, Secretary or an Assistant Secretary, not less ten (10) days nor more than sixty (60) days before the meeting unless otherwise provided in Delaware General Corporation Law, to each stockholder entitled to vote thereat. If mailed, notice is given when deposited in the United Sates mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the Corporation. Notices of all meetings of stockholders shall state the purposes for which the meetings are called

When a meeting is adjourned to another time or place, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communication, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting the Corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Without limiting the manner by which notice otherwise may be given effectively to stockholders and other then notices under sections 164, 296, 311, 312 or 324 of the Delaware General Corporation Law, any notice to stockholders given by the Corporation shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the Corporation. Any such consent shall be deemed revoked if the Corporation is unable to deliver by electronic transmission two consecutive notices given by the Corporation in accordance with such consent.

It shall be the responsibility of each stockholder to notify the Corporation of the post office address to which that stockholder wishes all communications by the Corporation addressed and delivered.

Whenever notice is required to be given under any provision of the Delaware General Corporation Law, certificate of incorporation or bylaws, a written waiver signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice.

Section 5. Quorum.

Subject to quorum requirement for special actions under the law, at any meeting of stockholders, a quorum for the transaction of business shall consist of one or more individuals appearing in person and/or as proxies and owning and/or representing at least fifty percent (50%)

of the shares of the Corporation then outstanding and entitled to vote. Any meeting may be adjourned from time to time by majority vote properly cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice if the time, place, if any, thereof, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken.

Section 6. Voting and Proxies.

Each stockholder shall have one vote for each share of stock entitled to vote, and a proportionate vote for any fractional share entitled to vote, held by him of record according to the records of the Corporation, unless otherwise provided by the Certificate of Incorporation. Stockholders may vote either in person or by written proxy dated not more than three (3) years unless the proxy provides for a longer period.

Proxies shall be filed with the Secretary or other person responsible for recording the proceedings before being voted at any meeting or any adjournment thereof.

A stockholder may execute a writing authorizing another person or persons to act for such stockholder as proxy. Execution may be accomplished by the stockholder or such stockholder's authorized officer, director, employee or agent signing such writing or causing such person's signature to be affixed to such writing by any reasonable means including, without limitation, by facsimile signature. A stockholder may also authorize another person or persons to act for such stockholder as proxy by transmitting or authorizing the transmission of a telegram, cablegram, or other means of electronic transmission to the person who will be the holder of the proxy or to a proxy solicitation firm, proxy support service organization or like agent duly authorized by the person who will be the holder of the proxy to receive such transmission, provided that any such telegram, cablegram or other means of electronic transmission must either set forth or be submitted with information from which it can be determined that the telegram, cablegram or other electronic transmission was authorized by the stockholder. If it is determined that such telegrams, cablegrams or other electronic transmissions are valid, the inspectors or, if there are no inspectors, such other persons making the determination shall specify the information upon which they relied. Any copy, facsimile telecommunication or other reliable reproduction of the writing or transmission created pursuant to Section 212(c) of the Delaware General Corporation Law may be substituted or used in lieu of the original writing or transmission for any and all purposes for which the original writing or transmission could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original writing or transmission. A duly executed proxy shall be irrevocable if it states that it is irrevocable and, if, and only as long as, it is coupled with an interest sufficient in law to support an irrevocable power. A proxy may be made irrevocable regardless of whether the interest with which it is coupled is an interest in the stock itself or an interest in the Corporation generally.

Section 7. Action at Meeting.

When a quorum is present, the action of the stockholders on all matters, other than the election of directors, properly brought before such meeting shall be decided by the stockholders holding a majority of the stock present or represented by proxy and entitled to vote and voting on such matter, except where a different vote is required by law, the Certificate of Incorporation, these By-laws, or by any written agreement to which the Corporation and its stockholders are bound. Directors shall be elected by a plurality of the votes of the shares present in person, participating by telephone or other electronic means or communication permitted hereunder, or represented by proxy at the meeting and entitled to vote on the election of directors. No ballot shall be required for the election of directors unless requested by a stockholder present or represented at the meeting and entitled to vote in the election.

Section 8. Special Action.

Unless otherwise provided in the Certificate of Incorporation, any action required by the General Corporation Law to be taken at any annual or special meeting of stockholders, or any action which may be taken at any annual or special meeting of stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the Corporation can determine that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. Action taken pursuant to this paragraph shall be subject to the provisions of Section 228 of the General Corporation Law.

Section 9. Record Date.

In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall not be more than sixty nor less than ten days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

In order that the Corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which date shall not be more than ten days after the date upon which the resolution fixing the record date is adopted by the Board of Directors. If no record date has been fixed by the Board of Directors, the record date for determining the stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is required by the General Corporation Law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the Corporation by delivery to its principal place of business or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. If no record date has been fixed by the Board of Directors and prior action by the Board of Directors is required by the Delaware General Corporation Law, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action.

In order that the Corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion, or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

ARTICLE III

DIRECTORS

Section 1. Powers.

The business of the Corporation shall be managed by or under the direction of the Board of Directors, except as may be otherwise provided by the Delaware General Corporation Law or in its Certificate of Incorporation.

The Board of Directors shall have the authority to fix the compensation of the members thereof.

Section 2. Election.

The number of directors which shall constitute the whole board shall be not less than one nor more than nine. Within the limits above specified, the number of directors shall be determined by resolution of the board of directors or by the stockholders at the annual meeting. The directors shall be elected at the annual meeting of the stockholders or by written consent in lieu of an annual meeting, except as provided in Section 2 of this Article, and each director elected shall hold office until his successor is elected and qualified. Directors need not be stockholders.

Section 3. Quorum.

At any meeting of the Directors a majority of the Directors shall constitute a quorum for the transaction of business.

Section 4. Vacancies.

Vacancies and newly created directorships resulting from any increase in the authorized number of directors may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. The directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced. If there are no directors in office, then an election of directors may be held in the manner provided by statute.

Section 5. Enlargement of the Board.

The number of directors which shall constitute the whole Board of Directors may be increased and one or more additional Directors elected at any special meeting of the stockholders, called at least in part for the purpose, or by the Directors by vote of all of the Directors then in office. The stockholders may, by majority vote, overrule any such increase approved by the Directors.

Section 6. Tenure.

Except as otherwise provided by law, by the Certificate of Incorporation, or by these By-laws, a Director shall hold office until the earlier of his resignation, death, or removal. Any Director may resign by delivering his written resignation or by electronic transmission to the Corporation at its principal office or to the President or Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

Section 7. Removal.

Any Director or the entire Board may be removed from office with or without cause by vote of stockholders holding a majority of the shares entitled to vote in the election of Directors.

Section 8. Regular Meetings.

Regular meetings of the Directors may be held at such times and places as shall from time to time be fixed and scheduled by resolution of the Board. No notice need be given of regular meetings held at times and places so fixed and scheduled. If at any meeting of Directors at which a resolution is adopted fixing the times or place or places for any regular meetings any Director is absent, no meeting shall be held pursuant to such resolution until either each such absent Director has been notified of the change in writing by the Secretary on seven (7) days notice.

Section 9. Special Meetings.

Special meetings of the Directors may be called by the President or by the Treasurer or by any Director and shall be held at the place designated in the call thereof.

Section 10. Notice of Special Meetings.

Notices of any special meeting of the Directors shall be given by the Secretary or any Assistant Secretary to each Director, by delivering to him, postage or delivery charges prepaid, and addressed to him at his address, electronic mail address, or facsimile number as registered on the books of the Corporation, at least forty-eight hours before the meeting, notice of such meeting. Such delivery may be made by hand, overnight courier, facsimile, electronic mail, or by regular mail, but if made by the latter shall not be effective unless placed in the mail at least five (5) days before the date of the meeting. If the Secretary refuses or neglects for more than twenty-four hours after receipt of the call to give notice of such special meeting, or if the office of Secretary is vacant or the Secretary is absent from the principal office of the Corporation, or incapacitated, such notice may be given by the officer or Directors calling the meeting. Notice need not be given to any Director if a waiver of notice in writing, executed by him before or after the meeting, is filed with the records of the meeting, or to any director who is present in person at the meeting without protesting prior thereto or at its commencement the lack of notice to him. A notice or waiver of notice of a Directors' meeting need not specify the purposes of the meeting.

It shall be the responsibility of each director to notify the Corporation of the post office address to which that director wishes all communications by the Corporation addressed and delivered.

Section 11. Action at Meeting.

At any meeting of the Directors at which a quorum is present, the action of the Directors on any matter brought before the meeting shall be decided by the vote of a majority of those present and voting, unless a different vote is required by law, the Certificate of Incorporation, or these By-laws.

Section 12. Participation by Telephone at a Meeting.

Any Director or member of any committee designated by the Directors may participate in a meeting of the Directors or committee by means of a conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other at the same time, and participation by such means shall constitute presence in person at a meeting for all purposes, including without limitation, for purposes of Sections 3, 10, 11 and 14 of this Article.

Section 13. Special Action.

Any action by the Directors or any Committee thereof may be taken without a meeting if all the members of the Board of Directors or the Committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Directors' meetings. Such consent shall be treated as a vote of the Directors for all purposes.

Section 14. Committees.

The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the Corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of any member of any such committee or committees, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the Corporation with the exception of any power or authority the delegation of which is prohibited by Section 141 of the General Corporation Law, and may authorize the seal of the Corporation to be affixed to all papers which may require it.

Section 15. Chairperson.

The Directors may elect from their number a Chairperson of the Board who shall preside at all meetings of the Board of Directors and may have such additional powers and responsibilities, executive or otherwise, as may from time to time be vested in him by resolution of the Board of Directors.

ARTICLE IV

OFFICERS

Section 1. Enumeration.

The officers of the Corporation may include a President, a Treasurer, a Secretary, and such Vice Presidents, Assistant Treasurers, Assistant Secretaries, and other officers as may from time to time be determined by the Directors.

Section 2. Election.

The President, Treasurer, and Secretary shall be elected by the Directors. Other officers may be chosen by the incorporator(s) at their initial meeting and by the Directors.

Section 3. Qualification.

Any officer may, but need not be, a Director or a stockholder. Any two or more offices may be held by the same person. Any officer may be required by the Directors to give bond for the faithful performance of his duties to the Corporation in such amount and with such sureties as the Directors may determine.

Section 4. Tenure.

Except as otherwise provided by law, by the Certificate of Incorporation or by these By-laws, the officers shall hold office until the earliest of his resignation, death, or replacement, or the expiration of his term. Any officer may resign by delivering his written resignation to the Corporation at its principal office or to the President or Secretary, and such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

Section 5. Removal.

The Directors may remove any officer with or without cause by a vote of a majority of the entire number of Directors then in office.

Section 6. President.

The President when present shall preside at all meetings of the stockholders and of the Directors. It shall be his duty and he shall have the power to see that all orders and resolutions of the Directors are carried into effect. The President shall from time to time report to the Directors all matters within his knowledge which the interests of the Corporation may require to be brought to its notice. The President shall perform such duties and have such powers additional to the foregoing as the Directors shall designate.

Section 7. Vice Presidents.

In the absence or disability of the President or a vacancy in such office, his powers and duties shall be performed by the Vice President, if only one, or, if more than one, by the one designated for the purpose by the Directors. Each Vice President shall have such other powers and perform such other duties as the Directors shall from time to time designate.

Section 8. Treasurer.

The Treasurer shall keep full and accurate accounts of receipts and disbursements in books belonging to the Corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the Corporation in such depositories as shall be designated by the Directors or, in the absence of such designation, in such depositories as he shall from time to time deem proper. He shall disburse the funds of the Corporation as shall be ordered by the Directors, taking proper vouchers for such disbursements. He shall promptly render to the President and to the Directors such statements of his transactions and accounts as the President and Directors respectively may from time to time require. The Treasurer shall perform such duties and have such powers additional to the foregoing as the Directors may designate.

Section 9. Assistant Treasurers.

In the absence or disability of the Treasurer, his powers and duties shall be performed by the Assistant Treasurer, if only one, or, if more than one, by the one designated for the purpose by the Directors. Each Assistant Treasurer shall have such other powers and perform such other duties as the Directors shall from time to time designate.

Section 10. Secretary.

The Secretary shall record in books kept for the purpose all votes and proceedings of the stockholders and shall record as aforesaid all votes and proceedings of the Directors at their meetings. Unless the Directors shall appoint a transfer agent and/or registrar or other officer or officers for the purpose, the Secretary shall be charged with the duty of keeping, or causing to be kept, accurate records of all stock outstanding, stock certificates issued and stock transfers and, subject to such other or different rules as shall be adopted from time to time by the Directors, such records may be kept solely in the stock certificate books. The Secretary shall perform such duties and have such powers additional to the foregoing as the Directors shall designate.

Section 11. Assistant Secretaries.

In the absence or disability of the Secretary or in the event of a vacancy in such office, the Assistant Secretary, if one be elected, or, if there be more than one, the one designated for the purpose by the Directors, shall perform the duties of the Secretary. Each Assistant Secretary shall have such other powers and perform such other duties as these By-laws may provide or as the Directors may from time to time designate. A Temporary Secretary designated by the person presiding shall perform the duties of the Secretary in the absence of the Secretary and Assistant Secretaries from any meeting of stockholders or Directors.

ARTICLE V

PROVISIONS RELATING TO CAPITAL STOCK

Section 1. Unissued Stock.

The Board of Directors shall have the authority upon majority vote to issue from time to time the whole or any part of any unissued balance of the authorized stock of the Corporation to such persons, for such consideration, whether cash, property, services or for a debt or note, and on such terms as the Directors may from time to time determine without first offering the same for subscription to existing stockholders of the Corporation.

Section 2. Certificates of Stock.

Each stockholder shall be entitled to a certificate or certificates representing in the aggregate the shares owned by him and certifying the number and class thereof, which shall be in such form as the Directors shall adopt. Each certificate of stock shall be signed by (a) the President, the Chairman, a Vice President, or the Chief Executive Officer and (b) by the Treasurer or an Assistant Treasurer, but when a certificate is countersigned by a transfer agent or a registrar, other then a Director, officer or employee of the Corporation, such signatures may be facsimiles. In case any officer who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer at the time of its issue. Every certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, the By-laws or any agreement to which the Corporation is a party, shall have the restriction noted conspicuously on the certificate and shall also set forth on the face or back either the full text of the restriction or a statement of the existence of such restriction and a statement that the Corporation will furnish a copy to the holder of such certificate upon written request and without charge.

Section 3. Transfer of Stock.

The stock of the Corporation shall be transferable, so as to affect the rights of the Corporation, only by transfer recorded on the books of the Corporation, in person or by duly authorized attorney, and upon the surrender of the certificate or certificates properly endorsed or assigned.

Section 4. Equitable Interests Not Recognized.

The Corporation shall be entitled to treat the holder of record of any share or shares of stock as the holder in fact thereof and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person except as may be otherwise expressly provided by law.

Section 5. Lost or Destroyed Certificates.

The Directors of the Corporation may, subject to Delaware Corporation Law, determine the conditions upon which a new certificate of stock may be issued in place of any certificate alleged to have been lost, destroyed, or mutilated.

ARTICLE VI

STOCK IN OTHER CORPORATIONS

Except as the Directors may otherwise designate, the President or Treasurer may waive notice of, and appoint any person or persons to act as proxy or attorney in fact for this Corporation (with or without power of substitution) at, any meeting of stockholders or shareholders, or to act as director or officer of any other Corporation or organization, the securities of which may be held by this Corporation.

ARTICLE VII

INSPECTION OF RECORDS

Books, accounts, documents and records of the Corporation shall be open to inspection by any Director at all times during the usual hours of business. The original, or attested copies, of the Certificate of Incorporation, By-laws and records of all meetings of the incorporators and stockholders, and the stock and transfer records, which shall contain the names of all stockholders and the record address and the amount of stock held by each, shall be kept at the principal office of the Corporation, or at an office of its transfer agent or of the Secretary or of its registered agent. Said copies and records need not all be kept in the same office. They shall be available at all reasonable times to the inspection of any stockholder for any proper purpose, but not to secure a list of stockholders for the purpose of selling said list or copies thereof or of using the same for any purpose other than in the interest of the applicant, as a stockholder, relative to the affairs of the Corporation.

ARTICLE VIII

CHECKS, NOTES, DRAFTS and OTHER INSTRUMENTS

Checks, notes, drafts and other instruments for the payment of money drawn or endorsed in the name of the Corporation may be signed by any officer or officers or person or persons authorized by the Directors to sign the same.

ARTICLE IX

SEAL

The seal of the Corporation shall be circular in form, bearing its name, the word “Delaware”, and the year of its incorporation. The Secretary or any Assistant Secretary may affix the seal (as may any other officer if authorized by the Directors) to any instrument requiring the corporate seal.

ARTICLE X

AMENDMENTS

These By-laws may at any time be amended by vote of the stockholders, provided that notice of the substance of the proposed amendment is stated in the notice of the meeting. The Directors may also make, amend, or repeal these By-laws in whole or in part, except with respect to any provision thereof which by law, the Certificate of Incorporation, or these By-laws requires action by the stockholders. Not later than the time of giving notice of the meeting of stockholders next following the making, amending or repealing by the Directors of any By-law, notice thereof stating the substance of such change shall be given to all stockholders entitled to vote on amending the By-laws. Any By-law adopted by the Directors may be amended or repealed by the stockholders.

ARTICLE XI

TRANSACTIONS WITH RELATED PARTIES

No contract or transaction between the Corporation and one or more of its Directors or Officers, or between a Corporation and any other corporation, partnership, association, or other organization in which one or more of its Directors or Officers, are Directors or Officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the Director or Officer is present at or participates in the meeting of the Board or committee which authorizes the contract or transaction, or solely because any such Director’s or Officer’s vote are counted for such purpose if: (1) the material fact as to the Director’s or Officer’s relationship or interest and to the contract or transaction are disclosed or are known to the Board or the Committee, and the Board or Committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested Directors, even though the disinterested Directors be less than a quorum; or (2) the material facts as to the Director’s or Officer’s relationship or interest and to the contract or transaction are disclosed or are known to the Shareholders entitled to vote

thereon, and the contract or transaction is specifically approved in good faith by vote of the Shareholders; or (3) the contract or transaction is fair as to the Corporation as of the time it is authorized, approved or ratified, by the Board, a Committee or the Shareholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board or of a committee which authorizes the contract or transaction.

ARTICLE XII

INDEMNIFICATION OF DIRECTORS, OFFICERS AND OTHERS

The Corporation shall, to the extent legally permissible, have power to indemnify any person serving or who has served as a Director, officer, employee or agent of the Corporation in the manner prescribed by the Certificate of Incorporation, as amended and restated from time to time, of the Corporation.

The Corporation shall, to the extent permissible, have power to purchase and maintain insurance on behalf of any person who is or was a Director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a Director, officer, employee or agent of another corporation, partnership, joint venture trust or other enterprise against any liability asserted against such person and incurred by such person in any capacity, or arising out of such person’s status as such, whether or not the Corporation would have the power to indemnify such person against such liability under this section.

HERE END THESE BY-LAWS

EXHIBIT 4.2

THIRD AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

BY AND AMONG

ZAFGEN, INC.

AND

THE INVESTORS NAMED HEREIN

November 25, 2013

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THIRD AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS THIRD AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**") is made as of November 25, 2013, by and between Zafgen, Inc., a Delaware corporation (the "**Company**"), and each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**" and any additional Investor that becomes a party to this Agreement in accordance with Section 6.9 hereof.

RECITALS

WHEREAS, the Company and the holders of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock previously entered into that certain Second Amended and Restated Investors' Rights Agreement, dated June 30, 2011, as amended by that certain Amendment No. 1 to the Second Amended and Restated Investors' Rights Agreement, dated November 30, 2012 (the "**Prior Agreement**"), which Prior Agreement includes certain registration rights, information rights and purchase rights, among other rights;

WHEREAS, the Company and certain of the Investors are parties to that certain Series E Preferred Stock Purchase Agreement of even date herewith (as amended, restated and otherwise modified from time to time, the "**Purchase Agreement**"); and

WHEREAS, in order to induce the Company to enter into the Purchase Agreement and to induce those certain Investors who are party to the Purchase Agreement to invest funds in the Company pursuant to the Purchase Agreement, the parties to the Prior Agreement desire to terminate the Prior Agreement in its entirety and to replace and supersede the Prior Agreement with this Agreement, which shall govern the rights of the Investors to cause the Company to register shares of Common Stock issuable to the Investors, to receive certain information from the Company, and to participate in future equity offerings by the Company, and shall govern certain other matters as set forth in this Agreement.

NOW, THEREFORE, the parties hereby agree as follows:

Section 1. Definitions.

For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who or which, directly or indirectly, controls, is controlled by, or is under common control with such specified Person, including without limitation any partner, officer, director, manager or employee of such Person and any venture capital fund now or hereafter existing that is controlled by or under common control with one or more general partners or managing members of, or snares the same management company with, such Person.

1.2 "**Atlas Venture**" means Atlas Venture Fund VII, L.P.

1.3 "**Board of Directors**" means the Company's Board of Directors.

1.4 "**Certificate of Incorporation**" means the Company's Seventh Amended and Restated Certificate of Incorporation, as the same may be amended, restated or otherwise modified from time to time.

1.5 "**Common Stock**" means shares of the Company's common stock, par value $0.001 per share.

1.6 "**Damages**" means any loss, claim, damage, or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, claim, damage, or liability (or any action in respect thereof) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by any other party hereto of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.7 "**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for, Common Stock, including options and warrants.

1.8 "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.9 "**Excluded Registration**" means a registration relating either to the sale of securities to employees of the Company pursuant to a stock option, stock purchase, or similar plan or to an SEC Rule 145 transaction; a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.10 "**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.11 "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.12 "**GAAP**" means generally accepted accounting principles in the United States.

1.13 "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.14 "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, of a natural person referred to herein.

1.15 "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.16 "**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

1.17 "**Key Employee**" means any executive-level employee (including division director and vice president-level positions) as well as any employee who, either alone or in concert with others, develops, invents, programs, or designs any Company Intellectual Property (as defined in the Purchase Agreement).

1.18 "**New Securities**" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.19 "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.20 "**Preferred Directors**" means the Series A Directors and Series B/C Directors.

1.21 "**Preferred Stock**" means, collectively, shares of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock and Series E Preferred Stock.

1.22 "**Qualified Offering**" means an underwritten public offering of Common Stock pursuant to an effective registration statement under the Securities Act resulting in at least $35,000,000 of proceeds, net of the underwriting discount and commissions, to the Company.

1.23 "**Register**," "**registered**," and "**registration**" refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Securities Act, and the declaration or ordering of effectiveness of such registration statement or document.

1.24 "**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock; (ii) any Common Stock issued or issuable upon conversion of any capital stock of the Company acquired by the Investors after the date hereof; (iii) any Common Stock issued to or acquired by the Investors after the date hereof; and (iv) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i), (ii) and (iii) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the rights under Section 2 hereof are not assigned or any shares for which registration rights have terminated pursuant to Section 2.15 of this Agreement.

1.25 "**Registrable Securities then outstanding**" means the number of shares determined by adding the Common Stock outstanding and the Common Stock issuable pursuant to then exercisable or convertible securities, in each case, that are Registrable Securities.

1.26 "**Restricted Securities**" means the securities of the Company required to bear the legend set forth in Section 2.14(b) hereof.

1.27 "**SEC**" means the Securities and Exchange Commission.

1.28 "**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

1.29 "**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

1.30 "**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.31 "**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except as provided in Section 2.7.

1.32 "**Series A Directors**" means the directors of the Company that the holders of record of the Series A Preferred Stock are entitled to elect pursuant to the Certificate of Incorporation.

1.33 "**Series A Preferred Stock**" means shares of the Company's Series A Preferred Stock, par value $0.001 per share.

1.34 "**Series B/C Directors**" means the directors of the Company that the holders of record of the Series B Preferred Stock and Series C Preferred Stock are entitled to elect pursuant to the Certificate of Incorporation.

1.35 "**Series B Preferred Stock**" means shares of the Company's Series B Preferred Stock, par value $0.001 per share.

1.36 "**Series C Preferred Stock**" means shares of the Company's Series C Preferred Stock, par value $0.001 per share.

1.37 "**Series D Preferred Stock**" means shares of the Company's Series D Preferred Stock, par value $0.001 per share.

1.38 "**Series E Preferred Stock**" means shares of the Company's Series E Preferred Stock, par value $0.001 per share.

Section 2. Registration Rights.

The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) If at any time after the earlier of (i) five (5) years after the date of this Agreement or (ii) one hundred eighty (180) days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of at least seventy percent (70%) of the Registrable Securities then outstanding that the Company effect a registration with respect to Registrable Securities then outstanding (voting together as a single class), then the Company shall (i) within ten (10) days after the date such request is given, give notice thereof (the " **Demand Notice**") to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file, a registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(b).

(b) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing for a period of not more than thirty (30) days after the request of the Initiating Holders is given; *provided*, *however*, that the Company may not invoke this right more than once in any twelve (12) month period; and *provided further* that the Company shall not register any securities for its own account or that of any other stockholder during such thirty (30) day period other than pursuant to a registration relating to the sale of securities to employees of the Company pursuant to a stock option, stock purchase, or similar plan or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

(c) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to this Section 2.1 (i) during the period that is ninety (90) days after the effective date of a Company-initiated registration on Form S-l, (ii) after the Company has effected two demand registrations pursuant to this Section 2.1; or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately

registered on Form S-3 pursuant to a request made pursuant to Section 2.3. A registration shall not be counted as "effected" for purposes of this Section 2.1 until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.1, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1.

2.2 Company Registration.

If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its stock or other securities under the Securities Act in connection with the public offering of such securities solely for cash (other than an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.4, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 2.1.

2.3 Form S-3 Registration.

If the Company receives a request from Holders of at least ten percent (10%) of the Registrable Securities then outstanding that the Company effect a registration on Form S-3 with respect to all or a part of the Registrable Securities owned by such Initiating Holders, then the Company shall:

(a) within ten (10) days after the date such request is given, give notice of the proposed registration to all Holders other than the Initiating Holders (the "**S-3 Notice**"); and

(b) as soon as practicable, use its commercially reasonable efforts to effect such registration as would permit or facilitate the sale and distribution of all or such portion of such Initiating Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a request given to the Company within fifteen (15) days after the S-3 Notice is given; *provided*, *however*, that the Company shall not be obligated to effect any such registration pursuant to this Section 2.3 (i) if Form S-3 is not then available for such offering by the Holders; (ii) if the Holders, together with the holders of any other securities of the Company entitled to and requesting inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public of less than $500,000.00; (iii) if the Company furnishes to the Holders a certificate signed by the chief executive officer of the Company stating that in the good-faith judgment of the Board of Directors, it would be materially detrimental to the Company and its stockholders for such Form

S-3 registration to be effected at such time, in which event the Company shall have the right to defer the filing of the Form S-3 registration statement for a period of not more than thirty (30) days after receipt of the request of the Initiating Holders under this Section 2.3; *provided*, *however*, that the Company shall not invoke this right more than once in any twelve (12) month period; and *provided further* that the Company shall not register any securities for its own account or that of any other stockholder during such thirty (30) day period other than pursuant to a registration relating to the sale of securities to employees of the Company pursuant to a stock option, stock purchase, or similar plan or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

(c) Registrations effected pursuant to this Section 2.3 shall not be counted as demands for registration or registrations effected pursuant to Section 2.1.

2.4 Underwriting Requirements.

(a) If, pursuant to Section 2.1 or Section 2.3, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1(a) or Section 2.3, and the Company shall include such information in the Demand Notice or the S-3 Notice, as the case may be. The underwriter will be selected by the Initiating Holders, subject only to the reasonable approval of the Company. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.5(e)) enter into an underwriting agreement in customary form with the managing underwriters) selected for such underwriting. Notwithstanding any other provision of this Section 2.4, if the managing underwriters advise the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among all Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder; *provided*, *however*, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering

exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. In no event shall any Registrable Securities be excluded from such offering unless all other stockholders' securities have been first excluded. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be apportioned pro rata among the selling Holders based on the number of Registrable Securities held by all selling Holders or in such other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall the number of Registrable Securities included in the offering be reduced below thirty percent (30%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the provision in this Section 2.4(b) concerning apportionment, for any selling stockholder that is a Holder and a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "**selling Holder**," and any pro rata reduction with respect to such "**selling Holder**" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "**selling Holder**," as defined in this sentence.

2.5 Obligations of the Company.

Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; *provided*, *however*, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities), from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to sixty (60) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; *provided* that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any underwriter participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent in connection with any such registration statement;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

2.6 Furnish Information.

It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.7 Expenses of Registration.

All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders, shall be borne and paid by the Company; *provided*, *however*, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 or Section 2.3 if the registration request is subsequently withdrawn at the request of the Holders of at least seventy percent (70%) of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of at least seventy percent (70%) of the Registrable Securities agree to forfeit their right to one registration pursuant to Section 2.1 or Section 2.3, as the case may be; *provided further* that if, at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information, then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Section 2.1 or Section 2.3. All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.8 Delay of Registration.

No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.9 Indemnification.

If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating any matter or defending any proceeding from which Damages may result, as such expenses are incurred*; provided*, *however*, that the indemnity agreement contained in this Section 2.9(a) shall not apply to amounts paid in settlement of any such investigation or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating any investigation or defending any proceeding from which Damages may result, as such expenses are incurred; *provided*, *however*, that the indemnity agreement contained in this Section 2.9(b) shall not apply to amounts paid in settlement of any such investigation or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and *provided further* that in no event shall any indemnity under this Section 2.9(b) exceed the proceeds from the offering (net of any Selling Expenses) received by such Holder, except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.9 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.9. give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; *provided*, *however*, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.9, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.9.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.9 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such

indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.9 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.9, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of the each of indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; *provided*, *however*, that, in any such case, (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and *provided further* that in no event shall a Holder's liability pursuant to this Section 2.9(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.9(b), exceed the proceeds from the offering (net of any Selling Expenses) received by such Holder, except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.9 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.10 Reports Under Exchange Act.

With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep public information available, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); and (ii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to such Form S-3 (at any time after the Company so qualifies to use such form).

2.11 Limitations on Subsequent Registration Rights.

From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least seventy percent (70%) of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (i) to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included or (ii) to demand registration of any securities held by such holder or prospective holder; *provided that* this limitation shall not apply to any Additional Investor who becomes a party to this Agreement in accordance with Section 6.9.

2.12 "Market Stand-off" Agreement.

Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the IPO, and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Subsection 2.12 shall apply only to the IPO, shall

not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall be applicable to the Holders only if all officers, directors and stockholders individually owning more than one percent (1%) of the outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock) are subject to the same restrictions. The underwriters in connection with such registration are intended third party beneficiaries of this Subsection 2.12 and shall have the right, power, and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Subsection 2.12 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements.

2.13 Assignment of Registration Rights.

The rights to cause the Company to register Registrable Securities pursuant to this Section 2 may be assigned (but only with all related obligations) by a Holder to a transferee of such Registrable Securities that (i) is an Affiliate, partner, member, limited partner, retired partner, retired member, or stockholder of a Holder; (ii) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; or (iii) after such transfer, holds at least 100,000 shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); *provided*, *however*, that (y) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such registration rights are being transferred and (z) such transferee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.12. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (i) that is an Affiliate, limited partner, retired partner, member, retired member, or stockholder of a Holder; (ii) who is a Holder's Immediate Family Member; or (iii) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; *provided further* that all transferees other than limited partners, retired partners and stockholders of a Holder who would not qualify individually for assignment of registration rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Section 2.

2.14 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.14(c)) be stamped or otherwise imprinted with a legend in the following form:

THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SHARES REPRESENTED BY THIS CERTIFICATE MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.14.

(c) The holder of each certificate representing Restricted Securities, by acceptance thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with Rule 144 or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration; *provided that* each transferee agrees in writing to be subject to the terms of this Section 2.14(c). Each certificate evidencing the Restricted Securities transferred as above provided shall bear, except if such transfer is made pursuant to Rule 144, the appropriate restrictive legend set forth in Section 2.14(b), except that such certificate shall not bear such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.15 Termination of Registration Rights.

The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.1, Section 2.2 or Section 2.3 shall terminate upon the earlier of:

(a) the closing of a Deemed Liquidation Event, as such term is defined in the Certificate of Incorporation; or

(b) when all of such Holder's Registrable Securities could be sold without restriction under SEC Rule 144.

Section 3. Information and Observer Rights.

3.1 Delivery of Financial Statements.

For so long as any shares of Preferred Stock are outstanding, the Company shall deliver to each Investor:

(a) as soon as practicable, but in any event within ninety (90) days after the end of each fiscal year of the Company, (i) a balance sheet as of the end of such year; (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined in Section 3.1(e)) for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year; and (iii) a statement of stockholders' equity as of the end of such year, audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and of cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that the financial report may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, a statement showing the number of shares of each class and scries of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Investors to calculate their respective percentage equity ownership in the Company, and certified by the chief financial officer or chief executive officer of the Company as being true, complete, and correct;

(d) as soon as practicable, but in any event within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that the financial report may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(e) as soon as practicable, but in any event sixty (60) days before the end of each fiscal year, a budget and business plan for the next fiscal year (collectively, the "**Budget**"), prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company;

(f) with respect to the financial statements called for in Section 3.1(a), Section 3.1(b) and Section 3.1(d), an instrument executed by the chief financial officer and chief executive officer of the Company certifying that such financial statements were prepared in accordance with GAAP consistently applied with prior practice for earlier periods (except as otherwise set forth in Section 3.1(b) and Section 3.1(d)) and fairly present the financial condition of the Company and its results of operation for the periods specified therein; and

(g) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Investor, including any such Investor's affiliates and limited partners, may from time to time reasonably request; *provided*, *however*, that the Company shall not be obligated under this Section 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 upon the completion of a Qualified Offering.

3.2 Inspection.

The Company shall permit each Investor, including any such Investor's Affiliates and limited partners, at such Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Investor, *provided*, *however*, that the Company shall not be obligated pursuant

to this Section 3.2 to provide access to any information that it reasonably considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Observer Rights.

As long as (i) Atlas Venture holds any shares of Preferred Stock or Common Stock, the Company shall invite a representative of Atlas Venture to attend all meetings of its Board of Directors and all meetings of committees of the Board of Directors in a nonvoting observer capacity, (ii) Third Rock Ventures, LP ("**Third Rock**") holds any shares of Preferred Stock or Common Stock, the Company shall invite a representative of Third Rock to attend all meetings of its Board of Directors and all meetings of committees of the Board of Directors in a nonvoting observer capacity, (iii) Alta Partners VIII, LP (" **Alta Partners**") or any Affiliate of Alta Partners holds any shares of Preferred Stock or Common Stock, the Company shall invite a representative of Alta Partners to attend all meetings of its Board of Directors and all meetings of committees of the Board of Directors in a nonvoting observer capacity and (iv) RA Capital Management, LLC ("**RA Capital**") or any Affiliate of RA Capital holds any shares of Preferred Stock or Common Stock, the Company shall invite a representative of RA Capital to attend all meetings of its Board of Directors in a nonvoting observer capacity, and, in this respect, shall give any such representative copies of all notices, minutes, consents, and other materials that it provides to its directors at the same time and in the same manner as provided to such directors; *provided*, *however*, that any such representative shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information so provided; and *provided further*, that the Company reserves the right to withhold any information and to exclude any such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a competitor of the Company. To the extent the Company provides indemnification to any Board of Directors observer, it shall provide the same indemnification to all such observers. The Company will reimburse the representative of Alta Partners pursuant to this section for the reasonable expenses incurred by such representative for travel to attend meetings of the Board of Directors or any committee of the Board of Directors.

3.4 Termination of Information and Observer Rights.

The covenants set forth in Sections 3.1, 3.2 and 3.3 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO or (ii) upon a Deemed Liquidation Event, whichever event occurs first.

3.5 Confidentiality.

Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a

result of a breach of this Section 3.5 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; *provided*, *however*, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.5; (iii) to any Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, *provided that* such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, *provided that* the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure. The Company acknowledges that certain of the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises that may have products or services that compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise, regardless of whether such enterprise has products or services that compete with those of the Company.

Section 4. Rights to Future Stock Issuances.

4.1 Right of First Offer.

Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Investor. An Investor shall be entitled to apportion the right of first offer hereby granted to it among itself and its Affiliates in such proportions as it deems appropriate.

(a) The Company shall give notice (the "**Offer Notice**") to each Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within twenty (20) days after the Offer Notice is given, each Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock issued and held, or issuable upon conversion of the Preferred Stock and any other Derivative Securities then held, by such Investor bears to the total Common Stock then outstanding (assuming full conversion and exercise of all Preferred Stock and all other Derivative Securities). At the expiration of such twenty (20) day period, the Company shall promptly notify each Investor that elects to purchase or acquire all the shares available to it (each, a " **Fully Exercising Investor**") of any other Investor's failure to do likewise. During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New

Securities for which Investors were entitled to subscribe but that were not subscribed for by the Investors which is equal to the proportion that the Common Stock issued and held, or issuable upon conversion of Preferred Stock then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable upon conversion of the Preferred Stock then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Section 4.1(b) shall occur within sixty (60) days of the date that the Offer Notice is given.

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Section 4.1(b), the Company may, during the ninety (90) day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within thirty (30) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Investors in accordance with this Section 4.1.

(d) The right of first offer in this Section 4.1 shall not be applicable to Exempted Securities (as defined in the Certificate of Incorporation).

4.2 Termination.

The covenants set forth in Section 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 13(a) or 15(d) of the Exchange Act or (iii) upon a Deemed Liquidation Event, whichever event occurs first.

Section 5. Additional Covenants.

5.1 Insurance.

The Company shall use its commercially reasonable efforts to maintain from financially sound and reputable insurers Directors and Officers Errors and Omissions insurance in an amount satisfactory to the Board of Directors, including the Preferred Directors. Such policy shall not be cancelable by the Company without prior approval of the Board of Directors, including the Preferred Directors.

5.2 Employee Agreements.

The Company will cause (i) each Person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement and (ii) each Key Employee to enter into a one (1) year noncompetition and nonsolicitation agreement, substantially in the form approved by the Board of Directors. In addition, the Company shall not amend, modify, terminate, waive, or otherwise alter, in whole or in part, any of the above-referenced agreements or any restricted stock agreement between the Company and any employee, without the consent of the Preferred Directors.

5.3 Employee Vesting.

Unless otherwise approved by the Board of Directors, including the Preferred Directors, all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months, and (ii) a one hundred eighty (180) day lockup period in connection with the IPO. The Company shall retain a "right of first refusal" on employee transfers until the IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

5.4 Matters Requiring Holder Approval .

So long as any shares of Preferred Stock are outstanding, the Company hereby covenants and agrees with each of the Investors that it shall not, without the approval of the Board of Directors, including the approval of the Preferred Directors:

(a) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other corporation, partnership, or other entity unless it is wholly owned by the Company;

(b) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board of Directors;

(c) grant a security interest in the assets of the Company other than in the ordinary course of business;

(d) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(e) make any payment or investment or incur any aggregate indebtedness in excess of $50,000.00 that is not already included the Budget, other than trade credit incurred in the ordinary course of business;

(f) enter into or be a party to any transaction with any director, officer or employee of the Company or any "associate" (as defined in Rule 12b-2 promulgated under the Exchange Act) of such Person, except for transactions made in the ordinary course of business and pursuant to reasonable requirements of the Company's business upon fair and reasonable terms that are approved by a majority of the members of the Board of Directors;

(g) hire, terminate, or change the compensation of any officer or senior executive of the Company, including approving any option grants or stock awards to such officer or senior executive;

(h) change the principal business of the Company or any subsidiary, enter into a new line of business or exit the current line of business;

(i) approve, or amend in any material respect, the Budget;

(j) in any fiscal year, incur capital or other expenditures materially in excess of the amounts contemplated by the approved Budget for that fiscal year (or, until such time as a Budget is approved for any fiscal year, the amounts contemplated by the approved Budget for the preceding fiscal year);

(k) commence or settle any litigation where the litigation relates to the business of the Company generally and the amount involved exceeds $10,000 in the aggregate;

(l) confess a judgment against the Company in an amount exceeding $10,000;

(m) enter into any agreement, arrangement or transaction that is material to the Company; or

(n) adopt any new or amend any existing stock plan, employee stock ownership plan or phantom stock or similar plan to increase the aggregate number of shares reserved under such plans to more than 11,863,864 in the aggregate.

5.5 Meetings of the Board of Directors.

Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule.

5.6 Successor Indemnification.

If the Company or any of its successors or assignees (i) consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers or conveys all or substantially all of its properties and assets to any Person, then, and in each such case, to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Certificate of Incorporation, or elsewhere, as the case may be.

5.7 Sudanese Investments.

The Company and each of its subsidiaries shall not, directly or indirectly, own or control any property or assets located in the Republic of Sudan or transact any commercial business in the Republic of Sudan.

5.8 Termination of Covenants.

The covenants set forth in this Section 5, except for Section 5.6, shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 13(a) or 15(d) of the Exchange Act or (iii) upon a Deemed Liquidation Event, whichever event occurs first.

Section 6. Miscellaneous.

6.1 Successors and Assigns.

Each Investor hereby agrees that it shall not, and may not, assign any of its rights and obligations hereunder, unless such rights and obligations are assigned by such Investor to any Person to which Registrable Securities are transferred by such Investor pursuant to Section 2.13, and such assignee shall be deemed an "Investor" for purposes of this Agreement; *provided that* such assignment of rights shall be contingent upon the assignee providing a written instrument to the Company notifying the Company of such assignment and agreeing in writing to be bound by the terms of this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2 Governing Law.

This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware, without regard to its principles of conflicts of laws.

6.3 Counterparts.

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may also be executed and delivered by facsimile signature or other form of electronic transmission (including pdf) and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6.4 Titles and Subtitles.

The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices.

All notices, requests, and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given (i) upon personal delivery to the party to be notified; (ii) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, and if not so confirmed, then on the next business day; (iii) five (5) days after having been sent by registered or certified mail, return receipt requested,

postage prepaid; or (iv) one (1) day after deposit with a nationally recognized overnight courier, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on the signature page or Schedule A hereto, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Section 6.5. If notice is given to the Company, a copy (which shall not constitute notice) shall also be sent to Goodwin Procter LLP, Exchange Place, Boston, MA 02109, fax: (617) 523-1231, Attention: Mitchell S. Bloom, Esq., email: mbloom@goodwinprocter.com.

6.6 Amendments and Waivers.

Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of at least seventy percent (70%) of the Registrable Securities then outstanding; *provided that* the Company may in its sole discretion waive compliance with Section 2.14(c) (and the Company's failure to object promptly in writing to a proposed assignment (after notice thereof to the Company in accordance with Section 6.5) allegedly in violation of Section 2.14(c) shall be deemed to be a waiver). Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction); provided that Section 3.3 and this sentence of Section 6.6 of this Agreement may not be amended or terminated and the observance of any term of Section 3 may not be waived with respect to Atlas, Third Rock, Alta Partners or RA Capital without the written consent of Atlas, Third Rock, Alta Partners or RA Capital, respectively; and provided further, that notwithstanding the foregoing, the terms and conditions of this Agreement as they apply to Fidelity Select Portfolios: Biotechnology Portfolio (" **Fidelity Select**"), Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund ("**Fidelity Advisor**" and together with Fidelity Select, the "**Fidelity Investors**") or their Affiliates or related parties may not be modified or amended without the prior written consent of the Fidelity Investors, as applicable; and provided further, that notwithstanding the foregoing, the terms and conditions of this Agreement as they apply to RA Capital or its Affiliates or related parties may not be modified or amended without the prior written consent of RA Capital. The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Section 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision. Notwithstanding the foregoing, Schedule A may be amended from time to time by the Company without the consent of the holders of at least seventy percent (70%) of the Registrable Securities then outstanding to reflect a transfer of Registrable Securities permitted by Section 2.14(c) or the issuance of new Registrable Securities in accordance with Section 4.1 or pursuant to Section 6.9.

6.7 Severability.

In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock.

All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

6.9 Additional Investors.

Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Preferred Stock after the date hereof, any purchaser of such shares of Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10 Termination of Prior Agreement; Entire Agreement.

The Company and the holders of at least seventy percent (70%) of the Registrable Securities (as defined in the Prior Agreement) then outstanding hereby agree that, as of the date of this Agreement, (x) the Prior Agreement is hereby superseded in its entirety by this Agreement, and (y) the original terms of the Prior Agreement shall not have any further force or effect. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement between the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled.

6.11 Dispute Resolution.

The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of Massachusetts and to the jurisdiction of the U.S. District Court for the District of Massachusetts for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of Massachusetts or the U.S. District Court for the District of Massachusetts, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court. Each of the parties to this Agreement consents to personal jurisdiction for any equitable action sought in the U.S. District Court for the District of Massachusetts or any court of the Commonwealth of Massachusetts having subject matter jurisdiction.

6.12 Delays or Omissions.

No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

COMPANY:

ZAFGEN, INC.

By: /s/ Thomas Hughes
Name: Thomas Hughes
Title: President and CEO

Address: One Broadway, 8th Floor
Cambridge, MA 02142

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

RA CAPITAL MANAGEMENT, LLC

By: /s/ Peter Kolchinsky
Name: Peter Kolchinsky
Title: Manager

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

ATLAS VENTURE FUND VII, L.P.

By: Atlas Venture Associates VII, L.P.
Its General Partner

By: Atlas Venture Associates VII, Inc.

Its General Partner

By: /s/ Kristen Laguerre
Name: Kristen Laguerre
Title: Vice President

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

THIRD ROCK VENTURES, LP

By: Third Rock Ventures, GP, LP, its General Partner

By: TRV GP, LLC, its General Partner

By: /s/ Kevin Gillis
Name: Kevin Gillis
Title: CFO

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

ALTA PARTNERS VIII, LP

By: Alta Partners Management VIII, LLC, its General Partner

By: /s/ Larry Randall
Name: Larry Randall
Title: CFO

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

FIDELITY SELECT PORTFOLIOS: BIOTECHNOLOGY PORTFOLIO

By: /s/ Stacie M. Smith
Name: Stacie M. Smith
Title: Deputy Treasurer

FIDELITY ADVISOR SERIES VII: FIDELITY ADVISOR BIOTECHNOLOGY FUND

By: /s/ Stacie M. Smith
Name: Stacie M. Smith
Title: Deputy Treasurer

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

BROOKSIDE CAPITAL PARTNERS FUND, L.P.

By: /s/ Adam M. Koppel
Name: Adam M. Koppel
Title: Managing Director

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

VENROCK HEALTHCARE CAPITAL PARNTERS, L.P.

By: VHCP Management, LLC
Its: General Partner

By: /s/ David L. Stepp
Name: David L. Stepp
Title: Authorized Signatory

VHCP CO-INVESTMENT HOLDINGS, LLC

By: VHCP Management, LLC
Its: Manager

By: /s/ David L. Stepp
Name: David L. Stepp
Title: Authorized Signatory

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Third Amended and Restated Investors' Rights Agreement as of the date first written above.

AGMAN INVESTMENTS LLC

By: Sion Management LLC

By: /s/ Howard Scott Silverman
Name: Howard Scott Silverman
Title: Manager

[SIGNATURE PAGE TO INVESTORS' RIGHTS AGREEMENT]

SCHEDULE A

Investors

RA Capital Management, LLC
20 Park Plaza, Suite 1200
Boston, MA 02116

Atlas Venture Fund VII, L.P.
25 First Street, Suite 303
Cambridge, MA 02141
Attn: General Counsel

Third Rock Ventures, LP
29 Newbury St.
Boston, MA 02116

Alta Partners VIII, LP
One Embarcadero Center
37th Floor
San Francisco, CA 94111

Fidelity Select Portfolios: Biotechnology Portfolio
Notice to:
Brown Brothers Harriman & Co.
525 Washington Blvd
Jersey City NJ 07310
Attn: Michael Lerman 15th Floor
Corporate Actions
Email: michael.lerman@bbh.com
Fax number: 617 772-2418

Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund
Notice to:
State Street Bank & Trust
PO Box 5756
Boston, Massachusetts 02206
Attn: Bangle & Co fbo Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund
Email: SSBCORPACTIONS@StateStreet.com
Fax number: 617-988-9110

Brookside Capital Partners Fund, L.P.

Venrock Healthcare Capital Partners, L.P.

VHCP Co-Investment Holdings, LLC

Matthias Jaffe
134 Highwoods Lane
Carlisle, MA 01741

Kimmel Family Trust
543 Channing Avenue
Palo Alto, CA 94301

Weiss Family Trust
100 Irvine Cove Place
Laguna Beach, CA 92561

Megan Weiss
1302 N. Sweetzer Avenue
West Hollywood, CA 90069

EXHIBIT 10.1

ZAFGEN, INC.

AMENDED AND RESTATED 2006 STOCK OPTION PLAN

SECTION 1. GENERAL PURPOSE OF THE PLAN; DEFINITIONS

The name of the plan is the Zafgen, Inc. Amended and Restated 2006 Stock Option Plan (the " *Plan*"). The purpose of the Plan is to encourage and enable the officers, employees, directors and other key persons (including consultants and prospective employees) of Zafgen, Inc., a Delaware corporation (including any successor entity, the "*Company*"), and its Subsidiaries upon whose judgment, initiative and efforts the Company largely depends for the successful conduct of its business to acquire a proprietary interest in the Company. It is anticipated that providing such persons with a direct stake in the Company's welfare will assure a closer identification of their interests with those of the Company, thereby stimulating their efforts on the Company's behalf and strengthening their desire to remain with the Company.

The following terms shall be defined as set forth below:

"*Affiliate*" of any Person means a Person that directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with the first mentioned Person. A Person shall be deemed to control another Person if such first Person possesses directly or indirectly the power to direct, or cause the direction of, the management and policies of the second Person, whether through the ownership of voting securities, by contract or otherwise.

"*Award*" or "*Awards,*" except where referring to a particular category of grant under the Plan, shall include Incentive Stock Options, Non-Qualified Stock Options, Restricted Stock Awards, Unrestricted Stock Awards or any combination of the foregoing.

"*Bankruptcy*" shall mean (i) the filing of a voluntary petition under any bankruptcy or insolvency law, or a petition for the appointment of a receiver or the making of an assignment for the benefit of creditors, with respect to the Holder, or (ii) the Holder being subjected involuntarily to such a petition or assignment or to an attachment or other legal or equitable interest with respect to the Holder's assets, which involuntary petition or assignment or attachment is not discharged within sixty (60) days after its date, and (iii) the Holder being subject to a transfer of its Issued Shares by operation of law (including by divorce, even if not insolvent), except by reason of death.

"*Board*" means the Board of Directors of the Company.

"*Code*" means the Internal Revenue Code of 1986, as amended, and any successor Code, and related rules, regulations and interpretations.

"*Committee*" means the Committee of the Board referred to in Section 2.

"*Effective Date*" means the date on which the Plan is approved by stockholders as set forth at the end of this Plan.

"*Exchange Act*" means the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder.

"*Fair Market Value*" of the Stock on any given date means the fair market value of the Stock determined in good faith by the Committee.

"*Holder*" means, with respect to an Award or any Issued Shares, the Person holding such Award or Issued Shares, including the initial recipient of the Award or any Permitted Transferee.

"*Incentive Stock Option*" means any Stock Option designated and qualified as an "incentive stock option" as defined in Section 422 of the Code.

"*Issued Shares*" means, collectively, all outstanding Shares issued pursuant to Restricted Stock Awards, all outstanding Shares issued pursuant to Unrestricted Stock Awards, and all Option Shares.

"*Non-Qualified Stock Option*" means any Stock Option that is not an Incentive Stock Option.

"*Option*" or "*Stock Option*" means any option to purchase shares of Stock granted pursuant to Section 6.

"*Option Shares*" means outstanding shares of Stock that were issued to a Holder upon the exercise of a Stock Option.

"*Permitted Transferees*" shall mean any of the following to whom a Holder may transfer Issued Shares hereunder (as set forth in Section 9(a)(ii)(A)): the Holder's spouse, children (natural or adopted), stepchildren, grandchildren or a trust for their sole benefit of which the Holder is the settlor *; provided, however,* that any such trust does not require or permit distribution of any Issued Shares during the term of this Agreement unless subject to its terms. Upon the death of the Holder, the term Permitted Transferees shall also include such deceased Holder's estate, executions, administrations, personal representations, heirs, legatees and distributees, as the case may be.

"*Person*" shall mean any individual, corporation, partnership (limited or general), limited liability company, limited liability partnership, association, trust, joint venture, unincorporated organization or any similar entity.

"*Repurchase Event*" means the termination of the Award recipient's employment or service relationship with the Company and its Subsidiaries for Cause (as defined in the Award agreement).

"*Restricted Stock Award*" means Awards granted pursuant to Section 7 and "*Restricted Stock*" means Shares granted pursuant to such Awards.

"*Sale Event*" means the consummation of (i) the dissolution or liquidation of the Company, (ii) the sale of all or substantially all of the assets of the Company and its Subsidiaries on a consolidated basis to an unrelated person or entity, or (iii) a merger, reorganization or

consolidation in which the outstanding shares of Stock are converted into or exchanged for securities of the successor entity and the holders of the Company's outstanding voting power immediately prior to such transaction do not own at least a majority of the outstanding voting power of the successor entity immediately upon completion of such transaction (taking into account only ownership interests resulting from pre-transaction interests in the Company).

"*Securities Act*" means the Securities Act of 1933, as amended, and the rules and regulations thereunder.

"*Shares*" means shares of Stock.

"*Stock*" means the Common Stock, par value $0.001 per share, of the Company, subject to adjustments pursuant to Section 3.

"*Subsidiary*" means any corporation or other entity (other than the Company) in which the Company has a controlling interest, either directly or indirectly.

"*Unrestricted Stock Award*" means any Award granted pursuant to Section 8 and "*Unrestricted Stock*" means Shares granted pursuant to such Awards.

SECTION 2. ADMINISTRATION OF PLAN; COMMITTEE AUTHORITY TO SELECT GRANTEES AND DETERMINE AWARDS

(a) Administration of Plan. The Plan shall be administered by the Board, or at the discretion of the Board, by a committee of the Board, comprised of not less than two Directors. All references herein to the Committee shall be deemed to refer to the group then responsible for administration of the Plan at the relevant time (*i.e.*, either the Board or a committee or committees of the Board, as applicable).

(b) Powers of Committee. The Committee shall have the power and authority to grant Awards consistent with the terms of the Plan, including the power and authority:

(i) to select the Persons to whom Awards may from time to time be granted;

(ii) to determine the time or times of grant, and the extent, if any, of Incentive Stock Options, Non-Qualified Stock Options, Restricted Stock Awards, Unrestricted Stock Awards or any combination of the foregoing, granted to any one or more grantees;

(iii) to determine the number of shares of Stock to be covered by any Award;

(iv) to determine and modify from time to time the terms and conditions, including restrictions, not inconsistent with the terms of the Plan, of any Award, which terms and conditions may differ among individual Awards and grantees, and to approve the form of written instruments evidencing the Awards;

(v) to accelerate at any time the exercisability or vesting of all or any portion of any Award (whether or not expressly provided in any such Award);

(vi) to impose any limitations on Awards granted under the Plan, including limitations on transfers, repurchase provisions and the like and to exercise repurchase rights or obligations;

(vii) subject to any restrictions applicable to Incentive Stock Options, to extend at any time the period in which Stock Options may be exercised; and

(viii) at any time to adopt, alter and repeal such rules, guidelines and practices for administration of the Plan and for its own acts and proceedings as it shall deem advisable; to interpret the terms and provisions of the Plan and any Award (including related written instruments); to make all determinations it deems advisable for the administration of the Plan; to decide all disputes arising in connection with the Plan; and to otherwise supervise the administration of the Plan.

All decisions and interpretations of the Committee shall be binding on all persons, including the Company and Plan grantees.

(c) Indemnification. Neither the Board nor the Committee, nor any member of either or any delegatee thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with the Plan, and the members of the Board and the Committee (and any delegatee thereof) shall be entitled in all cases to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including reasonable attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under any directors' and officers' liability insurance coverage which may be in effect from time to time.

SECTION 3. STOCK ISSUABLE UNDER THE PLAN; CHANGES IN STOCK; SUBSTITUTION

(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be 3,513,864 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitation, Shares may be issued up to such maximum number pursuant to any type or types of Award. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company and held in its treasury.

(b) Changes in Stock. Subject to Section 4, if, as a result of any reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Company's capital stock, the outstanding shares of Stock are increased or decreased or are exchanged for a different number or kind of shares or other securities of the Company, or additional shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such shares of Stock or other securities, or, if, as a result of any merger, consolidation or sale of all or substantially all of the assets of the Company, the outstanding shares of Stock are converted into or exchanged for a different number or kind of securities of the Company or any successor entity (or a parent or subsidiary

thereof), the Committee shall make an appropriate or proportionate adjustment in (i) the maximum number of shares reserved for issuance under the Plan, (ii) the number and kind of shares or other securities subject to any then outstanding Awards under the Plan, (iii) the repurchase price per share subject to each outstanding Award, if any, and (iv) the exercise price and/or exchange price for each share subject to any then outstanding Stock Options under the Plan, without changing the aggregate exercise price (i.e., the exercise price multiplied by the number of Stock Options) as to which such Stock Options remain exercisable. The adjustment by the Committee shall be final, binding and conclusive. No fractional shares of Stock shall be issued under the Plan resulting from any such adjustment, but the Committee in its discretion may make a cash payment in lieu of fractional shares.

The Committee may also adjust the number of shares subject to outstanding Awards and the exercise price and the terms of outstanding Awards to take into consideration material changes in accounting practices or principles, extraordinary dividends, acquisitions or dispositions of stock or property or any other event if it is determined by the Committee that such adjustment is appropriate to avoid distortion in the operation of the Plan, provided that no such adjustment shall be made in the case of an Incentive Stock Option, without the consent of the grantee, if it would constitute a modification, extension or renewal of the Option within the meaning of Section 424(h) of the Code.

(c) Substitute Awards. The Committee may grant Awards under the Plan in substitution for stock and stock based awards held by employees, directors or other key persons of another corporation in connection with a merger or consolidation of the employing corporation with the Company or a Subsidiary or the acquisition by the Company or a Subsidiary of property or stock of the employing corporation. The Committee may direct that the substitute awards be granted on such terms and conditions as the Committee considers appropriate in the circumstances. Any substitute Awards granted under the Plan shall not count against the share limitation set forth in Section 3(a).

SECTION 4. TREATMENT UPON SALE EVENT

(a) Options. Subject to the powers of the Committee identified in Section 2(b):

(i) In the case of and subject to the consummation of a Sale Event, the Plan and all Options issued hereunder shall terminate upon the effective time of any such Sale Event unless provision is made in connection with the Sale Event in the sole discretion of the parties thereto for the assumption or continuation by the successor entity of Options theretofore granted, or the substitution of such Options with new Options of the successor entity or parent thereof, with appropriate adjustment as to the number and kind of shares and, if appropriate, the per share exercise prices, as such parties shall agree.

(ii) In the event of the termination of the Plan and all Options issued hereunder, each Holder of Options shall be permitted, within a specified period of time, not to be less than fifteen (15) days, prior to the consummation of the Sale Event as determined by the Committee, to exercise all such Options which are then exercisable or will become exercisable as of the effective time of the Sale Event; *provided, however*, that the exercise of Options not exercisable prior to the Sale Event shall be subject to the consummation of the Sale Event.

(iii) Notwithstanding anything to the contrary in Section 4(a)(i), in the event of a Sale Event pursuant to which holders of the Stock of the Company will receive upon consummation thereof a cash payment for each share surrendered in the Sale Event, the Company shall have the right, but not the obligation, to make or provide for a cash payment to the grantees holding vested Options in exchange for the cancellation thereof, in an amount equal to the difference between (A) the value as determined by the Committee of the consideration payable per share of Stock pursuant to the Sale Event (the " *Sale Price*") times the number of shares of Stock subject to outstanding vested Options (to the extent then exercisable at prices not in excess of the Sale Price) and (B) the aggregate exercise price of all such outstanding vested Options.

(b) Option Shares and Restricted Stock Awards. Unless otherwise provided in an Award agreement, in the case of and subject to the consummation of a Sale Event, Option Shares and shares of Restricted Stock shall be subject to the repurchase right set forth in Section 9(c)(i) and 9(c)(ii), respectively.

(c) Unrestricted Stock Awards. Unless otherwise provided in an Award agreement, any shares of Unrestricted Stock shall be treated in a Sale Event the same as all other Shares then outstanding.

SECTION 5. ELIGIBILITY

Grantees under the Plan will be such full or part-time officers and other employees, directors and key persons (including consultants and prospective employees) of the Company and its Subsidiaries as are selected from time to time by the Committee in its sole discretion.

SECTION 6. STOCK OPTIONS

(a) Nature of Stock Options. A Stock Option is an Award entitling the recipient to acquire, at such exercise price as determined by the Committee, shares of Stock subject to such restrictions and conditions as the Committee may determine at the time of grant. Conditions may be based on continuing employment (or other service relationship) and/or achievement of pre-established performance goals and objectives. The grant of a Stock Option is contingent on the grantee executing the Stock Option agreement. The terms and conditions of each such agreement shall be determined by the Committee, and such terms and conditions may differ among individual Awards and grantees.

Stock Options granted under the Plan may be either Incentive Stock Options or Non-Qualified Stock Options. Incentive Stock Options may be granted only to employees of the Company or any Subsidiary that is a "subsidiary corporation" within the meaning of Section 424(f) of the Code. To the extent that any Option does not qualify as an Incentive Stock Option, it shall be deemed a Non-Qualified Stock Option.

No Incentive Stock Option shall be granted under the Plan after the date which is ten (10) years from the date the Plan is approved by Board of Directors.

(b) Grants of Stock Options. The Committee in its discretion may grant Stock Options to eligible directors, officers, employees and key persons of the Company or any Subsidiary. Stock Options granted under the Plan shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of the Plan, as the Committee shall deem desirable. If the Committee so determines, Stock Options may be granted in lieu of cash compensation at the optionee's election, subject to such terms and conditions as the Committee may establish.

(i) Exercise Price. The exercise price per share for the Stock covered by a Stock Option granted under the Plan shall be determined by the Committee at the time of grant but shall not be less than one hundred percent (100%) of the Fair Market Value on the date of grant. If an employee owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than ten percent (10%) of the combined voting power of all classes of stock of the Company or any parent or subsidiary corporation and an Incentive Stock Option is granted to such employee, the option price of an Incentive Stock Option shall be not less than one hundred ten percent (110%) of the Fair Market Value on the grant date.

(ii) Option Term. The term of each Stock Option shall be fixed by the Committee, but no Stock Option shall be exercisable more than ten (10) years after the date the Stock Option is granted. If an employee owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than ten percent (10%) of the combined voting power of all classes of stock of the Company or any parent or subsidiary corporation and an Incentive Stock Option is granted to such employee, the term of such Stock Option shall be no more than five (5) years from the date of grant.

(iii) Exercisability; Rights of a Stockholder. Stock Options shall become exercisable at such time or times, whether or not in installments, as shall be determined by the Committee at or after the grant date. The Committee may at any time accelerate the exercisability of all or any portion of any Stock Option. An optionee shall have the rights of a stockholder only as to shares acquired upon the exercise of a Stock Option and not as to unexercised Stock Options. An optionee shall not be deemed to have acquired any such shares unless and until a Stock Option shall have been exercised pursuant to the terms hereof, the Company shall have issued and delivered the shares to the optionee, and the optionee's name shall have been entered on the books of the Company as a stockholder.

(iv) Method of Exercise. Stock Options may be exercised in whole or in part, by giving written notice of exercise to the Company, specifying the number of shares to be purchased. Payment of the purchase price may be made by one or more of the following methods or as otherwise provided by the Committee:

(A) In cash, by certified or bank check or other instrument acceptable to the Committee in U.S. funds payable to the order of the Company in an amount equal to the purchase price of such Option Shares;

(B) By the optionee delivering to the Company a promissory note if the Board has expressly authorized the loan of funds to the optionee for the purpose of enabling or assisting the optionee to effect the exercise of his or her Stock Option; provided that at least so much of the exercise price as represents the par value of the Stock shall be paid other than with a promissory note if otherwise required by state law; or

(C) If permitted by the Committee, through the delivery (or attestation to the ownership) of shares of Stock that have been beneficially owned by the optionee for at least six (6) months and are not then subject to restrictions under any Company plan. Such surrendered shares shall be valued at Fair Market Value on the exercise date.

Payment instruments will be received subject to collection. No certificates for shares of Stock so purchased will be issued to optionee until the Company has completed all steps required by law to be taken in connection with the issuance and sale of the shares, including (i) receipt of a representation from the optionee at the time of exercise of the Option that the optionee is purchasing the shares for the optionee's own account and not with a view to any sale or distribution thereof, (ii) the legending of any certificate representing the shares to evidence the foregoing representations and restrictions, and (iii) obtaining from optionee payment or provision for all withholding taxes due as a result of the exercise of the Option. The delivery of certificates representing the shares of Stock to be purchased pursuant to the exercise of a Stock Option will be contingent upon receipt from the optionee (or a purchaser acting in his stead in accordance with the provisions of the Stock Option) by the Company of the full purchase price for such shares and the fulfillment of any other requirements contained in the Option Award agreement or applicable provisions of laws. In the event an optionee chooses to pay the purchase price by previously-owned shares of Stock through the attestation method, the number of shares of Stock transferred to the optionee upon the exercise of the Stock Option shall be net of the number of shares attested to.

(c) Annual Limit on Incentive Stock Options. To the extent required for "incentive stock option" treatment under Section 422 of the Code, the aggregate Fair Market Value (determined as of the time of grant) of the shares of Stock with respect to which Incentive Stock Options granted under this Plan and any other plan of the Company or its parent and subsidiary corporations become exercisable for the first time by an optionee during any calendar year shall not exceed $100,000. To the extent that any Stock Option exceeds this limit, it shall constitute a Non-Qualified Stock Option.

SECTION 7. RESTRICTED STOCK AWARDS

(a) Nature of Restricted Stock Awards. A Restricted Stock Award is an Award pursuant to which the Company may, in its sole discretion, grant or sell, at such purchase price as determined by the Committee, in its sole discretion, shares of Stock subject to such restrictions and conditions as the Committee may determine at the time of grant, which purchase price shall be payable in cash or other form of consideration acceptable to the Committee. Conditions may be based on continuing employment (or other service relationship) and/or achievement of pre-established performance goals and objectives. The grant of a Restricted Stock Award is contingent on the grantee executing the Restricted Stock Award agreement. The terms and conditions of each such agreement shall be determined by the Committee, and such terms and conditions may differ among individual Awards and grantees.

(b) Rights as a Stockholder. Upon execution of a written instrument setting forth the Restricted Stock Award and payment of any applicable purchase price, a grantee shall have the rights of a stockholder with respect to the voting of the Restricted Stock, subject to such conditions contained in the written instrument evidencing the Restricted Stock Award.

(c) Vesting of Restricted Stock. The Committee at the time of grant shall specify the date or dates and/or the attainment of pre-established performance goals, objectives and other conditions on which Restricted Stock shall become vested, subject to such further rights of the Company or its assigns as may be specified in the instrument evidencing the Restricted Stock Award.

(d) Record Owner; Dividends. The Holder of Restricted Stock shall be considered the record owner of and shall be entitled to vote the Shares of Restricted Stock if and to the extent such Shares are entitled to voting rights. The Holder shall be entitled to receive all dividends and any other distributions declared on the Shares; *provided, however*, that the Company is under no duty to declare any such dividends or to make any such distribution. The Restricted Stock Award agreement may require or permit the immediate payment, waiver, deferral or investment of dividends paid on the Restricted Stock.

SECTION 8. UNRESTRICTED STOCK AWARDS

(a) Grant or Sale of Unrestricted Stock. The Committee may, in its sole discretion, grant (or sell at par value or such higher purchase price determined by the Committee) an Unrestricted Stock Award to any grantee, pursuant to which such grantee may receive shares of Stock free of any vesting restrictions under the Plan. Unrestricted Stock Awards may be granted or sold as described in the preceding sentence in respect of past services or other valid consideration, or in lieu of any cash compensation due to such individual.

(b) Elections to Receive Unrestricted Stock In Lieu of Compensation. Upon the request of a grantee and with the consent of the Committee, each such grantee may, pursuant to an advance written election delivered to the Company no later than the date specified by the Committee, receive a portion of the cash compensation otherwise due to such grantee in the form of shares of Unrestricted Stock either currently or on a deferred basis.

SECTION 9. TRANSFER RESTRICTIONS; COMPANY RIGHT OF FIRST REFUSAL; COMPANY REPURCHASE RIGHTS

(a) Restrictions on Transfer.

(i) Options. No Stock Option shall be transferable by the optionee otherwise than by will or by the laws of descent and distribution and all Stock Options shall be exercisable, during the optionee's lifetime, only by the optionee, or by the optionee's legal representative or guardian in the event of the optionee's incapacity. The Optionee may elect to designate a beneficiary by providing written notice of the name of such beneficiary to the Company, and may revoke or change such designation at any time by filing written notice of revocation or change with the Company, and any such beneficiary may exercise the Optionee's Stock Option in the event of the Optionee's death to the extent provided herein. If the Optionee does not designate a beneficiary, or if the designated beneficiary predeceases the Optionee, the legal

representative of the Optionee may exercise this Stock Option in the event of the Optionee's death to the extent provided herein. Notwithstanding the foregoing, the Committee, in its sole discretion, may provide in the Award agreement regarding a given Option that the optionee may transfer, without consideration for the transfer, his or her Non-Qualified Stock Options to members of his or her immediate family, to trusts for the benefit of such family members, or to partnerships in which such family members are the only partners, provided that the transferee agrees in writing with the Company to be bound by all of the terms and conditions of this Plan and the applicable Option.

(ii) Issued Shares. No Issued Shares shall be sold, assigned, transferred, pledged, hypothecated, given away or in any other manner disposed of or encumbered, whether voluntarily or by operation of law, unless (i) such transfer is in compliance with the terms of the applicable Award, all applicable securities laws (including the Securities Act), and with the terms and conditions of this Section 9, (ii) such transfer does not cause the Company to become subject to the reporting requirements of the Exchange Act, and (iii) the transferee consents in writing to be bound by the provisions of the Plan, including this Section 9. In connection with any proposed transfer, the Committee may require the transferor to provide at the transferor's own expense an opinion of counsel to the transferor, satisfactory to the Committee, that such transfer is in compliance with all foreign, federal and state securities laws (including the Securities Act). Any attempted disposition of Issued Shares not in accordance with the terms and conditions of this Section 9 shall be null and void, and the Company shall not reflect on its records any change in record ownership of any Issued Shares as a result of any such disposition, shall otherwise refuse to recognize any such disposition and shall not in any way give effect to any such disposition of Issued Shares.

(iii) Permitted Transfers. Unless otherwise provided in the agreement with respect to a particular Award, and subject to the terms of Section 9(a)(ii), Issued Shares may be transferred pursuant to the following specific terms and conditions (provided that with respect to any transfer of Restricted Stock, all vesting and forfeiture provisions shall continue to apply only with respect to the original recipient):

(A) Transfers to Permitted Transferees. The Holder may sell, assign, transfer or give away any or all of the Issued Shares to Permitted Transferees; *provided, however*, that following such sale, assignment, or other transfer, such Issued Shares shall continue to be subject to the terms of this Plan (including this Section 9) and such Permitted Transferee(s) shall, as a condition to any such transfer, deliver a written acknowledgment to that effect to the Company.

(B) Transfers Upon Death. Upon the death of the Holder, any Issued Shares then held by the Holder at the time of such death and any Issued Shares acquired thereafter by the Holder's legal representative shall be subject to the provisions of this Plan, and the Holder's estate, executors, administrators, personal representatives, heirs, legatees and distributees shall be obligated to convey such Issued Shares to the Company or its assigns under the terms contemplated hereby.

(b) Right of First Refusal. Subject to Section 9(a)(ii), in the event that a Holder desires at any time to sell, assign, transfer, pledge, hypothecate, give away or in any other manner dispose of or encumber, whether voluntarily or by operation of law, all or any part of such Holder's Issued Shares to any Person, other than to a Permitted Transferee in accordance with Section 9(a)(iii), the Holder first shall give written notice to the Company of the Holder's intention to make such transfer. Such notice shall state the number of Issued Shares which the Holder proposes to sell (the " *Offered Shares*"), the price and the terms at which the proposed sale is to be made and the name and address of the proposed transferee. At any time within forty-five (45) days after the receipt of such notice by the Company, the Company or its assigns may elect to purchase all or any portion of the Offered Shares at the price and on the terms offered by the proposed transferee and specified in the notice. The Company or its assigns shall exercise this right by mailing or delivering written notice to the Holder within the foregoing 45-day period (the "*Company Exercise Notice*"). If the Company or its assigns elect to exercise its purchase rights under this Section 9(b), the closing for such purchase shall, in any event, take place on or prior to the thirtieth (30 th) day following the date of the Company Exercise Notice. In the event that the Company or its assigns do not elect to exercise such purchase right, or in the event that the Company or its assigns do not pay the full purchase price within such 30-day period, the Holder may, within ninety (90) days thereafter, sell the Offered Shares to the proposed transferee and at the same price and on the same terms as specified in the Holder's notice. Any Shares purchased by such proposed transferee shall no longer be subject to the terms of the Plan, subject to the provisions of Section 13(c) hereof. Any Shares not sold to the proposed transferee shall remain subject to the Plan. In the event that the Company has a right of first refusal to which the Holder is subject and is akin to the right of first refusal contained herein, that right of first refusal shall control.

(c) Company's Right of Repurchase.

(i) Right of Repurchase for Option Shares. The Company or its assigns shall have the right and option upon a Repurchase Event to repurchase from a Holder of Option Shares some or all (as determined by the Company) of the Option Shares held or subsequently acquired upon exercise of a Stock Option by such Holder at the price per share specified below. Such repurchase right may be exercised by the Company within the later of (A) six (6) months following the date of such Repurchase Event or (B) seven (7) months after the acquisition of such Option Shares upon exercise of a Stock Option (the " *Option Shares Repurchase Period*"). The "*Option Shares Repurchase Price*" shall be equal to the Fair Market Value of the Option Shares, determined as of the date the Committee elects to exercise its repurchase rights in connection with a Repurchase Event.

(ii) Right of Repurchase With Respect to Restricted Stock and Unrestricted Stock. Unless otherwise set forth in the agreement entered into by the recipient and the Company in connection with a Restricted Stock Award or Unrestricted Stock Award, the Company or its assigns shall have the right and option upon a Repurchase Event to repurchase from a Holder of Issued Shares received pursuant to a Restricted Stock Award or Unrestricted Stock Award some or all (as determined by the Company) of such Issued Shares at the price per share specified below. Such repurchase right may be exercised by the Company within six (6) months following the date of such Repurchase Event (the " *Non-Option Shares Repurchase Period*"). The "*Non-Option Shares Repurchase Price*" shall be (i) in the case of Issued Shares which are vested as of the date of the Repurchase Event, the Fair Market Value of such Issued Shares as of the date the Committee elects to exercise its repurchase rights in connection with a Repurchase Event and (ii) in the case of Issued Shares which have not vested as of the date of the Repurchase Event, subject to adjustment as provided in Section 3(b), the original per share purchase price paid by the recipient.

(iii) Procedure. Any repurchase right of the Company shall be exercised by the Company or its assigns by giving the Holder written notice on or before the last day of the Option Shares Repurchase Period or Non-Option Shares Repurchase Period, as applicable, of its intention to exercise such repurchase right. Upon such notification, the Holder shall promptly surrender to the Company, free and clear of any liens or encumbrances, any certificates representing the Shares being purchased, together with a duly executed stock power for the transfer of such Shares to the Company or the Company's assignee or assignees. Upon the Company's or its assignee's receipt of the certificates from the Holder, the Company or its assignee or assignees shall deliver to him, her or them a check for the Option Shares Repurchase Price or the Non-Option Shares Repurchase Price, as applicable; *provided, however*, that the Company may pay the Option Shares Repurchase Price or Non-Option Shares Repurchase Price, as applicable, by offsetting and canceling any indebtedness then owed by the Holder to the Company.

(d) Escrow Arrangement.

(i) Escrow. In order to carry out the provisions of Sections 9(b) and 9(c), of this Agreement more effectively, the Company shall hold any Issued Shares in escrow together with separate stock powers executed by the Holder in blank for transfer, and any Permitted Transferee shall, as an additional condition to any transfer of Issued Shares, execute a like stock power as to such Issued Shares. The Company shall not dispose of the Issued Shares except as otherwise provided in this Agreement. In the event of any repurchase by the Company (or any of its assigns), the Company is hereby authorized by the Holder and any Permitted Transferee, as the Holder's and each such Permitted Transferee's attorney-in-fact, to date and complete the stock powers necessary for the transfer of the Issued Shares being purchased and to transfer such Issued Shares in accordance with the terms hereof. At such time as any Issued Shares are no longer subject to the Company's repurchase, first refusal and drag along rights, the Company shall, at the written request of the Holder, deliver to the Holder (or the relevant Permitted Transferee) a certificate representing such Issued Shares with the balance of the Issued Shares to be held in escrow pursuant to this Section 9(d).

(ii) Remedy. Without limitation of any other provision of this Agreement or other rights, in the event that a Holder, any Permitted Transferees or any other Person is required to sell a Holder's Issued Shares pursuant to the provisions of Sections 9(b) or 9(c) and in the further event that he or she refuses or for any reason fails to deliver to the Company or its designated purchaser of such Issued Shares the certificate or certificates evidencing such Issued Shares together with a related stock power, the Company or such designated purchaser may deposit the applicable purchase price for such Issued Shares with a bank designated by the Company, or with the Company's independent public accounting firm, as agent or trustee, or in escrow, for such Holder, any Permitted Transferees or other Person, to be held by such bank or accounting firm for the benefit of and for delivery to him, her, them or it, and/or, in its discretion, pay such purchase price by offsetting any indebtedness then owed by such Holder as provided above. Upon any such deposit and/or offset by the Company or its designated purchaser of such

amount and upon notice to the Person who was required to sell the Issued Shares to be sold pursuant to the provisions of Sections 9(b) or 9(c), such Issued Shares shall at such time be deemed to have been sold, assigned, transferred and conveyed to such purchaser, such Holder shall have no further rights thereto (other than the right to withdraw the payment thereof held in escrow, if applicable), and the Company shall record such transfer in its stock transfer book or in any appropriate manner.

(e) Lockup Provision. A Holder agrees, if requested by the Company and any underwriter engaged by the Company, not to sell or otherwise transfer or dispose of any Issued Shares (including pursuant to Rule 144 under the Securities Act) held by him or her for such period following the effective date of any registration statement of the Company filed under the Securities Act as the Company or such underwriter shall specify reasonably and in good faith, not to exceed one hundred eighty (180) days in the case of the Company's initial public offering (or, if required by such underwriter, such longer period of time as is necessary to enable such underwriter to issue a research report or make a public appearance that relates to an earnings release or announcement by the Company within eighteen (18) days prior to or after the date that is one hundred eighty (180) days after the effective date of the registration statement relating to such offering, but in any event not to exceed two hundred ten (210) days following the effective date of the registration statement relating to such offering) or ninety (90) days in the case of any other public offering. The provisions of this Section 9(e) shall be in addition to and not in lieu of any other lockup provisions applicable to Holder.

(f) Adjustments for Changes in Capital Structure. If, as a result of any reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Common Stock, the outstanding shares of Common Stock are increased or decreased or are exchanged for a different number or kind of shares of the Company's stock, the restrictions contained in this Section 9 shall apply with equal force to additional and/or substitute securities, if any, received by Holder in exchange for, or by virtue of his or her ownership of, Issued Shares.

(g) Termination. The terms and provisions of Sections 9(b) and 9(c) shall terminate upon the closing of the Company's initial public offering or upon consummation of any Sale Event, in either case as a result of which shares of the Company (or a successor entity) of the same class as the Issued Shares are registered under Section 12 of the Exchange Act and publicly traded on any national securities exchange.

SECTION 10. TAX WITHHOLDING

(a) Payment by Grantee. Each grantee shall, no later than the date as of which the value of an Award or of any Stock or other amounts received thereunder first becomes includable in the gross income of the grantee for Federal income tax purposes, pay to the Company, or make arrangements satisfactory to the Committee regarding payment of, any Federal, state, or local taxes of any kind required by law to be withheld with respect to such income. The Company and its Subsidiaries shall, to the extent permitted by law, have the right to deduct any such taxes from any payment of any kind otherwise due to the grantee. The Company's obligation to deliver stock certificates to any grantee is subject to and conditioned on any such tax obligations being satisfied by the grantee.

(b) Payment in Stock. Subject to approval by the Committee, a grantee may elect to have the minimum required tax withholding obligation satisfied, in whole or in part, by (i) authorizing the Company to withhold from shares of Stock to be issued pursuant to any Award a number of shares with an aggregate Fair Market Value (as of the date the withholding is effected) that would satisfy the withholding amount due, or (ii) transferring to the Company shares of Stock owned by the grantee with an aggregate Fair Market Value (as of the date the withholding is effected) that would satisfy the minimum withholding amount due.

SECTION 11. AMENDMENTS AND TERMINATION

The Board may, at any time, amend or discontinue the Plan and the Committee may, at any time, amend or cancel any outstanding Award (or provide substitute Awards at the same or a reduced exercise or purchase price or with no exercise or purchase price) in a manner not inconsistent with the terms of the Plan, provided that such price, if any, must satisfy the requirements which would apply to the substitute or amended Award if it were then initially granted under this Plan for the purpose of satisfying changes in law or for any other lawful purpose, but no such action shall adversely affect rights under any outstanding Award without the holder's consent. In addition, to the extent determined by the Committee to be required by the Code to ensure that Incentive Stock Options granted under the Plan are qualified under Section 422 of the Code, Plan amendments shall be subject to approval by the Company's stockholders who are entitled to vote at a meeting of stockholders. Nothing in this Section 11 shall limit the Committee's authority to take any action permitted pursuant to Section 3(c).

SECTION 12. STATUS OF PLAN

With respect to the portion of any Award that has not been exercised and any payments in cash, Stock or other consideration not received by a grantee, a grantee shall have no rights greater than those of a general creditor of the Company unless the Committee shall otherwise expressly determine in connection with any Award or Awards. In its sole discretion, the Committee may authorize the creation of trusts or other arrangements to meet the Company's obligations to deliver Stock or make payments with respect to Awards hereunder, provided that the existence of such trusts or other arrangements is consistent with the foregoing sentence.

SECTION 13. GENERAL PROVISIONS

(a) No Distribution; Compliance with Legal Requirements. The Committee may require each person acquiring Stock pursuant to an Award to represent to and agree with the Company in writing that such person is acquiring the shares without a view to distribution thereof. No shares of Stock shall be issued pursuant to an Award until all applicable securities law and other legal requirements have been satisfied. The Committee may require the placing of restrictive legends on certificates for Stock and Awards as it deems appropriate.

(b) Delivery of Stock Certificates. Stock certificates to grantees under this Plan shall be deemed delivered for all purposes when the Company or a stock transfer agent of the Company shall have mailed such certificates in the United States mail, addressed to the grantee, at the grantee's last known address on file with the Company.

(c) Right of First Refusal, Co-Sale and Drag-Along Rights . At any time that a Holder, as a result of an issuance of an Award hereunder or as a result of a transfer of Issued Shares pursuant to Section 9, would own one percent (1%) or more of the Common Stock then outstanding (calculated on an as converted-basis, and assuming the exercise of all rights, options and warrants and conversion of all convertible securities), then, as a condition to such issuance or transfer, such Holder shall execute (i) a counterpart signature page to that certain Amended and Restated Right of First Refusal and Co-Sale Agreement by and among the Company and the parties thereto dated as of October 25, 2007 (as the same may be amended, restated, or otherwise modified from time-to-time, the "*ROFR Agreement*"), such Holder to become bound by the provisions of the ROFR Agreement as a "Key Holder"; (ii) an "Adoption Agreement" agreeing to be bound by and subject to the terms of that certain Amended and Restated Voting Agreement by and among the Company and the parties thereto dated as of October 25, 2007 (as the same may be amended, restated or otherwise modified from time to time, the " *Voting Agreement"*), such Holder to become bound by the provisions of the Voting Agreement as a "Stockholder." Copies of the ROFR Agreement and the Voting Agreement may be obtained by any Holder at no cost by written request to the Company.

(d) Other Compensation Arrangements; No Employment Rights . Nothing contained in this Plan shall prevent the Board from adopting other or additional compensation arrangements, including trusts, and such arrangements may be either generally applicable or applicable only in specific cases. The adoption of this Plan and the grant of Awards do not confer upon any employee any right to continued employment with the Company or any Subsidiary.

(e) Loans to Award Recipients. The Company shall have the authority to make loans to recipients of Awards hereunder (including to facilitate the purchase of shares) and shall further have the authority to issue shares for promissory notes hereunder.

(f) Designation of Beneficiary . Each grantee to whom an Award has been made under the Plan may designate a beneficiary or beneficiaries to exercise any Award or receive any payment under any Award payable on or after the grantee's death. Any such designation shall be on a form provided for that purpose by the Committee and shall not be effective until received by the Committee. If no beneficiary has been designated by a deceased grantee, or if the designated beneficiaries have predeceased the grantee, the beneficiary shall be the grantee's estate.

(g) Headings and Certain Defined Terms. Headings and captions are for convenience only and are not to be used in the interpretation of this Plan. The words "include", "includes" and "including" will be deemed to be followed by the phrase "without limitation". The words "herein", "hereof" and "hereunder", and words of similar import, will be construed to refer to this Plan in its entirety and not to any particular provision hereof. All references herein to Sections, unless otherwise specifically provided, will be construed to refer to Sections this Plan.

(h) Legend. Any certificate(s) representing the Issued Shares shall carry substantially the following legend:

THE TRANSFERABILITY OF THIS CERTIFICATE AND THE SHARES OF STOCK REPRESENTED HEREBY ARE SUBJECT TO THE RESTRICTIONS, TERMS AND CONDITIONS (INCLUDING REPURCHASE AND RESTRICTIONS AGAINST TRANSFERS) CONTAINED IN THE ZAFGEN, INC. AMENDED AND RESTATED 2006 STOCK OPTION PLAN AND ANY AGREEMENT ENTERED INTO THEREUNDER BY AND BETWEEN THE COMPANY AND THE HOLDER OF THIS CERTIFICATE (A COPY OF WHICH IS AVAILABLE AT THE OFFICES OF THE COMPANY FOR EXAMINATION).

SECTION 14. EFFECTIVE DATE OF PLAN

This Plan shall become effective upon approval by the stockholders in accordance with applicable law. Subject to such approval by the stockholders and to the requirement that no Stock may be issued hereunder prior to such approval, Stock Options and other Awards may be granted hereunder on and after adoption of this Plan by the Board.

SECTION 15. GOVERNING LAW

This Plan and all Awards and actions taken thereunder shall be governed by, and construed in accordance with, the laws of the State of Delaware, applied without regard to conflict of law principles.

SECTION 16. DISPUTE RESOLUTION

(a) Except as provided below, any dispute arising out of or relating to this Plan or any Award made hereunder, or any agreement executed in connection herewith, or the breach, termination or validity of this Plan, any such Award or any such agreement, shall be finally settled by binding arbitration conducted expeditiously in accordance with the J.A.M.S./Endispute Comprehensive Arbitration Rules and Procedures (the "J.A.M.S. Rules"). The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. Sections 1-16, and judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof. The place of arbitration shall be Boston, Massachusetts.

(b) The arbitration shall commence within sixty (60) days of the date on which a written demand for arbitration is filed by any party hereto. In connection with the arbitration proceeding, the arbitrator shall have the power to order the production of documents by each party and any third-party witnesses. In addition, each party may take up to three (3) depositions as of right, and the arbitrator may in his or her discretion allow additional depositions upon good cause shown by the moving party. However, the arbitrator shall not have the power to order the answering of interrogatories or the response to requests for admission. In connection with any arbitration, each party to the arbitration shall provide to the other, no later than seven (7) business days before the date of the arbitration, the identity of all persons that may testify at the arbitration and a copy of all documents that may be introduced at the arbitration or considered or used by a party's witness or expert. The arbitrator's decision and award shall be made and

delivered within six (6) months of the selection of the arbitrator. The arbitrator's decision shall set forth a reasoned basis for any award of damages or finding of liability. The arbitrator shall not have power to award damages in excess of actual compensatory damages and shall not multiply actual damages or award punitive damages, and each party hereby irrevocably waives any claim to such damages.

(c) The Company, each recipient of an Award hereunder, each party to an agreement governed hereby and any other holder of Stock issued under this Plan (each, a "Party") covenants and agrees that such party will participate in the arbitration in good faith. This Section 14 applies equally to requests for temporary, preliminary or permanent injunctive relief, except that in the case of temporary or preliminary injunctive relief any party may proceed in court without prior arbitration for the limited purpose of avoiding immediate and irreparable harm.

(d) Each Party (i) hereby irrevocably submits to the jurisdiction of any United States District Court of competent jurisdiction for the purpose of enforcing the award or decision in any such proceeding, (ii) hereby waives, and agrees not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution (except as protected by applicable law), that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Plan or any Award or agreement therefor or the subject matter hereof may not be enforced in or by such court, and (iii) hereby waives and agrees not to seek any review by any court of any other jurisdiction which may be called upon to grant an enforcement of the judgment of any such court. Each Party hereby consents to service of process by registered mail at the address to which notices are to be given. Each Party agrees that its, his or her submission to jurisdiction and its, his or her consent to service of process by mail is made for the express benefit of each other Party. Final judgment against any Party in any such action, suit or proceeding may be enforced in other jurisdictions by suit, action or proceeding on the judgment, or in any other manner provided by or pursuant to the laws of such other jurisdiction.

DATE APPROVED BY BOARD OF DIRECTORS: February 1, 2006; amended and restated and share increase October 14, 2008

DATE APPROVED BY STOCKHOLDERS: February 1, 2006, share increase November 3, 2008

AMENDMENT NO. 1

TO

ZAFGEN, INC.

AMENDED AND RESTATED 2006 STOCK OPTION PLAN

The Zafgen, Inc. Amended and Restated 2006 Stock Option Plan (the " Plan") is hereby amended by the Board of Directors and stockholders of Zafgen, Inc., a Delaware corporation (the "Company"), as follows:

Section 3(a) of the Plan is amended and restated to read in its entirety as follows:

"(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be 4,363,864 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitation, Shares may be issued up to such maximum number pursuant to any type or types of Award. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company and held in its treasury."

ADOPTED BY BOARD OF DIRECTORS: February 16, 2010

ADOPTED BY STOCKHOLDERS: February 16, 2010

AMENDMENT NO. 2

TO

ZAFGEN, INC.

AMENDED AND RESTATED 2006 STOCK OPTION PLAN

The Zafgen, Inc. Amended and Restated 2006 Stock Option Plan (the " Plan") is hereby amended by the Board of Directors and stockholders of Zafgen, Inc., a Delaware corporation (the "Company"), as follows:

Section 3(a) of the Plan is amended and restated to read in its entirety as follows:

"(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be 9,863,864 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitation, Shares may be issued up to such maximum number pursuant to any type or types of Award. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company and held in its treasury."

ADOPTED BY BOARD OF DIRECTORS: June 30, 2011

ADOPTED BY STOCKHOLDERS: June 30, 2011

AMENDMENT NO. 3

TO

ZAFGEN, INC.

AMENDED AND RESTATED 2006 STOCK OPTION PLAN

The Zafgen, Inc. Amended and Restated 2006 Stock Option Plan, as amended (the " Plan") is hereby amended by the Board of Directors and stockholders of Zafgen, Inc., a Delaware corporation, as follows:

Section 3(a) of the Plan is amended and restated to read in its entirety as follows:

"(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be increased from 9,863,864 Shares to 10,863,864 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitation, Shares may be issued up to such maximum number pursuant to any type or types of Award. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company and held in its treasury."

ADOPTED BY BOARD OF DIRECTORS: March 7, 2013

ADOPTED BY STOCKHOLDERS: April 26, 2013

AMENDMENT NO. 4

TO

ZAFGEN, INC.

AMENDED AND RESTATED 2006 STOCK OPTION PLAN

The Zafgen, Inc. Amended and Restated 2006 Stock Option Plan, as amended (the " Plan") is hereby amended by the Board of Directors and stockholders of Zafgen, Inc., a Delaware corporation, as follows:

Section 3(a) of the Plan is amended and restated to read in its entirety as follows:

"(a) Stock Issuable. The maximum number of Shares reserved and available for issuance under the Plan shall be increased from 10,863,864 Shares to 11,863,864 Shares, subject to adjustment as provided in Section 3(b). For purposes of this limitation, the Shares underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the Shares available for issuance under the Plan. Subject to such overall limitation, Shares may be issued up to such maximum number pursuant to any type or types of Award. The Shares available for issuance under the Plan may be authorized but unissued Shares or Shares reacquired by the Company and held in its treasury."

ADOPTED BY BOARD OF DIRECTORS: November 22, 2013

ADOPTED BY STOCKHOLDERS: November 22, 2013

Incentive Stock Option Agreement
under Zafgen, Inc.
Amended and Restated 2006 Stock Option Plan

Name of Optionee: _____ (the "Optionee")

No. of Underlying Shares: _____ Shares of Common Stock

Grant Date: _____ (the "Grant Date")

Expiration Date: _____ (the "Expiration Date")

Vesting Start Date: _____ (the "Vesting Start Date")

Option Exercise Price/Share: $_____ (the "Option Exercise Price")

Pursuant to the Zafgen, Inc. Amended and Restated 2006 Stock Option Plan (the "Plan"), Zafgen, Inc., a Delaware corporation (together with all successors thereto, the "Company"), hereby grants to the Optionee, who is an employee of the Company or any of its Subsidiaries, an Option to purchase, on or prior to the Expiration Date (or such earlier date as provided in Section 3 below), all or any part of the number of shares of Common Stock of the Company indicated above (the "Underlying Shares," with such shares once issued being referred to herein and in the Plan as "Option Shares") at the Option Exercise Price per share indicated above.

Notwithstanding anything in this Incentive Stock Option Agreement (the "Agreement") to the contrary, this Stock Option and any Option Shares shall be subject to, and governed by, all the terms and conditions of the Plan, including, without limitation, Section 9 thereof concerning certain restrictions on transfer of Option Shares and related matters. To the extent there is any inconsistency between the terms of the Plan and of this Agreement, the terms of the Plan shall control.

All capitalized terms used in this Agreement and not otherwise defined shall have the respective meanings given such terms in the Plan.

1. Vesting and Exercisability.

(a) No portion of this Stock Option may be exercised until such portion shall have vested and become exercisable. Except as set forth in Section 1(b) below, and subject to the determination of the Committee in its sole discretion to accelerate the vesting schedule hereunder, this Stock Option shall be vested and exercisable with respect to the Underlying Shares in accordance with the following schedule:

One Year Anniversary of the Vesting Start Date (25%) (the "Initial Vesting Date")	[# of options]
Month 13[1] - Month 47 [Date]	[# of options]
Month 48 - [Date]	[# of options]

[1] The remainder of the Options to vest over 3 years, in equal monthly installments, rounded down to the nearest share, at the end of each successive month following the Initial Vesting Date, until the fourth anniversary of the Vesting Start Date, on which date all remaining unvested Options shall vest.

(b) In the case of a Sale Event, this Stock Option shall be treated as provided in Section 4(a) of the Plan.

2. Exercise of Stock Option. Prior to the Expiration Date (or such earlier date provided in Section 3 below), the Optionee may exercise this Stock Option by delivering a Stock Option exercise notice (an "Exercise Notice") in the form of Appendix A hereto indicating his or her election to purchase some or all of the Underlying Shares with respect to which this Stock Option is exercisable at the time of such notice.

3. Termination of Employment. Except as the Committee may otherwise expressly provide, or as may otherwise be expressly provided in any employment agreement between the Company and the Optionee, if the Optionee's employment with the Company or a Subsidiary terminates, the period within which the Optionee may exercise this Stock Option may be subject to earlier termination as set forth below:

(a) Termination of Employment Due to Death or Disability. If the Optionee's employment terminates by reason of such Optionee's death or disability (as defined in Section 422(c) of the Code), this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee or by the Optionee's legal representative or legatee for a period of twelve (12) months from the date of such termination or until the Expiration Date, if earlier.

(b) Termination for Cause. If the Optionee's employment is terminated by the Company for Cause, all Options (unvested and vested) shall terminate immediately. "Cause" means any of the following: (i) dishonesty, embezzlement, misappropriation of assets or property of the Company; (ii) gross negligence, misconduct, neglect of duties, theft, fraud, or breach of fiduciary duty to the Company; (iii) violation of federal or state securities laws; (iv) breach of an employment, consulting or other agreement with the Company; or (v) the conviction of a felony, or any crime involving moral turpitude, including a plea of guilty or *nolo contendre*.

(c) Other Termination. If the Optionee's employment terminates for any reason other than death or disability or Cause, this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee for a period of three (3) months from the date of termination or until the Expiration Date, if earlier.

(d) Treatment of Unvested Options on Termination of Employment. Any portion of this Stock Option that is not exercisable on the date of termination of the Optionee's employment with the Company, for any reason, shall terminate immediately and be null and void and of no further force and effect.

4. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Stock Option shall be subject to and governed by all the terms and conditions of the Plan. In the event of a conflict between this Agreement and the Plan, the terms of the Plan shall govern.

5. Transferability. This Agreement is personal to the Optionee and is not transferable by the Optionee in any manner other than by will or by the laws of descent and distribution. All transfers of Options are governed by the terms of the Plan.

6. Status of Stock Option. The Optionee understands that, while this Stock Option is intended to qualify as an "incentive stock option" as defined in Section 422 of the Code to the extent permitted under applicable law, the Company makes no representation or warranty that this Stock Option

will, in fact, so qualify. In order to obtain the benefits of an incentive stock option under Section 422 of the Code, the Optionee understands that this Stock Option must be exercised within three (3) months after termination of employment or within twelve (12) months after termination of employment if such termination is due to death or disability; *provided, that* in no event may this Stock Option be exercised after the Expiration Date. The Optionee further understands that, to obtain such benefits, no sale or other disposition may be made of Option Shares for which incentive stock option treatment is desired within the one-year period beginning on the day after the day of the transfer of such Option Shares to him or her, nor within the two-year period beginning on the day after the Grant Date of this Stock Option. If the Optionee disposes (whether by sale, gift, transfer or otherwise) of any such Option Shares within either of these periods (a "disqualifying disposition"), he or she will notify the Company within thirty (30) days after such disposition. The Optionee also agrees to provide the Company with any information concerning any such dispositions required by the Company for tax purposes. Further, to the extent Underlying Shares and any other incentive stock options of the Optionee having an aggregate Fair Market Value in excess of $100,000 (determined as of the Grant Date) vest in any year, such options will not qualify as incentive stock options. To the extent that any portion of the Stock Option does not qualify as an incentive stock option, whether due to a disqualifying disposition or otherwise, it shall be deemed a non-qualified stock option.

7. Miscellaneous Provisions.

(a) Change and Modifications. This Agreement may not be orally changed, modified or terminated, nor shall any oral waiver of any of its terms be effective. This Agreement may be changed, modified or terminated only by an agreement in writing signed by the Company and the Optionee.

(b) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of Delaware without regard to conflict of law principles.

(c) Equitable Relief. The parties hereto agree and declare that legal remedies may be inadequate to enforce the provisions of this Agreement and that equitable relief, including specific performance and injunctive relief, may be used to enforce the provisions of this Agreement.

(d) Headings. The headings are intended only for convenience in finding the subject matter and do not constitute part of the text of this Agreement and shall not be considered in the interpretation of this Agreement.

(e) Saving Clause. If any provision(s) of this Agreement shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

(f) Notices. All notices, requests, consents and other communications shall be in writing and be deemed given when delivered personally, by telex or facsimile transmission or when received if mailed by first class registered or certified mail, postage prepaid. Notices to the Company or the Optionee shall be addressed as set forth underneath their signatures below, or to such other address or addresses as may have been furnished by such party in writing to the other.

(g) Benefit and Binding Effect. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors, permitted assigns, and legal representatives. The Company has the right to assign this Agreement, and such assignee shall become entitled to all the rights of the Company hereunder to the extent of such assignment.

(h) Counterparts. For the convenience of the parties and to facilitate execution, this Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

[SIGNATURE PAGE FOLLOWS]

The foregoing Agreement is hereby accepted and the terms and conditions thereof hereby agreed to by the undersigned as of the date first above written.

ZAFGEN, INC.

By: _____
Name:
Title:

Address: 148 Sidney Street
Cambridge, MA 02139

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that the Stock Option granted hereby is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions thereof and of the Plan hereby agreed to, by the undersigned as of the date first above written.

OPTIONEE:

_____
Name:

Address:

DESIGNATION OF BENEFICIARY: _____

_____

Beneficiary's Address:

SPOUSE'S CONSENT[2]

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that the Stock Option granted hereby is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions hereof and of the Plan are hereby agreed to, by the undersigned as of the date first above written.

SPOUSE:

_____

Name:

Address:

2 Required only if Optionee's state of residence is a community property state such as Arizona, California, Idaho, Louisiana, New Mexico, Nevada, Texas, Washington or Wisconsin.

Appendix A

STOCK OPTION EXERCISE NOTICE

Zafgen, Inc.
Attention: Treasurer

Pursuant to the terms of the stock option agreement between myself and Zafgen, Inc. (the "Company") dated (the "Agreement"), under the Company's Amended and Restated 2006 Stock Option Plan, I, [Insert Name] , hereby [Circle One] partially/fully exercise such Stock Option by including herein payment in the amount of $ representing the purchase price for [Fill in number of Underlying Shares] Option Shares. I have chosen the following form(s) of payment:

[ ] 1. Cash
[ ] 2. Certified or bank check payable to Zafgen, Inc.
[ ] 3. Other (as described in the Plan (please describe))

_____ .

In connection with my exercise of the Stock Option as set forth above, I hereby represent and warrant to the Company as follows:

(i) I am purchasing the Option Shares for my own account for investment only, and not for resale or with a view to the distribution thereof.

(ii) I have had such an opportunity as I have deemed adequate to obtain from the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company and have consulted with my own advisers with respect to my investment in the Company.

(iii) I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Option Shares and to make an informed investment decision with respect to such purchase.

(iv) I can afford a complete loss of the value of the Option Shares and am able to bear the economic risk of holding such Option Shares for an indefinite period of time.

(v) I understand that the Option Shares may not be registered under the Securities Act of 1933 (it being understood that the Option Shares are being issued and sold in reliance on the exemption provided in Rule 701 thereunder) or any applicable state securities or "blue sky" laws and may not be sold or otherwise transferred or disposed of in the absence of an effective registration statement under the Securities Act of 1933 and under any applicable state securities or "blue sky" laws (or exemptions from the registration requirements thereof). I further acknowledge that certificates representing Option Shares will bear restrictive legends reflecting the foregoing.

(vi) I understand and agree that the Option Shares when issued will continue to be subject to the Plan, including Section 9 thereof.

Sincerely yours,

_____

Name:

Address:

_____

_____

_____

Non-Qualified Stock Option Agreement
under the Zafgen, Inc.
Amended and Restated 2006 Stock Option Plan

Name of Optionee:	_____ (the "Optionee")
No. of Underlying Shares:	_____ Shares of Common Stock
Grant Date:	_____ (the "Grant Date")
Expiration Date:	_____ (the "Expiration Date")
Vesting Start Date:	_____ (the "Vesting Start Date")
Option Exercise Price/Share:	$_____ (the "Option Exercise Price")

Pursuant to the Zafgen, Inc. Amended and Restated 2006 Stock Option Plan (the "Plan"), Zafgen, Inc., a Delaware corporation (together with all successors thereto, the "Company"), hereby grants to the Optionee, who is an officer, employee, director, consultant or other key person of the Company or any of its Subsidiaries, an Option to purchase, on or prior to the Expiration Date (or such earlier date as provided in Section 3 below), all or any part of the number of shares of Common Stock of the Company indicated above (the "Underlying Shares," with such shares once issued being referred to herein and in the Plan as "Option Shares") at the Option Exercise Price per share indicated above.

Notwithstanding anything in this Non-Qualified Stock Option Agreement (the "Agreement") to the contrary, this Stock Option and any Option Shares shall be subject to, and governed by, all the terms and conditions of the Plan, including, without limitation, Section 9 thereof concerning certain restrictions on transfer of Option Shares and related matters. To the extent there is any inconsistency between the terms of the Plan and of this Agreement, the terms of the Plan shall control.

All capitalized terms used in this Agreement and not otherwise defined shall have the respective meanings given such terms in the Plan.

1. Vesting and Exercisability.

(a) No portion of this Stock Option may be exercised until such portion shall have vested and become exercisable. Except as set forth in Section 1(b) below, and subject to the determination of the Committee in its sole discretion to accelerate the vesting schedule hereunder, this Stock Option shall be vested and exercisable with respect to the Underlying Shares in accordance with the following schedule:

One Year Anniversary of the Vesting Start Date (25%) (the "Initial Vesting Date")	[# of options]
Month 13[1] - Month 47 [Date]	[# of options]
Month 48 - [Date]	[# of options]

[1] The remainder of the Options to vest over 3 years, in equal monthly installments, rounded down to the nearest share, at the end of each successive month following the Initial Vesting Date, until the fourth anniversary of the Vesting Start Date, on which date all remaining unvested Options shall vest.

(b) In the case of a Sale Event, this Stock Option shall be treated as provided in Section 4(a) of the Plan.

2. Exercise of Stock Option. Prior to the Expiration Date (or such earlier date provided in Section 3 below), the Optionee may exercise this Stock Option by delivering a Stock Option exercise notice (an "Exercise Notice") in the form of Appendix A hereto indicating his or her election to purchase some or all of the Underlying Shares with respect to which this Stock Option is exercisable at the time of such notice.

3. Termination of Service Relationship. Except as the Committee may otherwise expressly provide, or as may otherwise be expressly provided in any agreement between the Company and the Optionee, if the Optionee's service relationship with the Company or a Subsidiary terminates, the period within which the Optionee may exercise this Stock Option may be subject to earlier termination as set forth below:

(a) Termination of Service Relationship Due to Death or Disability. If the Optionee's service relationship terminates by reason of such Optionee's death or disability (as defined in Section 422(c) of the Code), this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee or by the Optionee's legal representative or legatee for a period of twelve (12) months from the date of such termination or until the Expiration Date, if earlier.

(b) Termination for Cause. If the Optionee's service relationship is terminated by the Company for Cause, all Options (unvested and vested) shall terminate immediately. "Cause" means any of the following: (i) dishonesty, embezzlement, misappropriation of assets or property of the Company; (ii) gross negligence, misconduct, neglect of duties, theft, fraud, or breach of fiduciary duty to the Company; (iii) violation of federal or state securities laws; (iv) breach of an employment, consulting or other agreement with the Company; or (v) the conviction of a felony, or any crime involving moral turpitude, including a plea of guilty or *nolo contendre*.

(c) Other Termination. If the Optionee's service relationship terminates for any reason other than death or disability or Cause, this Stock Option may be exercised, to the extent exercisable on the date of such termination, by the Optionee for a period of three (3) months from the date of termination or until the Expiration Date, if earlier.

(d) Treatment of Unvested Options on Termination of Service Relationship. Any portion of this Stock Option that is not exercisable on the date of termination of the Optionee's service relationship with the Company, for any reason, shall terminate immediately and be null and void and of no further force and effect.

4. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Stock Option shall be subject to and governed by all the terms and conditions of the Plan. In the event of a conflict between this Agreement and the Plan, the terms of the Plan shall govern.

5. Transferability. This Agreement is personal to the Optionee and is not transferable by the Optionee in any manner other than by will or by the laws of descent and distribution. All transfers of Options are governed by the terms of the Plan.

6. Status of Stock Option. This Stock Option is not intended to qualify as an "incentive stock option" as defined in Section 422(b) of the Code.

7. Miscellaneous Provisions.

(a) Change and Modifications. This Agreement may not be orally changed, modified or terminated, nor shall any oral waiver of any of its terms be effective. This Agreement may be changed, modified or terminated only by an agreement in writing signed by the Company and the Optionee.

(b) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of Delaware without regard to conflict of law principles.

(c) Equitable Relief. The parties hereto agree and declare that legal remedies may be inadequate to enforce the provisions of this Agreement and that equitable relief, including specific performance and injunctive relief, may be used to enforce the provisions of this Agreement.

(d) Headings. The headings are intended only for convenience in finding the subject matter and do not constitute part of the text of this Agreement and shall not be considered in the interpretation of this Agreement.

(e) Saving Clause. If any provision(s) of this Agreement shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

(f) Notices. All notices, requests, consents and other communications shall be in writing and be deemed given when delivered personally, by telex or facsimile transmission or when received if mailed by first class registered or certified mail, postage prepaid. Notices to the Company or the Optionee shall be addressed as set forth underneath their signatures below, or to such other address or addresses as may have been furnished by such party in writing to the other.

(g) Benefit and Binding Effect. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors, permitted assigns, and legal representatives. The Company has the right to assign this Agreement, and such assignee shall become entitled to all the rights of the Company hereunder to the extent of such assignment.

(h) Counterparts. For the convenience of the parties and to facilitate execution, this Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

[SIGNATURE PAGE FOLLOWS]

The foregoing Agreement is hereby accepted and the terms and conditions thereof hereby agreed to by the undersigned as of the date first above written.

ZAFGEN, INC.

By: _____
Name:
Title:

Address: 148 Sidney Street
Cambridge, MA 02139

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that the Stock Option granted hereby is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions thereof and of the Plan hereby agreed to, by the undersigned as of the date first above written.

OPTIONEE:

_____
Name:

Address:

DESIGNATION OF BENEFICIARY:

Beneficiary's Address:

SPOUSE'S CONSENT[2]

The undersigned hereby acknowledges receiving and reviewing a copy of the Plan, including, without limitation, Section 9 thereof, and understands that the Stock Option granted hereby is subject to the terms of the Plan and of this Agreement. This Agreement is hereby accepted, and the terms and conditions hereof and of the Plan are hereby agreed to, by the undersigned as of the date first above written.

SPOUSE:

_____

Name:

Address:

2 Required only if Optionee's state of residence is a community property state such as Arizona, California, Idaho, Louisiana, New Mexico, Nevada, Texas, Washington or Wisconsin.

Appendix A

STOCK OPTION EXERCISE NOTICE

Zafgen, Inc.
Attention: Treasurer

Pursuant to the terms of the stock option agreement between myself and Zafgen, Inc. (the "Company") dated (the "Agreement"), under the Company's Amended and Restated 2006 Stock Option Plan, I, [Insert Name] , hereby [Circle One] partially/fully exercise such Stock Option by including herein payment in the amount of $ representing the purchase price for [Fill in number of Underlying Shares] Option Shares. I have chosen the following form(s) of payment:

[ ] 1. Cash
[ ] 2. Certified or bank check payable to Zafgen, Inc.
[ ] 3. Other (as described in the Plan (please describe))

_____.

In connection with my exercise of the Stock Option as set forth above, I hereby represent and warrant to the Company as follows:

(i) I am purchasing the Option Shares for my own account for investment only, and not for resale or with a view to the distribution thereof.

(ii) I have had such an opportunity as I have deemed adequate to obtain from the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company and have consulted with my own advisers with respect to my investment in the Company.

(iii) I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Option Shares and to make an informed investment decision with respect to such purchase.

(iv) I can afford a complete loss of the value of the Option Shares and am able to bear the economic risk of holding such Option Shares for an indefinite period of time.

(v) I understand that the Option Shares may not be registered under the Securities Act of 1933 (it being understood that the Option Shares are being issued and sold in reliance on the exemption provided in Rule 701 thereunder) or any applicable state securities or "blue sky" laws and may not be sold or otherwise transferred or disposed of in the absence of an effective registration statement under the Securities Act of 1933 and under any applicable state securities or "blue sky" laws (or exemptions from the registration requirements thereof). I further acknowledge that certificates representing Option Shares will bear restrictive legends reflecting the foregoing.

(vi) I understand and agree that the Option Shares when issued will continue to be subject to the Plan, including Section 9 thereof.

Sincerely yours,

Name:

Address:

Exhibit 10.3

*****Text Omitted and Filed Separately with the Securities and Exchange Commission**

Confidential Treatment Requested Under 17 C.F.R. Sections 200.80(b)(4) and 230.406

EXCLUSIVE LICENSE AGREEMENT

This Exclusive License Agreement (this "Agreement"), dated as of July 6, 2009 (the "Effective Date"), is made by and between Zafgen, Inc., a Delaware corporation ("Zafgen"), and Chong Kun Dang Pharmaceutical Corporation, a corporation organized under the laws of the Republic of Korea (" CKD"). CKD and Zafgen are sometimes hereinafter referred to each as a " Party" and collectively as the "Parties."

WHEREAS, CKD has been engaged in the development of CKD-732 and a variety of other molecules, which target methionine aminopeptidase 2, and owns and otherwise controls certain patent rights and know-how with respect thereto;

WHEREAS, Zafgen desires to acquire exclusive rights under the CKD Patent Rights (as defined below) and CKD Know-How (as defined below) in order to continue the development thereof and products based thereupon; and

WHEREAS, the Parties desire to enter into an agreement pursuant to which CKD will grant an exclusive license to Zafgen under the CKD Patent Rights and CKD Know-How for Zafgen to develop and commercialize Licensed Compounds and Licensed Products (as defined below).

NOW, THEREFORE, the Parties hereby agree as follows:

Section 1. Definitions.

For the purpose of this Agreement, the following words and phrases shall have the meanings set forth below:

1.1 "Affiliate" of an entity means any other entity which (directly or indirectly) is controlled by, controls or is under common control with such entity. For the purposes of this definition, the term "control" (including, with correlative meanings, the terms "controlled by" and "under common control with") as used with respect to an entity means (i) in the case of a corporate entity, direct or indirect ownership of voting securities entitled to cast at least fifty percent (50%) of the votes in the election of directors or (ii) in the case of a non-corporate entity, direct or indirect ownership of at least fifty percent (50%) of the equity interests with the power to direct the management and policies of such entity, provided that if local law restricts foreign ownership, control shall be established by direct or indirect ownership of the maximum ownership percentage that may, under such local law, be owned by foreign interests.

1.2 "CKD Know-How" means all Technology, now existing or hereafter arising during the time the license grant set forth in Section 2.1 is in effect, owned or otherwise Controlled by CKD or any of its Affiliates, that is related to the CKD Patent Rights or that is reasonably necessary or useful for the manufacture, use, sale, offer for sale, importation, research, development or commercialization of any Licensed Compounds or Licensed Products or Improvements. Exhibit A attached hereto lists certain CKD Know-How.

1.3 "CKD Patent Rights" means the patents and patent applications listed in Exhibit B attached hereto, plus (a) all divisionals, continuations, continuations-in-part thereof or any other patent application claiming priority directly or indirectly to (i) any of the patents or patent applications identified on Exhibit B or (ii) any patent or patent application from which the patents or patent applications identified on Exhibit B claim direct or indirect priority, (b) all patents issuing on any of the foregoing, owned or otherwise Controlled by CKD or any of its Affiliates during the time the license grant set forth in Section 2.1 is in effect that are reasonably necessary for the manufacture, use, sale, offer for sale, importation, research, development or commercialization or other exploitation of any Licensed Compounds or Licensed Products, and (c) with all registrations, reissues, reexaminations, renewals, supplemental protection certificates and extensions of any of the foregoing, and all foreign counterparts thereof.

1.4 "Combination Product" means a Licensed Product that includes at least one additional active ingredient other than Licensed Compound. Drug delivery vehicles, adjuvants, and excipients shall not be deemed to be "active ingredients", except in the case where such delivery vehicle, adjuvant, or excipient is recognized as an active ingredient in accordance with 21 C.F.R. 210.3(b)(7).

1.5 "Commercially Reasonable Efforts" means, with respect to Licensed Products, the carrying out of development and commercialization activities using the efforts that a company within the pharmaceutical industry and similarly situated to Zafgen would reasonably devote to a product of similar market potential or profit potential resulting from its own research efforts, based on conditions then prevailing and taking into account, without limitation, issues of safety and efficacy, product profile, the proprietary position, the then current competitive environment for such product and the likely timing of such product's entry into the market, the regulatory environment and status of such product, and other relevant scientific, technical and commercial factors,

1.6 "Confidential Information" means all Technology, chemical or biological materials, marketing plans, strategies and customer lists, and other information that are disclosed or provided by such Party or its Affiliates to the other Party or its Affiliates, regardless of whether any of the foregoing are marked "confidential" or "proprietary" or communicated to the other by the disclosing Party or its Affiliates in oral, written, graphic, or electronic form.

1.7 "Confidentiality Agreement" means those certain confidentiality agreements, dated March 19, 2007 and November 11, 2008, by and between the Parties.

1.8 "Controlled" or "Controls", when used in reference to patent or other intellectual property rights or Technology, means the legal authority or right of a person or entity to grant a license or sublicense of intellectual property rights to another person or entity, or to otherwise disclose or provide Technology to such other person or entity, without breaching the terms of any agreement with a Third Party.

1.9 "FDA" means the United States Food and Drug Administration or any successor agency thereto.

1.10 "Field" means the treatment and diagnosis of any disease or condition in humans and animals.

1.11 "First Commercial Sale" means, with respect to any Licensed Product on a country-by-country basis, the first sale for use by the general public of such Licensed Product in such country after marketing approval of such Licensed Product has been granted, or marketing and sale of such Licensed Product is otherwise permitted, by the applicable regulatory authority of such country.

1.12 "Generic Product" means any pharmaceutical product containing as an active ingredient a Licensed Compound (or any salt, solvate, crystalline or noncrystalline form of such Licensed Compound) that is also contained in a Licensed Product, and which pharmaceutical product is sold in the same country as such Licensed Product by any Third Party that is not a Sublicensee or Affiliate.

1.13 "Improvements" means all Technology that amount to improvements to any of the inventions claimed by the CKD Patent Rights or to the CKD Know-How made, developed, conceived, owned or otherwise Controlled by CKD or any of its Affiliates after the date hereof, whether or not patentable or patented.

1.14 "IND" means Investigational New Drug Application filed with the FDA required for initiation of clinical trials in humans for the applicable Licensed Product in the United States.

1.15 "Licensed Compound" means (a) the compound known as CKD-732, (b) any metabolic precursors, prodrugs, isomers (chiral and otherwise), metabolites, hydrates, anhydrides, solvates, salt forms, free acids or bases, esters, amides, ethers, complexes, conjugates or polymorphs of any compounds covered by the foregoing clause (a) or this clause (b), (c) all other back-up molecules in CKD's development program mat target methionine aminopeptidase 2 and (d) any metabolic precursors, prodrugs, isomers (chiral and otherwise), metabolites, hydrates, anhydrides, solvates, salt forms, free acids or bases, esters, amides, ethers, complexes, conjugates or polymorphs of any compounds covered by the foregoing clause (c) or this clause (d).

1.16 "Licensed Product" means any pharmaceutical product containing a Licensed Compound (alone or with other active ingredients), in all forms, presentations, formulations and dosage forms. For clarification, Licensed Product shall include any Combination Product.

1.17 "Limited Territory" means the Republic of Korea.

1.18 "NDA" means a New Drug Application filed with the FDA required for marketing approval for the applicable Licensed Product in the United States.

1.19 "Net Sales" means, with respect to any Licensed Product, the amount received by Zafgen and its Affiliates and Sublicensees for *bona fide* sales of such Licensed Product to a Third Party (other than Sublicensees and Zafgen's Affiliates but including distributors for resale), less:

(a) discounts (including cash, quantity and patient program discounts), retroactive price reductions, charge-back payments and rebates granted to managed health care organizations or to federal, state and local governments, their agencies, and purchasers and reimbursers or to trade customers;

(b) credits or allowances actually granted upon claims, damaged goods, rejections or returns of such Licensed Product, including such Licensed Product returned in connection with recalls or withdrawals and expired inventory;

(c) freight out, postage, shipping and insurance charges for delivery of such Licensed Product; and

(d) taxes or duties levied on, absorbed or otherwise imposed on the sale of such Licensed Product, including value-added taxes, or other governmental charges otherwise imposed upon the billed amount, as adjusted for rebates and refunds, to the extent not paid by the Third Party.

Net Sales shall not include any payments among Zafgen, its Affiliates and Sublicensees. Net Sales shall be determined in accordance with generally accepted accounting principles, consistently applied in the United States.

Net Sales for any Combination Product shall be calculated on a country-by-country basis by multiplying actual Net Sales of such Combination Product by the fraction A/B, where A is the weighted average price paid for the Licensed Product contained in such Combination Product if such Licensed Product is sold separately in finished form in such country, and B is the weighted average invoice price paid for such Combination Product in such country. If such Licensed Product is not sold separately in finished form in such country, the parties shall determine Net Sales for such Licensed Product by mutual agreement based on the relative contribution of such Licensed Product and each such other active ingredients in such Combination Product in accordance with the above formula, and shall take into account in good faith any applicable allocations and calculations that may have been made for the same period in other countries.

1.20 "Phase II Trial" means a human clinical trial of a Licensed Product with a sufficient number of subjects that is designed to establish that a pharmaceutical product is safe and efficacious for its intended uses, which trial is intended to support regulatory approval of a Licensed Product, all as described in 21 C.F.R. 312.21(b). For purposes of this Agreement, "Initiation of Phase II Trial" for a Licensed Product means the first dosing of such Licensed Product in a human patient in a Phase II Trial.

1.21 "Phase III Trial" means a human clinical trial of a Licensed Product on a sufficient number of subjects that is designed to establish that a pharmaceutical product is safe and efficacious for its intended use, and to determine warnings, precautions and adverse reactions that are associated with such pharmaceutical product in the dosage range to be

prescribed, which trial is intended to support regulatory approval of a Licensed Product, all as described in 21 C.F.R. 312.21(c). For purposes of this Agreement, "Initiation of Phase III Trial" for a Licensed Product means the first dosing of such Licensed Product in a human patient in a Phase III Trial.

1.22 "Phase IV Trial" means a human clinical trial for a Licensed Product commenced after receipt of marketing approval in the country for which such trial is being conducted and that is conducted within the parameters of the marketing approval for the Licensed Product. Phase IV Trials may include, without limitation, epidemiological studies, modeling and pharmacoeconomic studies, investigator sponsored clinical trials of Licensed Product and post-marketing surveillance studies.

1.23 "Proof of Concept Trial" means a human clinical trial of a Licensed Product designed to evaluate weight loss for anti-obesity effects, " Initiation of Proof of Concept Trial" for a Licensed Product means the first dosing of such Licensed Product in a human patient in a Proof of Concept Trial.

1.24 "Technology" means know-how, trade secrets, chemical and biological materials, formulations, information, documents, studies, results, data and regulatory approvals, data, filings and correspondence (including DMFs), including biological, chemical, pharmacological, toxicological, preclinical, clinical and assay data, manufacturing processes and data, specifications, sourcing information, assays, method and process validations, quality control and testing procedures, whether or not patented or patentable and patent filings and office actions and/or other correspondences.

1.25 "Territory" means worldwide with the exception of the Republic of Korea.

1.26 "Third Party" means any person or entity other than Zafgen or CKD or any of their Affiliates.

1.27 "Valid Claim" means a claim of an issued and unexpired patent contained within the CKD Patent Rights, which claim has not been revoked or held invalid or unenforceable by a court or other government agency of competent jurisdiction from which no appeal can be or has been taken and has not been held or admitted to be invalid or unenforceable through re-examination, disclaimer, reissue, opposition procedure, nullity suit or otherwise, and which claim covers a Licensed Product or its use.

Section 2. License Grant by CKD.

2.1 Exclusive License. CKD, for itself and on behalf of its Affiliates, hereby grants to Zafgen and its Affiliates a non-transferable (except in accordance with Section 10.1). exclusive (even as to CKD and its Affiliates), license in the Field in the Territory with the right to sublicense in accordance with Section 2.2, under the CKD Patent Rights and CKD Know-How, to make, have made, use, sell, offer to sell, import, research, develop, commercialize and otherwise exploit Licensed Compounds and Licensed Products and Improvements. The foregoing license grant includes the right to make reference to all regulatory approvals, data, filings and correspondence (including DMFs) contained within the CKD Know-How.

2.2 Sublicenses.

(a) The exclusive license contained in Section 2.1 includes the right to grant sublicenses (through multiple tiers) to Third Parties (each such Third Party sublicensee, a "Sublicensee"), provided that Zafgen shall provide CKD thirty (30) days prior written notice before entering into any sublicense agreement and Zafgen shall remain responsible for the performance of its Sublicensees hereunder. Zafgen shall provide CKD with a copy of the sublicense agreement for its Sublicensees within ninety (90) days of execution, which copy may be redacted to exclude financial and other sensitive terms and shall be treated as Confidential Information of Zafgen hereunder.

(b) Each sublicense granted by Zafgen to any rights licensed to it hereunder shall terminate immediately upon the termination of the license from CKD to Zafgen with respect to such rights, provided that such sublicensed rights shall not terminate if, as of the effective date of such termination by CKD pursuant to Section 9.2, a Sublicensee is not in material default of its obligations to Zafgen under its sublicense agreement, and within thirty (30) days of such termination the Sublicensee agrees in writing to be bound directly to CKD under a license agreement substantially similar to this Agreement with respect to the rights sublicensed hereunder and the financial obligations of the licensee, substituting such Sublicensee for Zafgen. For the sake of clarity, CKD shall be allowed to renegotiate any provisions of such sublicense that would have a material adverse effect on CKD's business and that arise solely out of the substitution of Sublicensee for Zafgen.

2.3 Restrictions on CKD. CKD and its Affiliates shall not grant or provide to any Third Party any Technology, patent or other intellectual property rights or Confidential Information inconsistent with the terms of this Agreement. For as long as the license grant set forth in Section 2.1 is in effect, (i) CKD Know-How shall be treated as Confidential Information of both Zafgen and CKD, and CKD and its Affiliates shall not disclose CKD Know-How except as permitted by Section 7.1(b) or 7.1(c), and (ii) CKD and its Affiliates shall not provide to any person or entity (other than Zafgen) any Licensed Compounds whose use or sale infringes a Valid Claim.

2.4 CKD Development Efforts. CKD, on behalf of itself and its Affiliates and any sublicensees, shall provide Zafgen with any report that analyzes the data from any study involving any use of the Licensed Compound in the Limited Territory (each an " Interpretable Result," explaining the earliest interpretable results) within thirty (30) days after receipt of such Interpretable Result. Zafgen shall have the opportunity to provide input and feedback regarding CKD's development of the Licensed Compound in the Limited Territory to the extent that a review of an Interpretable Result suggests that CKD's development efforts could effect Zafgen's development of Licensed Products, and CKD shall consider in good faith such input and feedback. In addition, CKD will periodically provide any other data or information regarding its development efforts of the Licensed Compound in the Limited Territory that could effect Zafgen's development efforts of Licensed Products. Any information, including any Interpretable Results, disclosed by CKD pursuant to this Section 2.4, shall be deemed CKD's Confidential Information and shall only be used as specified in this Agreement.

Confidential Treatment Requested

Section 3. Transfer of CKD Know-How.

3.1 Documentation. During the thirty (30) day period following the Effective Date, CKD shall promptly provide to Zafgen copies of all documents, data or other information, including without limitation, regulatory, intellectual property and manufacturing and supply matters, that maybe reasonably useful or necessary to develop and commercialize the Licensed Compounds and the Licensed Products, and that has not already been provided to Zafgen during the diligence process.

3.2 Technical Assistance. During the six (6) month period following the Effective Date, CKD shall cooperate with Zafgen to transfer to Zafgen any additional CKD Know-How licensed under Section 2.1, to facilitate the transfer of development efforts related to Licensed Compounds and Licensed Products. Such cooperation shall include, without limitation, providing Zafgen with reasonable access by teleconference or in-person at CKD's facilities to CKD personnel involved in the research and development of Licensed Compounds and Licensed Products to provide Zafgen with a reasonable level of technical assistance and consultation in connection with the transfer of CKD Know-How.

Section 4. Development and Commercialization.

4.1 Commercially Reasonable Efforts.

(a) Zafgen, or one of its Affiliates or Sublicensees, as applicable, shall use Commercially Reasonable Efforts to develop and commercialize at least one Licensed Product in accordance with the development schedule attached hereto as Exhibit C (the "Development Schedule"), which may be amended from time to time in accordance with the terms of that certain Manufacturing and Supply Agreement, by and between Zafgen and CKD, dated as of even date herewith (the "Manufacturing Agreement"), to adjust the schedule to account for delays in delivery of Product (as defined in the Manufacturing Agreement). If the development efforts are delayed by more than […***…] from that which is set forth in the Development Schedule, the Parties shall take reasonable measures to remedy such delay. If development efforts are delayed by more than […***…] from that which is set forth on the Development Schedule, and the Parties agree that there is no reasonable method to moving the development efforts ahead without further undue delay, this Agreement shall be terminated within thirty (30) days of such agreement.

(b) Zafgen shall provide CKD with informal development reports on a bi-annual basis, the form and content of which shall be mutually agreed upon by the Parties. The contents of such development reports shall be deemed Zafgen's Confidential Information and shall only be used as specified in this Agreement.

4.2 Responsibilities and Costs. Zafgen shall have sole responsibility for, and shall bear all its costs of conducting, all development and commercialization of Licensed Compounds

and Licensed Products (including manufacturing all required materials, filing for and obtaining all required regulatory approvals and submitting any adverse event reports to the applicable regulatory authority). Zafgen shall own the results of all such activities, and as between the Parties, all such regulatory approvals shall be obtained by and in the name of Zafgen (or its Affiliates or Sublicensees).

Section 5. Zafgen Payments. The payments set forth in this Section 5 only relate to Licensed Products for human uses. If Zafgen develops a Licensed Product for the treatment and/or diagnosis of any disease or condition in animals, the Parties shall enter into a written amendment to this Agreement, documenting the payments to be made to CKD with respect to Licensed Products for such uses.

5.1 Initial License Fee. Zafgen shall pay to CKD a non-refundable, one-time fee of […***…] U.S. dollars (US$[…***…]), which shall be paid to CKD as follows:

(a) […***…] U.S. dollars (US$[…***…]) shall be paid to CKD within […***…] days of the Effective Date; and

(b) The remaining […***…] U.S. dollars (US$[…***…]) shall be paid to CKD within […***…] days after the date on which each of the following conditions has been satisfied:

(i) […***…];

(ii) […***…]; and

(iii) […***…].

5.2 One Time Fee. Zafgen shall pay to CKD a one-time non-refundable payment of […***…] U.S. dollars (US$[…***…]) within […***…] days after […***…].

5.3 Milestone Payments. As set forth in the following table, Zafgen shall make non-refundable Milestone Payments to CKD upon achievement of each of the Milestones Events. Each Milestone Payment shall be payable by Zafgen to CKD within […***…] days after the achievement of the corresponding Milestone Event with respect to the first Licensed Product. Only one set of Milestone Payments are payable hereunder no matter how many times any of the Milestone Events are achieved.

"Milestone Event"	**"Milestone Payment"**
1. […***…]	US$[…***…]
2. […***…]	US$[…***…]
3. […***…]	US$[…***…]
4. […***…]	US$[…***…]
5. […***…]	US$[…***…]
6. […***…]	US$[…***…]

5.4 Royalties.

(a) *Royalties*. Subject to the terms and conditions of this Agreement (including the remainder of this Section 5). Zafgen shall pay to CKD royalties, on a country-by-country and product-by-product basis for the period of time specified in Section 5.4(b), at the graduated royalty rates specified in the following table with respect to the aggregate annual worldwide Net Sales of all Licensed Products in a calendar year:

Aggregate Annual Worldwide Net Sales of All Licensed Products in a Calendar Year	**Royalty Rate**
On such Net Sales up to […***…] U.S. dollars (US$[…***…])	[…***…] percent ([…***…]%)
On such Net Sales above […***…] U.S. dollars (US$[…***…]) and less than […***…] U.S. dollars (US$[…***…])	[…***…] percent ([…***…]%)
On such Net Sales above […***…] U.S. dollars (US$[…***…])	[…***…] percent ([…***…]%)

The applicable royalty rate shall be determined by reference to all Net Sales on which royalties are paid in a given calendar year. By way of example, in a given calendar year, if the aggregate annual Net Sales in the Territory for all Licensed Products for which royalties are due under this Section were USD$[…***…], the following royalty payment would be payable (subject to all reductions set forth in this Agreement): […***…].

(b) *Royalty Term.* The royalties due under Section 5.4(a) shall be payable on Net Sales from the First Commercial Sale of a particular Licensed Product, on a country-by-country basis, until the later of (i) the expiration of the last to expire patent in such country within the CKD Patent Rights containing a Valid Claim covering such Licensed Product or its use for which regulatory approval has been obtained in such country or (ii) ten (10) years from such First Commercial Sale in such country (the "Royalty Period"). For clarity, for the purpose of determining the ten (10)-year period under Section 5.4(b)(ii) above, with respect to all Licensed Products containing the same Licensed Compound, the date on which the First Commercial Sale of the first such Licensed Product is made shall be deemed as the First Commercial Sale of all such Licensed Products. In addition, for the purposes of this Section 5.4(h), the variations of any Licensed Compound identified in clauses (b) and (d) of the definition of the term "Licensed Compound" shall be deemed as the same type of "Licensed Compound."

(c) *Generic Competition*. If during the Royalty Period, a Generic Product is launched for commercial sale in a country where royalties are payable, the royalty rates specified in Section 5.4(a) shall be reduced by […***…] percent ([…***…]%) in such country. Such reduction shall be first applied with respect to such country starting with sales in the calendar quarter following the first commercial sale of such Generic Product.

(d) *Only One Royalty*. Only one royalty shall be due with respect to the sale of the same unit of Licensed Product. Only one royalty shall be due hereunder on the sale of a Licensed Product even if the manufacture, use, sale, offer for sale or importation of such Licensed Product infringes more than one claim of the CKD Patent Rights.

(e) *Exceptions*. No royalties shall accrue on the disposition of Licensed Products in reasonable quantities by Zafgen, its Affiliates or Sublicensees as part of an expanded access program, a Phase IV Trial, or as donations to non-profit institutes, government agencies for non-commercial purposes, provided, in each case that either Zafgen, its Affiliates or Sublicensees supply such Licensed Product at or below cost.

5.5 Sublicensing Payments. Zafgen shall pay CKD […***…] percent ([…***…]%) of any upfront licensing fees that Zafgen receives as a result of sublicensing any of its rights under this Agreement to a Sublicensee, provided that Zafgen's total obligation under this Section 5.5 shall not exceed $US[…***…] in any calendar year. Any payment due to CKD pursuant to this Section 5.5, shall be made within […***…] days after Zafgen's receipt of such upfront payment from the Sublicensee.

5.6 Credits and Reductions. […***…] percent ([…***…]%) of Third Party running royalties of actual costs paid or payable by Zafgen, its Affiliates or Sublicensees for licenses and acquisitions by Zafgen, its Affiliates or Sublicensees for patent or other intellectual property rights reasonably necessary for the manufacture, use, sale, offer for sale or importation of any Licensed Product in a particular country shall be creditable against payments owed CKD under Section 5.4. Notwithstanding the foregoing provisions of this Section, in no event shall CKD receive less than […***…] percent ([…***…]%) of the aggregate original payments due under Section 5.4 for any given calendar quarter (with any unused credits to accumulate and be applied against future payments due to CKD).

5.7 Payment Terms.

(a) *Manner of Payment*. All payments to be made by Zafgen hereunder shall be made in U.S. dollars by wire transfer to such bank account as CKD may designate.

(b) *Reports and Royalty Payments*. For as long as royalties are due under Section 5.4. Zafgen shall furnish to CKD a written report, within […***…] days after the end of each calendar quarter (with the first such written report being provided at the end of the calendar quarter during which the First Commercial Sale took place), showing the amount of Net Sales of Licensed Products and royalty due for such calendar quarter. Royalty payments for each calendar quarter shall be due at the same time as such written report for the calendar quarter. The report shall include, at a minimum, the following information for the applicable calendar quarter, each listed by product and by country of sale: (i) the number of units of Licensed Products sold by Zafgen and its Affiliates and Sublicensees on which royalties are owed CKD hereunder; (ii) the gross amount received for such sales; (iii) deductions taken from such gross amount as specified in the definition of "Net Sales"; (iv) Net Sales; (v) the amounts of any credits or reductions permitted by Section 5.6 or elsewhere hereunder; (vi) the royalties and Milestone Payments owed to CKD, listed by category; and (vii) the computations for any applicable currency conversions pursuant to Section 5.7(d). Zafgen shall use commercially reasonable efforts to obtain permission from each Sublicensee to share with CKD the

information listed in the foregoing clauses (other than clause (iv)) as it relates to Net Sales made by such Sublicensee, and to the extent successful, will include such Sublicensee information in such report. All such reports shall be treated as Confidential Information of Zafgen.

(c) *Records and Audits*. Zafgen shall keep, and shall cause each of its Affiliates and Sublicensees, as applicable, to keep adequate books and records of accounting for the purpose of calculating all royalties payable to CKD hereunder. For the two (2) years next following the end of the calendar year to which each shall pertain, such books and records of accounting (including those of Zafgen's Affiliates and Sublicensees, as applicable) shall be kept at each of their principal places of business and shall be open for inspection at reasonable times and upon reasonable notice by an independent certified accountant selected by CKD, which is reasonably acceptable to Zafgen, for the sole purpose of inspecting the royalties due to CKD under this Agreement. In no event shall such inspections be conducted hereunder more frequently than once every twelve (12) months. Such accountant must have executed and delivered to Zafgen and its Affiliates and Sublicensees, as applicable, a confidentiality agreement as reasonably requested by Zafgen, which shall include provisions limiting such accountant's disclosure to CKD to only the results and basis for such results of such inspection. The results of such inspection, if any, shall be binding on both Parties. Any underpayments shall be paid by Zafgen within thirty (30) days of notification of the results of such inspection. Any overpayments shall be fully creditable against amounts payable in subsequent payment periods. CKD shall pay for such inspections, except that in the event there is any upward adjustment in aggregate royalties payable for any calendar year shown by such inspection of more than ten percent (10%) of the amount paid, Zafgen shall reimburse CKD for any reasonable out-of-pocket costs of such accountant. Any underpayments or overpayments under this Section 5.7(c) shall be subject to the currency exchange provisions set forth in Section 5.7(d) as applied to the calendar quarter during which the royalty obligations giving rise to such underpayment or overpayment were incurred by Zafgen.

(d) *Currency Exchange*. With respect to Net Sales invoiced in U.S. dollars, the Net Sales and the amounts due to CKD hereunder shall be expressed in U.S. dollars. With respect to Net Sales invoiced in a currency other than U.S. dollars, the Net Sales shall be expressed in the domestic currency of the entity making the sale, together with the U.S. dollar equivalent, calculated using the official rate of exchange of such domestic currency as quoted by *The Wall Street Journal*, New York edition, for the last business day of the calendar quarter for which the payment is made.

(e) *Tax Withholding; Value-Added Tax* Zafgen shall have the right to withhold from payments due hereunder any tax which CKD is liable to under the appropriate tax laws and for the payments of which Zafgen is responsible. CKD shall be sent tax receipts by Zafgen certifying the payments of the tax, so that CKD may use it for claiming a credit on the tax payable by CKD in The Republic of Korea on such payments. No deduction shall be made or a reduced amount shall be deducted if CKD furnishes a document from all required tax authorities to Zafgen sufficiently before the due date of the payments, certifying that the payments are exempt from tax or subject to a reduced tax rate according to the applicable convention for the avoidance of double taxation. Except for such withholding taxes and except for the corporate income tax of CKD, any other taxes, assessments, fees and charges imposed against payments

due to CKD hereunder shall be borne by Zafgen. Besides the above said, both Parties will undertake commercially reasonable efforts to minimize the allover tax burden for each of the Parties. Value-added tax shall apply as legally required.

(f) *Interest Due*. Zafgen shall pay CKD interest on any payments that are not paid on or before the date such payments are due under this Agreement at a rate of one-half percent (0.5%) per month or the maximum applicable legal rate, if less, calculated on the total number of days payment is delinquent.

Section 6. Patent Prosecution, Infringement and Extensions.

6.1 Appointment and Cooperation. With respect to all of the rights and activities of Zafgen set forth in this Section 6. CKD hereby appoints Zafgen as its agent for such purposes with the authority to act on CKD's behalf with respect to the CKD Patent Rights. CKD shall cooperate with Zafgen in the exercise of Zafgen's authority granted herein, and shall execute such documents and take such additional action as Zafgen may request in connection therewith. The Parties shall update Exhibit B upon either Party's reasonable request.

6.2 Additional Patents. Each Party shall give prompt notice to the other Party if such Party applies for or obtains any patent with respect to the Licensed Products and/or the Licensed Technology in the Territory and the Limited Territory. Any additional patent obtained for CKD's improvement of the Licensed Products shall be the sole property of CKD, but any additional patent obtained for Zafgen's improvement shall be the sole property of Zafgen. Each Party shall grant an exclusive license with regards to any additional patents in the Territory and the Limited Territory without any royalty or other consideration.

6.3 Prosecution and Maintenance.

(a) *By Zafgen*. On the Effective Date, CKD shall provide Zafgen with copies of the complete prosecution files for all patents and patent applications listed on Exhibit B. Zafgen shall be solely responsible for the preparation, prosecution (including any interferences, oppositions, reissue proceedings and reexaminations) and maintenance of the CKD Patent Rights, and all filing, prosecution, and maintenance decisions with respect to the CKD Patent Rights shall be made by Zafgen, provided CKD shall retain the right to give comments to Zafgen on material aspects of those activities. Zafgen shall be responsible for all its costs incurred for such preparation, prosecution and maintenance. Each Party shall provide to the other Party copies of any papers relating to the filing, prosecution or maintenance of CKD Patent Rights promptly upon receipt. CKD shall not take any action with respect to the prosecution or maintenance of any CKD Patent Rights without the prior written consent of Zafgen, except as contemplated by Section 6.2(b).

(b) *By CKD*. Zafgen shall not knowingly permit any of the CKD Patent Rights to be abandoned in any country without CKD first being given an opportunity to assume full responsibility for the continued prosecution and maintenance of same. In the event that Zafgen decides not to continue the prosecution or maintenance of a patent application or patent within CKD Patent Rights in any country, Zafgen shall provide CKD with notice of this decision

at least thirty (30) days prior to any pending lapse or abandonment thereof. In the event that CKD elects to assume responsibility for such prosecution and maintenance within thirty (30) days of Zafgen's notice, Section 6.2(a) shall thereafter apply to such patent application(s) and patent(s) except that the role of Zafgen and CKD shall be reversed thereunder (including that CKD shall be solely responsible for all costs arising from those activities). Such patent application(s) and patent(s) shall otherwise continue to be subject to all of the terms and conditions of the Agreement in the same way as the other CKD Patent Rights.

6.4 Enforcement and Defense.

(a) *By Zafgen*. In the event that CKD or Zafgen becomes aware of a suspected infringement of any CKD Patent Right, or any such CKD Patent Right is challenged in any action or proceeding (other than any interferences, oppositions, reissue proceedings or reexaminations, which are addressed above), such Party shall notify the other Party promptly, and following such notification, the Parties shall confer. Zafgen shall have the right, but shall not be obligated, to defend any such action or proceeding or bring an infringement action with respect to such infringement at its own expense, in its own name and entirely under its own direction and control, or settle any such action or proceeding by sublicense. CKD shall reasonably assist Zafgen in any action or proceeding being defended or prosecuted if so requested, and shall join such action or proceeding if reasonably requested by Zafgen or required by applicable law. CKD shall have the right to participate in any such action or proceeding with its own counsel at its own expense and without reimbursement.

(b) *By CKD*. If Zafgen elects not to settle, defend or bring any action for infringement described in Section 6.3(a) and so notifies CKD, then, if and only if such infringement would give rise to royalties payable to CKD hereunder had Zafgen conducted the alleged infringing activities, CKD may defend or bring such action at its own expense, in its own name and entirely under its own direction and control, subject to the following: Zafgen shall reasonably assist CKD in any action or proceeding being defended or prosecuted if so requested, and shall join such action or proceeding if requested by CKD or required by applicable law. Zafgen shall have the right to participate in any such action or proceeding with its own counsel at its own expense and without reimbursement. No settlement of any such action or proceeding which restricts the scope, or adversely affects the enforceability, of a CKD Patent Right may be entered into by CKD without the prior written consent of Zafgen.

(c) *Withdrawal*. If either Party brings an action or proceeding under this Section 6.3 and subsequently ceases to pursue or withdraws from such action or proceeding after full discussion with the other party, it shall promptly notify the other Party and the other Party may substitute itself for the withdrawing Party under the terms of this Section 6.3.

(d) *Damages*. In the event that either Party exercises the rights conferred in this Section 6.3 and recovers any damages or other sums in such action or proceeding or in settlement thereof, such damages or other sums recovered shall first be applied to all out-of-pocket costs and expenses incurred by the Parties in connection therewith (including reasonable attorneys' fees), unless not reimbursable hereunder. If such recovery is insufficient to cover all such costs and expenses of both Parties, the controlling Party's costs shall be paid in full first

before any of the other Party's costs. If after such reimbursement any funds shall remain from such damages or other sums recovered, such funds shall be retained by the Party that controlled the action or proceeding under this Section 6.3; provided, however, that (i) if Zafgen is the Party that controlled such action or proceeding, CKD shall receive out of any such remaining recovery received by Zafgen an amount equal to royalties payable hereunder by treating such remaining recovery as "Net Sales" hereunder and (ii) if CKD is the Party that controlled such action or proceeding, the remaining recovery received by CKD shall be shared equally between Zafgen and CKD.

6.5 Third Party IP Claims. In the event of (i) a holding in any action or proceeding enjoining Zafgen or any of its Affiliates or Sublicensees from manufacturing, using, selling, offering for sale, importing, developing or commercializing any Licensed Compounds or Licensed Products, or holding Zafgen or any such other entities liable for damages for any such activities, in each case such holding unappealable or unappealed within the time allowed for appeal, or (ii) a settlement of any action or proceeding requiring payment of damages by Zafgen or any such party, CKD shall refund to Zafgen royalties paid with respect to all Licensed Products affected by such action or proceeding, sufficient to reimburse Zafgen and all such entities for all damages and costs and expenses paid or incurred by any of them with respect to such action or proceeding attributable to infringement or misappropriation of any Third Party's patent or other intellectual property rights, provided that, in the event that such refund is not sufficient to compensate for all such damages and expenses, Zafgen shall be entitled to reduce royalties payable to CKD under Section 5.4(a) in each subsequent calendar quarter until such time as Zafgen recovers in full all such damages and expenses.

6.6 Patent Extensions: Orange Book Listings; Patent Certifications .

(a) *Patent Term Extension*. If elections with respect to obtaining patent term extension or supplemental protection certificates or their equivalents in any country with respect to CKD Patent Rights or other patent rights covering Licensed Products or their manufacture or use are available, Zafgen shall have the sole right to make any such elections.

(b) *Data Exclusivity and Orange Book Listings*. With respect to data exclusivity periods (such as those periods listed in the FDA's Orange Book (including any available pediatric extensions) or periods under national implementations of Article 10.1(a)(iii) of Directive 2001/EC/83, and all equivalents in any country), Zafgen shall have the sole right to seek and maintain all such data exclusivity periods available for the Licensed Products.

(c) *Notification of Patent Certification*. CKD shall notify and provide Zafgen with copies of any allegations of alleged patent invalidity, unenforceability or non-infringement of a CKD Patent Right pursuant to a Paragraph IV Patent Certification by a Third Party filing an Abbreviated New Drug Application, an application under § 505(b)(2) of the United States Federal Food, Drug, and Cosmetic Act, as amended, or any other similar patent certification by a Third Party, and any foreign equivalent thereof. Such notification and copies shall be provided to Zafgen within two (2) days after CKD receives such certification, and shall be sent to the address set forth in Section 10.5.

Section 7. Confidential Information and Publicity.

7.1 Confidentiality.

(a) *Confidential Information*. Except as expressly provided herein, each of the Parties agrees that, for itself and its Affiliates, and for as long as this Agreement is in effect and for a period of ten (10) years thereafter, a Party and its Affiliates (the "Receiving Party") receiving Confidential Information of the other Party or its Affiliates (the "Disclosing Party") shall (i) not disclose such Confidential Information to any Third Party without the prior written consent of the Disclosing Party, except for disclosures expressly permitted below, and (ii) not use such Confidential Information for any purpose except those licensed or otherwise authorized or permitted by this Agreement. For clarity, all Confidential Information of Zafgen received by or disclosed to CKD hereunder shall be used by CKD only for ensuring that Zafgen complies with its obligations hereunder and for no other purposes.

(b) *Exceptions*. The obligations in Section 7.1(a) shall not apply with respect to any portion of the Confidential Information that the Receiving Party can show by competent proof:

(i) is publicly disclosed by the Disclosing Party, either before or after it is disclosed to the Receiving Party hereunder;

(ii) was known to the Receiving Party or any of its Affiliates, without any obligation to keep it confidential or any restriction on its use, prior to disclosure by the Disclosing Party;

(iii) is subsequently disclosed to the Receiving Party or any of its Affiliates by a Third Party lawfully in possession thereof and without any obligation to keep it confidential or any restriction on its use;

(iv) is published by a Third Party or otherwise becomes publicly available or enters the public domain, either before or after it is disclosed to the Receiving Party; or

(v) has been independently developed by employees or contractors of the Receiving Party or any of its Affiliates without the aid, application or use of Confidential Information of the Disclosing Party.

(c) *Authorized Disclosures*. The Receiving Party may disclose Confidential Information belonging to the Disclosing Party to the extent (and only to the extent) such disclosure is reasonably necessary in the following instances:

(i) subject to Section 7.2, by either Party in order to comply with applicable non-patent law (including any securities law or regulation or the rules of a securities exchange) and with judicial process, if in the reasonable opinion of the Receiving Party's counsel, such disclosure is necessary for such compliance;

(ii) by either Party, in connection with prosecuting or defending litigation, making regulatory filings, and filing, prosecuting and enforcing patent applications and patents (including CKD Patent Rights in accordance with Section 6):

(iii) by Zafgen, on a "need to know basis" to its Affiliates, potential and future collaborators (including Sublicensees), permitted acquirers or assignees under Section 10.1, research collaborators, subcontractors, investment bankers, investors, lenders, and their and each of Zafgen and its Affiliates' respective directors, employees, contractors and agents; and

(iv) by CKD, "on a need to know basis" to its Affiliates, permitted acquirers or assignees under Section 10.1 investment bankers, investors, lenders, and their and CKD and its Affiliates' respective directors, employees, contractors and agents,

provided that (1) with respect to Sections 7.1(c)(i) or 7.1(c)(ii), where reasonably possible, the Receiving Party shall notify the Disclosing Party of the Receiving Party's intent to make any disclosure pursuant thereto sufficiently prior to making such disclosure so as to allow the Disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information to be disclosed, and (2) with respect to Sections 7.1(c)(iii) and 7.1(c)(iv), each of those named people and entities must be bound prior to disclosure by confidentiality and non-use restrictions at least as restrictive as those contained in this Section 7 (other than investment bankers, investors and lenders, who must be bound prior to disclosure by commercially reasonable obligations of confidentiality). In addition to the foregoing, Zafgen and its Affiliates and Sublicensees may make such disclosures of CKD Know-How specifically concerning the Licensed Compound and its use as any of them may deem reasonably necessary for their business. If and when any Confidential Information is disclosed in accordance with this Section 7.1, such disclosure shall not cause any such information to cease to be Confidential Information except to the extent that such disclosure results in a public disclosure of such information (other than through breach of this Agreement).

7.2 Terms of this Agreement; Publicity; Use of Name. The Parties agree that the terms of this Agreement shall be treated as Confidential Information of both Parties, and thus may be disclosed only as permitted by Section 7.1(c). Each Party agrees not to issue any press release or public statement disclosing information relating to this Agreement or the transactions contemplated hereby or the terms hereof without the prior written consent of the other Party, which consent shall not be unreasonably withheld, or as permitted by Section 7.1(c). Under no circumstances may either Party use the name of the other Party or any of its personnel in any publication or any form of advertising without such other Party's prior written consent.

7.3 Relationship to the Confidentiality Agreement. This Agreement supersedes the Confidentiality Agreement, provided that all "Confidential Information" disclosed or received by the Parties thereunder shall be deemed "Confidential Information" hereunder and shall be subject to the terms and conditions of this Agreement.

Section 8. Warranties; Limitations of Liability; Indemnification.

8.1 CKD Representations and Warranties. CKD covenants, represents and warrants to Zafgen that as of the Effective Date:

(a) CKD is a corporation duly organized, validly existing and in good standing under the laws of the Republic of Korea, and it has full right and authority to enter into this Agreement and to grant the licenses and other rights to Zafgen as herein described.

(b) This Agreement has been duly authorized by all requisite corporate action, and when executed and delivered will become a valid and binding contract of CKD enforceable against CKD in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and other law affecting creditors' rights generally from time to time in effect, and to general principles of equity.

(c) The execution, delivery and performance of this Agreement does not conflict with any other agreement, contract, instrument or understanding, oral or written, to which CKD is a party, or by which it is bound, nor will it violate any law applicable to CKD.

(d) All necessary consents, approvals and authorizations of all regulatory and governmental authorities and other persons or entities required to be obtained by CKD in connection with the execution and delivery of this Agreement and the performance of its obligations hereunder have been obtained.

(e) Exhibit A contains a list of all CKD Know-How in CKD's possession as of the Effective Date that CKD has reasonably concluded Zafgen will find reasonably necessary or useful for the manufacture, use, sale, offer for sale, importation, research, development or commercialization or other exploitation of any Licensed Compounds or Licensed Products or Improvements. Attached hereto as Exhibit B is a complete and accurate list of all patents and patent applications owned (in whole or in part) or otherwise Controlled by CKD or any of its Affiliates that the manufacture, use, sale, offer for sale or importation of any Licensed Compounds (alone or as part of any Combination Product) would infringe. To the knowledge of CKD, the issued claims included in the CKD Patent Rights are valid and enforceable, and no written claim has been made (except by a patent examiner during prosecution of the patent application(s) that resulted in any such issued patent claims), and no action or proceeding has been commenced or threatened, alleging to the contrary. CKD is the sole and exclusive owner of all right, title and interest in and to the CKD Patent Rights. None of the CKD Patent Rights or CKD Know-How is subject to any Hen, security interest or other encumbrance. To CKD's knowledge, the conception and reduction to practice of the CKD Patent Rights have not constituted or involved the misappropriation of trade secrets or other rights or property of any Third Party. There are no claims, judgments or settlements against or amounts with respect thereto owed by CKD or any of its Affiliates relating to the CKD Patent Rights. To CKD's knowledge, there has been no infringement by any Third Party of any CKD Patent Rights. The use or practice of the license grant contained in Section 2.1 shall not trigger any payment obligation by CKD or any of its Affiliates or Former Licensees (as defined below) to any Third Party.

(f) There is no pending action or proceeding alleging, or, to CKD's knowledge, any written communication alleging, that the manufacture, use, sale, offer for sale or importation of any Licensed Compounds (alone or as part of any Combination Product), the activities of CKD or any of its Affiliates or any of their licensees with respect to any such Licensed Compounds, or the practice or use of the CKD Patent Rights or CKD Know-How, has or will infringe or misappropriate any patent or other intellectual property rights of any Third Party.

(g) CKD has never granted any license to a Third Party under any CKD Patent Rights or CKD Know-How with respect to any Licensed Compound, nor has CKD been granted any license from a Third Party under any CKD Patent Rights or CKD Know-How with respect to any Licensed Compound.

(h) As of the Effective Date, CKD does not have any knowledge of any scientific or clinical, regulatory or other facts or circumstances that would materially and adversely affect the safety, efficacy or market performance of any Licensed Compounds (alone or as part of any Combination Product) that have not been communicated to Zafgen.

8.2 Zafgen Representations and Warranties. Zafgen covenants, represents and warrants to CKD that as of the Effective Date:

(a) Zafgen is a corporation duly organized, validly existing and in good standing under the laws of state in which it is incorporated, and it has full right and authority to enter into this Agreement and to accept the rights and licenses granted as herein described.

(b) This Agreement has been duly authorized by all requisite corporate action, and when executed and delivered will become a valid and binding contract of Zafgen enforceable against Zafgen in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and other laws affecting creditors' rights generally from time to time in effect, and to general principles of equity.

(c) The execution, delivery and performance of this Agreement does not conflict with any other agreement, contract, instrument or understanding, oral or written, to which Zafgen is a party, or by which it is bound, nor will it violate any law applicable to Zafgen.

(d) All necessary consents, approvals and authorizations of all regulatory and governmental authorities and other persons or entities required to be obtained by Zafgen in connection with the execution and delivery of this Agreement.

8.3 Disclaimer. EXCEPT AS EXPRESSLY SET FORTH HEREIN, NEITHER CKD NOR ZAFGEN MAKES ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

8.4 Limitation of Liability. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT OR OTHERWISE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER OR ANY THIRD PARTY WITH RESPECT TO ANY SUBJECT MATTER OF THIS

AGREEMENT FOR ANY INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES; PROVIDED, HOWEVER, THAT THIS SECTION 8.4 SHALL NOT APPLY TO THE PARTIES' INDEMNIFICATION RIGHTS AND OBLIGATIONS UNDER SECTIONS 8.6(a) AND 8.6(b).

8.5 Performance by Affiliates. The Parties recognize that each Party may perform some or all of its obligations under this Agreement through Affiliates and Third Party contractors; provided, however, that each Party shall remain responsible and liable for the performance by its Affiliates and Third Party contractors and shall cause its Affiliates and Third Party contractors to comply with the provisions of this Agreement in connection therewith.

8.6 Indemnification.

(a) Zafgen Indemnity. Zafgen hereby agrees to indemnify and hold CKD and its Affiliates, and their respective employees, directors, agents and contractors, and their respective successors, heirs and assigns and representatives (" CKD Indemnitees") harmless from and against all claims, liability, threatened claims, damages, expenses (including reasonable attorneys' fees), suits, proceedings, losses or judgments, whether for money or equitable relief, of any kind, including death, personal injury, illness, product liability or property damage or the failure to comply with applicable law (but not infringement or misappropriation of CKD Patent Rights) (collectively, "Losses"), arising from any Third Party claim due to the use, manufacture, sale, development or commercialization of any Licensed Compounds or Licensed Products by or for Zafgen or any of its Affiliates, Sublicensees, agents and contractors, except to the extent that such Losses arise from (a) the negligence, recklessness or willful misconduct of any CKD Indemnitees or (b) any breach of this Agreement by CKD.

(b) CKD Indemnity. CKD hereby agrees to indemnify and hold Zafgen, its Affiliates and Sublicensees, and their respective employees, directors, agents and contractors, and their respective successors, heirs and assigns and representatives (" Zafgen Indemnitees") harmless from and against all Losses arising from any Third Party claim due to the use, manufacture, sale, development or commercialization of any Licensed Compounds or Licensed Products by or for CKD or any of its Affiliates, licensees (other than Zafgen and its Affiliates and Sublicensees), agents and contractors, except to the extent that such Losses arise from (a) the negligence, recklessness or willful misconduct of any Zafgen Indemnitees or (b) any breach of this Agreement by Zafgen.

(c) Indemnification Procedure. A claim to which indemnification applies under Section 8.6(a) or 8.6(b) shall be referred to herein as a "Claim". If any person or entity (each, an "Indemnitee") intends to claim indemnification under this Section 8.6, the Indemnitee shall notify the other Party (the "Indemnitor") in writing promptly upon becoming aware of any claim that may be a Claim (it being understood and agreed, however, that the failure by an Indemnitee to give such notice shall not relieve the Indemnitor of its indemnification obligation under this Agreement except and only to the extent that the Indemnitor is actually prejudiced as a result of such failure to give notice). The Indemnitor shall have the right to assume and control the defense of such Claim at its own expense with counsel selected by the Indemnitor and reasonably acceptable to the Indemnitee; provided, however, that an Indemnitee shall have the

right to retain its own counsel, with the fees and expenses to be paid by the Indemnitee, if representation of such Indemnitee by the counsel retained by the Indemnitor would be inappropriate due to actual or potential differing interests between such Indemnitee and any other party represented by such counsel in such proceedings. If the Indemnitor does not assume the defense of such Claim as aforesaid, the Indemnitee may defend such Claim but shall have no obligation to do so. The Indemnitee shall not settle or compromise any Claim without the prior written consent of the Indemnitor, and the Indemnitor shall not settle or compromise any Claim in any manner which would have an adverse effect on the Indemnitee's interests, without the prior written consent of the Indemnitee, which consent, in each case, shall not be unreasonably withheld. The Indemnitee shall reasonably cooperate with the Indemnitor at the Indemnitor's expense and shall make available to the Indemnitor all pertinent information under the control of the Indemnitee, which information shall be subject to Section 7.1.

8.7 Insurance. Zafgen shall procure and maintain insurance policies for the following coverages with respect to personal injury, bodily injury and property damage arising out of Zafgen's performance under this Agreement: (a) during the term of this Agreement, comprehensive general liability, including broad form and contractual liability, in a minimum amount of $[…***…] combined single limit per occurrence and in the aggregate; (b) prior to the commencement of clinical trials involving any Licensed Products, clinical trials coverage in a minimum amount of $[…***…] combined single limit per occurrence and in the aggregate; and (c) prior to the First Commercial Sale of the first Licensed Product, product liability coverage, in a minimum amount of $[…***…] combined single limit per occurrence and in the aggregate, with the coverage provided for in clauses (b) and (c) to remain in force during the term of this Agreement and for at least […***…] years thereafter. Zafgen shall provide CKD with insurance certificates evidencing the required coverage upon CKD's request for such certificates. CKD shall have no liability hereunder with respect to insurance costs, including, but not limited to insurance fees and compensation not covered by insurance.

Section 9. Term, Termination and Survival.

9.1 Term. This Agreement shall commence as of the Effective Date and, unless sooner terminated in accordance with the terms hereof or by mutual written consent, shall continue on a country-by-country and product-by-product basis until the end of the period during which royalties are due hereunder on Net Sales of such Licensed Product in such country. Upon the end of such period for such Licensed Product in such country, the license grant contained in Section 2.1 shall become perpetual, irrevocable and fully paid up with respect to such Licensed Product in such country.

9.2 Termination for Material Default. Either Party shall have the right to terminate this Agreement upon delivery of written notice to the other Party in the event of any default in the performance by such other Party of any of such other Party's material obligations under this Agreement, provided that such default has not been cured within ninety (90) days after written notice thereof is given by the non-defaulting Party to the defaulting Party specifying the nature of the alleged default, provided the Parties shall take all reasonable steps to resolve the matter pursuant to the process set forth in Section 10.6(a) during the applicable cure period and before any such termination becomes effective. Termination of this Agreement by CKD under this

Section 9.2 shall be on a country-by-country and product-by-product basis (and not for the Agreement as a whole) if the default giving rise to termination is reasonably specific to one or more countries or one or more products (*e.g.*, a royalty dispute for one product in one or more countries).

9.3 Termination for Convenience. Zafgen may terminate this Agreement in full for any reason effective upon sixty (60) days prior notice to CKD.

9.4 Termination for Insolvency. To the extent permitted by law, upon the filing or institution of bankruptcy, reorganization, liquidation or receivership proceedings, or upon an assignment of a substantial portion of the assets for the benefit of creditors (a " Bankruptcy Event") by either Party, CKD, in the case of a Bankruptcy Event by Zafgen, or Zafgen, in the case of a Bankruptcy Event by CKD, may terminate this Agreement; provided, however, that, in the case of any involuntary bankruptcy proceeding, such right to terminate shall only become effective if the subject Party consents to the involuntary bankruptcy or such proceeding is not dismissed within ninety (90) days after the filing thereof Each Party shall retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code and foreign equivalents, including that upon commencement of a bankruptcy proceeding by or against such Party undergoing a bankruptcy proceeding (the "Affected Party") under the U.S. Bankruptcy Code or foreign equivalents, the non-Affected Party shall be entitled to complete duplicates of or complete access to, as such non-Affected Party deems appropriate, any Technology and patent and other intellectual property rights and all embodiments hereof licensed or to be transferred to such non-Affected Party hereunder by the Affected Party. Such Technology, rights and embodiments shall be promptly delivered to the non-Affected Party (i) upon any such commencement of a bankruptcy proceeding and upon written request therefore by the non-Affected Party, unless the Affected Party elects to continue to perform all of its obligations under this Agreement, or (ii) if not delivered under the foregoing clause (i), upon the rejection of this Agreement by or on behalf of the Affected Party and upon written request therefore by the non-Affected Party. This Section 9.4 is without prejudice to any rights the non-Affected Party may have arising under the U.S. Bankruptcy Code, foreign equivalents or other law.

9.5 Effect of Certain Terminations. Upon termination of this Agreement by CKD pursuant to Section 9.2 or 9A or by Zafgen pursuant to Section 9.3, or with respect to each applicable product and country as to which termination occurs pursuant to Section 9.2 (the rights and obligations of the Parties as to the remaining products and countries in which termination under Section 9.2 has not occurred, being unaffected by such termination), all rights and licenses granted to Zafgen in Section 2 shall terminate with respect to each such terminated product and country, with all rights of Zafgen under CKD Patent Rights for each such terminated product and country reverting to CKD, and Section 2.2(b) shall apply to all Sublicensees in each such terminated country for each such terminated product. Further, upon any such termination and at CKD's reasonable request, on a country-by-country and product-by-product basis, Zafgen shall grant to CKD a license to use, and shall provide to CKD a copy of, all regulatory approvals, data, filings and correspondence (including DMFs) then in Zafgen's Control relating to such product and applicable to such country, but only for the continued development and commercialization of such product in such country, and provided that (i) all such information shall be treated as Confidential Information of Zafgen hereunder, (ii) such license and use shall be subject to any

rights of any Sublicensees that survive any such termination as contemplated by Section 2.2(b) and this Section 9 (including, if such Sublicensee is an exclusive sublicensee for such product in such country, then there shall not be any such license nor any provision of such information by Zafgen but such Sublicensee shall agree to be bound to CKD in place of Zafgen for purposes of this sentence), and (iii) if such termination occurs after Zafgen or any of its Affiliates or Sublicensees has filed for an NDA or its foreign equivalent or has obtained regulatory approval or has made a First Commercial Sale for such product in such country, then CKD shall pay to Zafgen commercially reasonable royalties in an amount to be agreed to by the Parties on sales of such product in such country to reflect the investment in and value contributed by Zafgen and its Affiliates and Sublicensees to the development and commercialization of such product.

9.6 Right to Sell-Off Inventory. Upon termination of this Agreement for any reason, should Zafgen or any of its Affiliates or Sublicensees have any inventory of any Licensed Product, each of them shall have six (6) months thereafter in which to dispose of such inventory (subject to the payment to CKD of any royalties due hereunder thereon).

9.7 Survival. In addition to the termination consequences set forth in Section 9.5, the following provisions shall survive expiration or termination of this Agreement for any reason, as well as any other provision which by its terms or by the context thereof, is intended to survive such termination: Sections 1, 2.2(b), 2.3, 5.4-5.6, 6.3 (but only with respect to any action or proceeding initiated before such expiration or termination), 6A, 7, 8.3, 8.4, 8.5, 8.6, 9 and 10. Expiration or termination of this Agreement for any reason shall not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration, nor preclude either Party from pursuing all rights and remedies it may have hereunder or at law or in equity, subject to Section 10.6, with respect to any breach of this Agreement nor prejudice either Party's right to obtain performance of any obligation.

Section 10. General Provisions.

10.1 Trademarks. CKD can use any trademark that is owned by Zafgen and associated with a Licensed Product, in the Limited Territory, provided that such use is restricted to and consistent with Zafgen's use of such trademark within the Territory. Zafgen shall have the right, in its sole discretion, to determine if CKD's use of a trademark in the Limited Territory meets the requirements of this Section 10.1.

10.2 Assignment. Except as expressly provided by Section 2.1, 2.2 or 8.5, neither Party may assign this Agreement, delegate its obligations or otherwise transfer licenses or other rights created by this Agreement, without the prior written consent of the other Party, which consent shall not be unreasonably withheld; provided that each Party may assign this Agreement as a whole without such consent to an Affiliate or in connection with the acquisition (whether by merger, consolidation, sale of assets, chance in control (by operation of law or otherwise) or otherwise) of such Party or of that part of such Party's business to which this Agreement relates, provided that such Party provides written notice to the other Party of such assignment and the assignee thereof agrees in writing to be bound as such Party hereunder. Any assignment or transfer in violation of this Section 10.2 shall be void. This Agreement shall inure to the benefit of, and be binding upon, the legal representatives, successors and permitted assigns of the Parties.

10.3 Force Majeure. Neither Party shall be held liable or responsible to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement if, but only to the extent that, such failure or delay results from causes beyond the reasonable control of the affected Party, potentially including fire, floods, embargoes, terrorism, war, acts of war (whether war be declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority; provided that the Party affected shall promptly notify the other of the force majeure condition and shall exert reasonable efforts to eliminate, cure or overcome any such causes and to resume performance of its obligations as soon as possible.

10.4 Severability. If any one or more of the provisions contained in this Agreement is held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby, unless the absence of the invalidated provision(s) adversely affects the substantive rights of the Parties. The Parties shall in such an instance use their reasonable best efforts to replace the invalid, illegal or unenforceable provision(s) with valid, legal and enforceable provision(s) which, insofar as practical, implement the purposes of this Agreement.

10.5 Amendment; Waiver. Except as set forth in Section 4.1(a) or elsewhere in this Agreement, this Agreement may not be modified or amended, in whole or part, except by a written instrument signed by the Parties; provided that any unilateral undertaking or waiver made by one Party in favor of the other shall be enforceable if undertaken in a writing signed by the Party to be charged with the undertaking or waiver. No delay or omission by either Party hereto in exercising any right or power occurring upon any noncompliance or default by the other Party with respect to any of the terms of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver by either of the Parties of any of the covenants, conditions or agreements to be performed by the other shall not be construed to be a waiver of any succeeding breach thereof or of any other covenant, condition or agreement herein contained.

10.6 Notices. Except as otherwise provided herein, all notices under this Agreement shall be sent by certified mail or by recognized international express, postage prepaid, to the following addresses of the respective Parties:

If to Zafgen, to:

Zafgen, Inc.
5 Cambridge Center, Floor 2
Cambridge, MA 02142
Attention: President

Confidential Treatment Requested

With a required copy to:	Goodwin Procter LLP 53 State Street Boston, MA 02109 Attention: Mitchell S. Bloom, Esq.
If to CKD, to:	Chong Kun Dang Pharmaceuticals 368, 3-ga, Chungjeong-ro, Seodaemun-gu, Seoul 120-756, Korea Attention: President

or to such address as each Party may hereafter designate by notice to the other Party. A notice shall be deemed to have been given on the date it is received by all required recipients for the noticed Party.

10.7 Dispute Resolution. Disputes arising under or in connection with this Agreement shall be resolved pursuant to this Section 10.7.

(a) In the event of a dispute between the Parties, the Parties shall first attempt in good faith to resolve such dispute by negotiation and consultation between themselves. In the event that such dispute is not resolved on an informal basis within […***…] days, any Party may, by written notice to the other, have such dispute referred to each of the Parties' respective CEOs or his or her designee (who shall be a senior executive), who shall attempt in good faith to resolve such dispute by negotiation and consultation for a […***…] day period following receipt of such written notice.

(b) In the event the Parties' CEOs (or designees) are not able to resolve such dispute, either Party may at any time after such […***…]-day period submit such dispute to be finally settled by arbitration administered in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("AAA") in effect at the time of submission. The arbitration shall be heard and determined by three (3) arbitrators. Zafgen and CKD shall each appoint one arbitrator and the third arbitrator shall be selected by the two Party-appointed arbitrators, or, failing agreement within […***…] days following the date of receipt by the respondent of the claim, by the AAA. Such arbitration shall take place in San Francisco, California. The arbitration award so given shall be a final and binding determination of the dispute, shall be fully enforceable in any court of competent jurisdiction, and shall not include any damages expressly prohibited by Section 8.4.

(c) Costs of arbitration are to be divided by the Parties in the following manner: Zafgen shall pay for the arbitrator it chooses, CKD shall pay for the arbitrator it chooses, and the costs of the third arbitrator shall be divided equally between the Parties. Except in a proceeding to enforce the results of the arbitration or as otherwise required by law, neither Party nor any arbitrator may disclose the existence, content or results of any arbitration hereunder without the prior written consent of both Parties.

(d) Notwithstanding anything in this Section 10 to the contrary, each Party shall have the right to seek injunctive or other equitable relief that may be necessary to avoid irreparable harm, maintain the status quo or preserve the subject matter of the arbitration. The Party seeking such equitable relief shall have the right to decide the appropriate jurisdiction and forum for such action. Each Party further agrees that service of any process, summons, notice or document by personal delivery, by registered mail, or by a recognized international express delivery service provider to such Party's respective address set forth above shall be effective service of process for any action, suit or proceeding in the applicable court with respect to matters to which it has submitted to jurisdiction in this Section 10. Each Party irrevocably and unconditionally waives any objection to the laying of venue of any action, suit or proceeding arising out of this Agreement or transactions contemplated hereby in the applicable court, and hereby and thereby further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such action, suit or proceeding brought in any such court had been brought in an inconvenient forum.

10.8 Applicable Law. This Agreement shall be governed by and construed in accordance with the laws of the Republic of Korea, without regard to its conflicts of law provisions.

10.9 Further Assurances. Each Party agrees to do and perform all such further acts and things and shall execute and deliver such other agreements, certificates, instruments and documents necessary or that the other Party may deem advisable in order to carry out the intent and accomplish the purposes of this Agreement and to evidence, perfect or otherwise confirm its rights hereunder.

10.10 Relationship of the Parties. Each Party is an independent contractor under this Agreement. Nothing contained herein is intended or is to be construed so as to constitute CKD and Zafgen as partners, agents or joint venturers. Neither Party shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement or undertaking with any Third Party. There are no express or implied third party beneficiaries hereunder (except for Zafgen Indemnitees other than Zafgen and CKD Indemnitees other than CKD for purposes of Section 8.6).

10.11 Entire Agreement. This Agreement (along with the Exhibits) contains the entire understanding of the Parties with respect to the subject matter hereof and supersedes and replaces any and all previous arrangements and understandings, including the Confidentiality Agreement, whether oral or written, between the Parties with respect to the subject matter hereof.

10.12 Headings. The captions to the several Sections hereof are not a part of this Agreement, but are merely guides or labels to assist in locating and reading the several Sections hereof.

10.13 Waiver of Rule of Construction. Each Party has had the opportunity to consult with counsel in connection with the review, drafting and negotiation of this Agreement. Accordingly, the rule of construction that any ambiguity in this Agreement shall be construed against the drafting party shall not apply.

10.14 Interpretation. Whenever any provision of this Agreement uses the term "including" (or "includes"), such term shall be deemed to mean "including without limitation" (or "includes without limitations"). "Herein," "hereby," "hereunder," "hereof and other equivalent words refer to this Agreement as an entirety and not solely to the particular portion of this Agreement in which any such word is used. All definitions set forth herein shall be deemed applicable whether the words defined are used herein in the singular or the plural. Unless otherwise provided, all references to Sections and Exhibits in this Agreement are to Sections and Exhibits of this Agreement. References to any Sections include Sections and subsections that are part of the related Section (*e.g.*, a Section numbered "Section 2.2" would be part of "Section 2", and references to "Section 2.2" would also refer to material contained in the subsection described as "Section 2.2(a)").

10.15 Counterparts: Facsimiles. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. Facsimile execution and delivery of this Agreement by either Party shall constitute a legal, valid and binding execution and delivery of this Agreement by such Party.

[Remainder of this Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Exclusive License Agreement to be executed by their respective duly authorized officers as of the Effective Date.

CHONG KUN DANG PHARMACEUTICAL CORPORATION

By: /s/ Jung Woo Kim
Jung Woo Kim
President

Date: 6 July, 2009

ZAFGEN, INC.

By: /s/ Thomas Hughes
Thomas Hughes
President & Chief Executive Officer

Date: 29 June 2009

Confidential Treatment Requested

EXHIBIT A

CKD KNOW-HOW TO BE TRANSFERRED TO ZAFGEN

None.

EXHIBIT B

CKD PATENT RIGHTS

No.	Status	Title	Licensor	Country	Application No. (Date)	Registration No. (Date)
1	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
2	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
3	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
4	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
5	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
6	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
7	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
8	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
9	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]

Confidential Treatment Requested

EXHIBIT C

Development Schedule of Zafgen*

Activity	Time
[…***…]	[…***…]
[…***…]	[…***…]
[…***…]	[…***…]
[…***…]	[…***…]

* Subject to amendment as set forth in the Agreement.

Amendment No. 1 to Exclusive License Agreement

This Amendment No. 1 to Exclusive License Agreement (the " Amendment"), dated September 30, 2009, is by and between Zafgen, Inc., a Delaware corporation ("Zafgen"), and Chong Kun Dang Pharmaceutical Corporation, a corporation organized under the laws of the Republic of Korea (" CKD"), and amends that certain Exclusive License Agreement, dated as of July 6, 2009, by and between Zafgen and CKD (the " Agreement"). Defined terms used but not otherwise defined herein, shall have the meanings ascribed to such terms in the Agreement.

The Parties hereby agree as follows:

1. The following shall be added as a new Section 2.5 to the Agreement:

   "2.5 Pharmacovigilance Agreement. The Parties shall enter into a Pharmacovigilance Agreement, in the form attached hereto as Exhibit D, to clarify their responsibilities with respect to notification and reporting of adverse events related to use of the Licensed Compound and Licensed Products."

2. The following shall be amended to the list of CKD Patent Rights contained on Exhibit B of the Agreement:

No.	Status	Title	Licensor	Country	Application No. (Date)	Registration No. (Date)
1	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
2	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
3	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
4	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
5	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
6	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
7	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
8	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
9	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]

3. The Pharmacovigilance Agreement attached hereto as Exhibit A, shall be added to the Agreement as Exhibit D.

4. This Amendment shall be governed and construed in accordance with the laws of the Republic of Korea, without regard to its conflicts of law provisions.

Confidential Treatment Requested

5. This Amendment may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6. Except to the extent amended hereby, the terms and provisions of the Agreement shall remain in full force and effect.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 1 to Exclusive License Agreement to be executed by their respective duly authorized officers as of the date first set forth above.

CHONG KUN DANG PHARMACEUTICAL CORPORATION

By: /s/ Jung Woo Kim
Jung Woo Kim
President

ZAFGEN, INC.

By: /s/ Matthias Jaffe
Matthias Jaffe
Chief Financial Officer

Confidential Treatment Requested

EXHIBIT A

Pharmacovigilance Agreement

Confidential Treatment Requested

Pharmacovigilance Agreement

This Pharmacovigilance Agreement (this "Agreement") is made as of September 30, 2009 (the "Effective Date") by and between Chong Kun Dang Pharmaceutical Corporation, a corporation organized under the laws of the Republic of Korea (" CKD") and Zafgen, Inc., a Delaware corporation ("Zafgen"). Zafgen and CKD each may be referred to herein as a " Party" and collectively as the "Parties."

WHEREAS, on July 6, 2009, Zafgen and CKD entered into that certain Exclusive License Agreement, as amended by Amendment No. 1 to the License Agreement, dated as of even date herewith (as the same may be amended from time to time, the " License Agreement"), pursuant to which CKD granted exclusive rights to the CKD Patent Rights to Zafgen, worldwide, with the exception of the Republic of Korea; and

WHEREAS, in accordance with Section 2.5 of the License Agreement, the parties have agreed to enter into this Agreement to clarify their responsibilities with respect to notification and reporting of adverse events.

NOW THEREFORE, the Parties hereby agree as follows:

1. Definitions. Unless otherwise defined herein or in the License Agreement, all capitalized terms used in this Agreement shall be consistent with the terms used in the finalized International Conference for Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (" ICH") guidelines relating to the collection, maintenance, analysis and reporting of adverse drug experiences, adverse events (" AE") and serious adverse events ("SAE").

   1.1 "Awareness Date" means the first date (according to the receiving Party's time zone) that either Party first receives reportable information on an AE, including an SAE, that is associated with the use of the Compound. For clarity, the Awareness Date shall be counted as day zero for safety data exchange purposes.

   1.2 "Compound" means the Licensed Compound or a Licensed Product, as applicable.

   1.3 "Non-Sponsor Party" means the other Party to this Agreement who is not acting as the Sponsor Party with respect to the safety reporting obligations hereunder.

   1.4 "Regulatory Authority" shall mean the applicable supra national, federal, national, regional, state, provincial or local regulatory agencies, departments, bureaus, commissions, councils or other government entities regulating or otherwise exercising authority with respect to the Compound.

   1.5 "Sponsor Party" shall mean a Party that is conducting a sponsored clinical trial with the Compound.

   1.6 "SUSAR" shall mean Suspected Unexpected Serious Adverse Reaction.

2. Reporting Obligations of the Parties to Each Other. In order to allow the Parties to fulfill their safety reporting obligations to the applicable Regulatory Authorities, the Parties shall exchange information on SAEs, AEs and other adverse drug experiences, in accordance with the following schedule:

2.1 Reporting of SAEs and Deaths. A Sponsor Party shall report any SAEs or AEs that have resulted in death, have been life-threatening and that have occurred during the course of such Sponsor Party's clinical trial to the Non-Sponsor Party within twenty-four (24) hours of the Awareness Date. The report should include: (i) identifiable patients, (ii) suspect medication products, (iii) identifiable reporting source and (iv) events or outcomes identified as SUSAR if applicable. The Sponsor Party shall assess and process the SAE information and will forward completed SAE reports to the Non-Sponsor Party within seven (7) calendar days after the Awareness Date. SAE reports shall be in English. CKD shall report to Zafgen in accordance with a Council for International Organizations of Medical Sciences (" CIOMS") I report format, as set forth in Exhibit A attached hereto. Zafgen shall report to CKD in accordance with CKD's format, as set forth in Exhibit B attached hereto. The reports covered by this Section shall be delivered by e-mail or facsimile.

2.2 Reporting of AEs. Sponsor Party shall report any AEs, that do not qualify as SAEs, that have occurred during the course of Sponsor Party's clinical trial to the Non-Sponsor Party after completion of Sponsor Party's clinical trial. The AE reports shall be in English and shall be include at least: (i) adverse event term, (ii) CTC grade (if available), (iii) starting date, (iv)end date, (v) seriousness and (vi) causality between a medicinal product and event. The reports covered by this Section shall be delivered by a method agreed upon by the Parties.

2.3 Reporting of Other Safety Information. A Party shall report to the other Party (a) any spontaneous reports of AEs related to the use of the Compound that are not from a Sponsor Party's clinical trial with the Compound, including reports from literature sources and (b) any other clinical or pre-clinical safety related information, including without limitation, pre-clinical findings that suggest a significant risk for human subjects, identification of a significant hazard to the patient population receiving the Compound, or signals for potential new adverse drug reactions, every six (6) months during the Term of this Agreement, or at such earlier time period as is reasonably requested by the other Party. Reports shall be in English.

2.4 Follow-up Investigations. AE information identified from follow-up investigations shall be exchanged in accordance with the timelines and formats set forth in Sections 2.1 through 2.3 above. The Party who receives the initial report shall be responsible for conducting follow-up investigations with the reporter of the AE. Each party should report the follow-up investigation results to the other party periodically until the clinical responses are completed (disappearance of the AE or impossibility of follow-up investigation).

3. Reporting Obligations to Regulatory Authorities .

3.1 Zafgen shall fulfill the expedited and periodic safety reporting obligations of the applicable Regulatory Authorities for the Compound in the countries in the Territory where Zafgen holds a marketing authorization or a clinical trial application for the Compound.

3.2 CKD shall fulfill the expedited and periodic safety reporting obligations of the applicable Regulatory Authorities for the Compound in the countries in the Limited Territory where CKD holds a marketing authorization or a clinical trial application for the Compound.

3.3 Each Party shall, upon the other Party's reasonable request, provide information to help the other Party compile periodic reports and respond to the safety inquiries of the applicable Regulatory Authorities, within the applicable regulatory time frames. Furthermore, each Party will provide the other Party with copies of safety reports submitted to the applicable Regulatory Authorities within five (5) business days after such reports have been submitted.

4. Additional Reporting Requirements . Any other safety reporting obligations of the Parties, including clinical investigator notifications, shall be prepared by the Parties according to their respective standard operating procedures and exchange copies for information/distribution according to their respective standard operating procedures, as appropriate.

5. Term. This Agreement shall commence on the Effective Date and shall continue to be in effect until the Parties execute a writing that states that neither Party has a legitimate interest in continuing to receive the information, reports, and notifications provided for herein in order to comply with applicable regulatory requirements related to the use of the Compound.

6. Confidentiality . All information exchanged by the Parties in accordance with this Agreement shall be considered Confidential Information and is subject to the obligations and restrictions regarding Confidential Information set forth in Section 7 of the License Agreement.

7. Dispute resolution . Any disputes that arise under this Agreement shall be resolved in accordance with Section 10.7 of the License Agreement.

8. License Agreement . Unless otherwise stated herein, in the event of a conflict between this Agreement and the License Agreement, the License Agreement shall control.

9. Miscellaneous .

9.1 Amendment; Waiver. This Agreement may not be modified or amended, in whole or part, except by a written instrument signed by the Parties; provided that any unilateral undertaking or waiver made by one Party in favor of the other shall be enforceable if undertaken in a writing signed by the Party to be charged with

the undertaking or waiver. No delay or omission by either Party hereto in exercising any right or power occurring upon any noncompliance or default by the other Party with respect to any of the terms of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver by either of the Parties of any of the covenants, conditions or agreements to be performed by the other shall not be construed to be a waiver of any succeeding breach thereof or of any other covenant, condition or agreement herein contained.

9.2 Applicable Law. This Agreement shall be governed by and construed in accordance with the laws of the Republic of Korea, without regard to its conflicts of law provisions.

9.3 Further Assurances. Each Party agrees to do and perform all such further acts and things and shall execute and deliver such other agreements, certificates, instruments and documents necessary or that the other Party may deem advisable in order to carry out the intent and accomplish the purposes of this Agreement and to evidence, perfect or otherwise confirm its rights hereunder.

9.4 Entire Agreement. This Agreement contains the entire understanding of the Parties with respect to the subject matter hereof and supersedes and replaces any and all previous arrangements and understandings, whether oral or written, between the Parties with respect to the subject matter hereof.

9.5 Counterparts; Facsimiles. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. Facsimile execution and delivery of this Agreement by either Party shall constitute a legal, valid and binding execution and delivery of this Agreement by such Party.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Pharmacovigilance Agreement to be executed by their respective duly authorized officers as of the Effective Date.

CHONG KUN DANG PHARMACEUTICAL CORPORATION

By: /s/ Jung Woo Kim
Jung Woo Kim
President

ZAFGEN, INC.

By: /s/ Matthias Jaffe
Matthias Jaffe
Chief Financial Officer

Confidential Treatment Requested

EXHIBIT A

CIOMS I Form

CIOMS FORM

SUSPECT ADVERSE REACTION REPORT	

I. REACTION INFORMATION

1. PATIENT INITIALS (first, last)	1a. COUNTRY	2. DATE OF BIRTH Day	Month	Year	2a. AGE Years	3. SEX	4-6 REACTION ONSET Day	Month	Year	8-12 CHECK ALL APPROPRIATE TO ADVERSE REACTION
7 + 13 DESCRIBE REACTION(S) (including relevant tests/lab data)										☐ PATIENT DIED ☐ INVOLVED OR PROLONGED INPATIENT HOSPITALISATION ☐ INVOLVED PERSISTENCE OR SIGNIFICANT DISABILITY OR INCAPACITY ☐ LIFE THREATENING

II. SUSPECT DRUG(S) INFORMATION

14. SUSPECT DRUG(S) (include generic name)		20 DID REACTION ABATE AFTER STOPPING DRUG? ☐ YES ☐ NO ☐ NA
15. DAILY DOSE(S)	16. ROUTE(S) OF ADMINISTRATION	21. DID REACTION REAPPEAR AFTER REINTRODUCTION? ☐ YES ☐ NO ☐ NA
17. INDICATION(S) FOR USE		
18. THERAPY DATES (from/to)	19. THERAPY DURATION	

III. CONCOMITANT DRUG(S) AND HISTORY

22. CONCOMITANT DRUG(S) AND DATES OF ADMINISTRATION (exclude those used to treat reaction)
23. OTHER RELEVANT HISTORY (e.g. diagnostics, allergics, pregnancy with last month of period, etc.)

IV. MANUFACTURER INFORMATION

24a. NAME AND ADDRESS OF MANUFACTURER		
	24b. MFR CONTROL NO.	
24c. DATE RECEIVED BY MANUFACTURER	24d. REPORT SOURCE ☐ STUDY ☐ LITERATURE ☐ HEALTH PROFESSIONAL	
DATE OF THIS REPORT	25a. REPORT TYPE ☐ INITIAL ☐ FOLLOWUP	

EXHIBIT B

SAE Report	Report type	□ Initial □ Follow-up(__times)

Investigational Product		Protocol No.	
Study Title			
Country, Site Name		Principal Investigator	

Patient							
Allocation Number*	Initials	Sex	Date of birth (YY.MM.DD)	Age	Height	Body Weight	Medical treatment
		□ M □ W	. .		cm	kg	□ Inpatient □ Outpatient □ Others ___
Pregnancy(Period: ___weeks) Last menstruation date (/ /) □ Not applicable							

*Allocation Number means Randomization Number

SAE						
Name of SAE	Date①		Relationship to suspected drug②	Action taken with suspected drug ③	Final outcome④	Seriousness criteria⑤
	Start	End				
	. .	. .				
	. .	. .				

① If necessary, please write down the duration and time from administration of suspected drug to reaction
② 1. Definitely related 2. Probably related 3. Possibly related 4. Probably not related 5. Definitely not related 6. Unknown
③ 1. Drug withdrawn 2. Dose reduced 3. Dose increased 4. Dose not changed 5. Unknown 6. Not Applicable
④ 1. Recovered/Resolved 2. Under recovering/Under resolving 3. Not recovered/Not resolved 4. Recovered with sequelae / Resolved with sequelae 5. Death 6. Unknown
⑤ 1. Death 2. Life-threatening 3. Requiring inpatient hospitalization or prolongation of existing hospitalization 4. Persistent or significant disability/incapacity 5. Congenital abnormality /birth defect 6. Other medically important condition

Death	□ Yes □ No	Date of death	. .
Reported Cause of death		Autopsy	□ Yes □ No □ Unknown

Drug information								
Suspect drug (Brand/INN/Batch No.)	Formulation/ Unit	Daily dose/ Usage	Route of administration	Administration duration		Indication	Result of withdrawal / dose reduction①	Result of re-administration②
				From	To			
Other concomitant medication								

① 1 : AE disappeared /improved 2 : Not disappeared/Not improved 3 : Not stop/Not reduce dose
② 1 : AE recurrence/worsened 2 : Not recurrence/Not worsened 3 : Not re-administration

Medical history and disease			□ Yes □ No □ Unknown	
Disease/Surgery /Others	Start date	Continuation (Yes/No/Unknown)	End date	Note
	. .		. .	
	. .		. .	

Medical history related with SAE			□ Yes □ No □ Unknown	
Name of drug (as reported)	Start date of administration	End date of administration	Indication	SAE
	. .	. .		
	. .	. .		

Follow-up test to find out causes					□ Operated □ Not operated	
Date	Test (name)	Unit	Lower limit of normal	Upper limit of normal	Result	Additional information (Yes/No)

SAE detail description			
Name of SAE		Duration	. . ~ . . □ Persisted

Description in detail :

Additional information :

Reporter's opinion :

Reporter information					
Name		Position		Profession (specialty)	
Name of institute		Tel		Fax	
Address			e-mail		

Investigator Check (Name / Signature / Date): / /

Amendment No. 2 to Exclusive License Agreement

This Amendment No. 1 to Exclusive License Agreement (the " Amendment"), dated October 7, 2010, is by and between Zafgen, Inc., a Delaware corporation ("Zafgen"), and Chong Kun Dang Pharmaceutical Corporation, a corporation organized under the laws of the Republic of Korea (" CKD"), and amends that certain Exclusive License Agreement, dated as of July 6, 2009, by and between Zafgen and CKD (the " Agreement"). Defined terms used but not otherwise defined herein, shall have the meanings ascribed to such terms in the Agreement.

The Parties hereby agree as follows:

1. The following shall be amended to the list of CKD Patent Rights contained on Exhibit B of the Agreement:

No.	Status	Title	Licensor	Country	Application No. (Date)	Registration No. (Date)
1	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
2	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
3	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
4	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
5	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
6	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
7	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
8	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
9	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
10	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
11	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]	[…***…]

2. This Amendment shall be governed and construed in accordance with the laws of the Republic of Korea, without regard to its conflicts of law provisions.

3. This Amendment may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

4. Except to the extent amended hereby, the terms and provisions of the Agreement shall remain in full force and effect.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 2 to Exclusive License Agreement to be executed by their respective duly authorized officers as of the date first set forth above.

CHONG KUN DANG PHARMACEUTICAL CORPORATION

By: /s/ Jung Woo Kim
Jung Woo Kim
President

ZAFGEN, INC.

By: /s/ Matthias Jaffe
Matthias Jaffe
Chief Financial Officer

Confidential Treatment Requested

Amendment No. 3 to Exclusive License Agreement

This Amendment No. 3 to Exclusive License Agreement (the " Amendment"), dated February 28, 2011, is by and between Zafgen, Inc., a Delaware corporation; ("Zafgen") and Chong Kun Dang Pharmaceutical Corporation, a corporation organized under the laws of the Republic of Korea (" CKD"), and amends that certain Exclusive License Agreement, dated as of July 6, 2009, by and between Zafgen and CKD (the " Agreement"). Defined terms used but not otherwise defined herein, shall have the meanings ascribed to such terms in the Agreement.

The Parties hereby agree as follows:

1. The following shall be added as a new Section 5.3 of the Agreement and restated to read in its entirety as follows:

   "Each Milestone Payment shall be payable by Zafgen to CKD within […***…] days after the achievement of the corresponding Milestone Event with respect to the first Licensed Product; provided, however, that the Milestone Payment associated with the first Milestone Event, '[…***…]' shall be paid upon the sooner to occur of (i) […***…] after […***…] and (ii) […***…], as opposed to […***…] days after achievement of such Milestone Event."

2. This Amendment shall be governed and construed in accordance with the laws of the Republic of Korea, without regard to its conflicts of law provisions.

3. This Amendment may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

4. Except to the extent amended hereby, the terms and provisions of the Agreement shall remain in full force and effect

[Remainder of Page Intentionally Left Blank]

Confidential Treatment Requested

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 3 to Exclusive License Agreement to be executed by their respective duly authorized officers as of the date first set forth above.

CHONG KUN DANG PHARMACEUTICAL CORPORATION

By: /s/ Jung Woo Kim
Jung Woo Kim
President

ZAFGEN, INC.

By: /s/ Matthias Jaffe
Matthias Jaffe
Chief Financial Officer

Confidential Treatment Requested

EXHIBIT 10.4

ONE BROADWAY
CAMBRIDGE. MASSACHUSETTS

LEASE SUMMARY SHEET

Execution Date: As of July 8, 2011

Tenant: Zafgen, Inc., a Delaware corporation

Tenant's Mailing Address Prior to Occupancy: 1 Cambridge Center, Suite 702, Cambridge, Massachusetts 02142

Landlord: MIT One Broadway LLC, a Massachusetts limited liability company

Building: One Broadway, Cambridge, Massachusetts. The Building consists of approximately 312,704 rentable square feet. The land on which the Building is located is more particularly described in Exhibit 2 attached hereto and made a part hereof.

Premises: Approximately 3,097 rentable square feet of space on the eighth (8 th) floor of the Building, as more particularly shown as hatched, highlighted or outlined on the plan attached hereto as Exhibit 1 and made a part hereof (the **"Lease Plan"**).

Term Commencement Date: The date that Landlord's Work is Substantially Complete (as defined in Section 3.2).

Target Delivery Date: July 28, 2011

Expiration Date: Two (2) years after the Term Commencement Date

Extension Term(s): Subject to Section 1.2 below, one (1) extension term of two (2) years

Landlord's Contribution: None

Permitted Uses: General office use

Base Rent:

Lease Year*	Annual Base Rent	Monthly Payment	PSF
1	$ 126,977.00	$ 10,581.42	$41.00
2	$ 130,074.00	$ 10,839.50	$42.00

* For the purposes of this Lease, the first "Lease Year" shall be defined as the twelve-(12)-month period commencing as of the Term Commencement Date and ending on the last day of the month in which the first (1st) anniversary of the Term Commencement Date occurs; provided, however, that if the Term Commencement Date occurs on the first of a calendar month, then the first Lease Year shall expire on the day immediately preceding the fist (1 st) anniversary of the Term Commencement Date. Thereafter, "Lease Year" shall be defined as any subsequent twelve (12) month period during the term of this Lease.

Operating Costs and Taxes:	See Sections 5.2 and 5.3
Tenant's Building Share:	A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the Building. As of the Execution Date, Tenant's Building Share is .99%.
Tenant's Property Share:	A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the buildings (including the Building) located on the Property (hereinafter defined). As of the Execution Date, Tenant's Property Share is .99%.
Operating Costs Base Year:	Fiscal Year 2012 (i.e., July 1, 2011 – June 30, 2012)
Tax Base Year:	Fiscal Year 2012 (i.e., July 1, 2011 – June 30, 2012)
Security Deposit:	$31,744.26

EXHIBIT 1	LEASE PLAN
EXHIBIT 2	LEGAL DESCRIPTION
EXHIBIT 3	PLAN OF LANDLORD'S WORK
EXHIBIT 4	INTENTIONALLY OMITTED
EXHIBIT 5	ALTERATIONS CHECKLIST
EXHIBIT 6	LANDLORD'S SERVICES
EXHIBIT 7	RULES AND REGULATIONS

TABLE OF CONTENTS

THIS INDENTURE OF LEASE (this **"Lease")** is hereby made and entered into on the Execution Date by and between Landlord and Tenant.

This Lease and all of its terms, covenants, representations, warranties, agreements and conditions are in all respects subject and subordinate to that certain Master Lease Agreement dated as of December 1, 2008 by and between MIT One Broadway Fee Owner LLC, as landlord, and Landlord, as tenant (as it may be amended from time to time, the **"Master Lease"),** a redacted copy of which has been delivered to Tenant. Tenant acknowledges notice and full knowledge of all of the terms, covenants and conditions of the Master Lease.

Each reference in this Lease to any of the terms and titles contained in any Exhibit attached to this Lease shall be deemed and construed to incorporate the data stated under that term or title in such Exhibit. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Lease Summary Sheet which is attached hereto and incorporated herein by reference.

1. LEASE GRANT; TERM; APPURTENANT RIGHTS; EXCLUSIONS

1.1 Lease Grant. Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises upon and subject to terms and conditions of this Lease, for a term of years commencing on the Term Commencement Date and, unless earlier terminated or extended pursuant to the terms hereof, ending on the Expiration Date (the **"Initial Term"**; the Initial Term and any duly exercised Extension Terms are hereinafter collectively referred to as the **"Term").**

1.2 Extension Term.

(a) Provided (i) Tenant, an Affiliate (hereinafter defined) is/are then occupying one hundred percent (100%) of the Premises; and (ii) no Event of Default nor an event which, with the passage of time and/or the giving of notice would constitute an Event of Default has occurred (1) as of the date of the Extension Notice (hereinafter defined), and (2) at the commencement of the applicable Extension Term (hereinafter defined), Tenant shall have the option to extend the Term for one (1) additional term of two (2) years (the **"Extension Term"),** commencing as of the expiration of the Initial Term. Tenant must exercise such option to extend by giving Landlord written notice (the **"Extension Notice")** on or before the date that is nine (9) months prior to the expiration of the then-current term of this Lease, time being of the essence. Upon the timely giving of such notice, the Term shall be deemed extended upon all of the terms and conditions of this Lease, except that Base Rent during the Extension Term shall be calculated in accordance with this Section 1.2, Landlord shall have no obligation to construct or renovate the Premises and Tenant shall have no further right to extend the Term. If Tenant fails to give timely notice, as aforesaid, Tenant shall have no further right to extend the Term. Notwithstanding the fact that Tenant's proper and timely exercise of such option to extend the Term shall be self executing, the parties shall promptly execute a lease amendment reflecting such Extension Term after Tenant exercises such option. The execution of such lease amendment shall not be deemed to waive any of the conditions to Tenant's exercise of its rights under this Section 1.2.

(b) The Base Rent during the Extension Term (the **"Extension Term Base Rent")** shall be determined in accordance with the process described hereafter. Extension Term Base Rent shall be the greater of (i) Base Rent for the last Rent Year of the prior term, or (ii) the fair market rental value of the Premises then demised to Tenant as of the commencement of the Extension Term as determined in accordance with the process described below, for renewals of office space in the East Cambridge/ Kendall Square area of equivalent quality, size, utility and location, with the length of the Extension Term and the credit standing of Tenant to be taken into account. Within thirty (30) days after receipt of the Extension Notice, Landlord shall deliver to Tenant written notice of its determination of the Extension Term Base Rent for the Extension Term. Tenant shall, within thirty (30) days after receipt of such notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Extension Term Base Rent **("Tenant's Response Notice").** If Tenant fails timely to deliver Tenant's Response Notice, Landlord's determination of the Extension Term Base Rent shall be binding on Tenant.

(c) If and only if Tenant's Response Notice is timely delivered to Landlord and indicates both that Tenant rejects Landlord's determination of the Extension Term Base Rent and desires to submit the matter to arbitration, then the Extension Term Base Rent shall be determined in accordance with the procedure set forth in this Section 1.2(c). In such event, within ten (10) days after receipt by Landlord of Tenant's Response Notice indicating Tenant's desire to submit the determination of the Extension Term Base Rent to arbitration, Tenant and Landlord shall each notify the other, in writing, of their respective selections of an appraiser (respectively, **"Landlord's Appraiser"** and **"Tenant's Appraiser").** Landlord's Appraiser and Tenant's Appraiser shall then jointly select a third appraiser (the **"Third Appraiser")** within ten (10) days of their appointment. All of the appraisers selected shall be individuals with at least five (5) consecutive years' commercial appraisal experience in the area in which the Premises are located, shall be members of the Appraisal Institute (M.A.I.), and, in the case of the Third Appraiser, shall not have acted in any capacity for either Landlord or Tenant within five (5) years of his or her selection. The three appraisers shall determine the Extension Term Base Rent in accordance with the requirements and criteria set forth in Section 1.2(b) above, employing the method commonly known as *Baseball Arbitration*, whereby Landlord's Appraiser and Tenant's Appraiser each sets forth its determination of the Extension Term Base Rent as defined above, and the Third Appraiser must select one or the other (it being understood that the Third Appraiser shall be expressly prohibited from selecting a compromise figure). Landlord's Appraiser and Tenant's Appraiser shall deliver their determinations of the Extension Term Base Rent to the Third Appraiser within five (5) days of the appointment of the Third Appraiser and the Third Appraiser shall render his or her decision within ten (10) days after receipt of both of the other two determinations of the Extension Term Base Rent. The Third Appraiser's decision shall be binding on both Landlord and Tenant. Each party shall bear the cost of its own appraiser and shall share equally in the cost of the Third Appraiser.

1.3 No Recording. Tenant shall not record this Lease or any portion hereof, a memorandum of this Lease and/or a notice of this Lease.

1.4 Appurtenant Rights.

(a) Common Areas. Subject to the terms of this Lease and the Rules and Regulations (hereinafter defined), Tenant shall have, as appurtenant to the Premises, rights to use in common with others entitled thereto, the following areas (such areas are hereinafter referred to as the **"Common Areas")**: (i) the common lobbies, loading docks, hallways and stairways of the Building serving the Premises, (ii) common walkways necessary for access to the Building, (iii) if the Premises include less than the entire rentable area of any floor, the common toilets and other common facilities of such floor; and (iv) other areas designated by Landlord from time to time for the common use of tenants of the Building; and no other appurtenant rights or easements.

(b) Parking. During the Term, commencing on the Term Commencement Date, Landlord shall, subject to the terms hereof, make available three (3) parking spaces for Tenant's use in the parking garage/parking areas serving the Building. The number of parking spaces in the parking garage/areas allocated to Tenant, as modified pursuant to this Lease or as otherwise permitted by Landlord, are hereinafter referred to as the **"Parking Spaces."** Tenant shall have no right to hypothecate or encumber the Parking Spaces, and shall not sublet, assign, or otherwise transfer the Parking Spaces other than to employees of Tenant occupying the Premises or to an Affiliate or a transferee pursuant to an approved Transfer under Section 13 of this Lease. Throughout the Term, Tenant shall pay Landlord (or at Landlord's election, directly to the parking operator) for all of the Parking Spaces at the then-current prevailing rate, as such rate may vary from time to time. As of the Execution Date, the monthly charge for parking is Two Hundred Twenty-Five Dollars ($225.00) per Parking Space per month. If, for any reason, Tenant shall fail timely to pay the charge for any of said Parking Spaces, and if such default continues for ten (10) days after written notice thereof, Tenant shall have no further right to the Parking Spaces for which Tenant failed to pay the charge under this Section 1.4(b) and Landlord may allocate such Parking Spaces for use by others free and clear of Tenant's rights under this Section 1.4(b). Said Parking Spaces will be on an unassigned, non-reserved basis, and shall be subject to such reasonable rules and regulations as may be in effect for the use of the parking garage/areas from time to time (including, without limitation, Landlord's right, without additional charge to Tenant above the prevailing rate for Parking Spaces, to institute a valet or attendant-managed parking system). Notwithstanding anything to the contrary contained herein, in connection with the exercise of Landlord's rights pursuant to Section 2.2 below, or in connection with the development or redevelopment of other property owned or controlled by Landlord, Landlord shall have the right to relocate the Parking Spaces from time to time (provided, however, that any such relocation(s) shall not exceed two (2) years in the aggregate) to other property owned or controlled by Landlord or its affiliates, so long as such other property is within 500 feet of the Land. Landlord hereby agrees that the number of Parking Spaces relocated pursuant to the previous sentence shall not exceed Tenant's Parking Share of the total number of parking spaces relocated (for purposes of this Section 1.4(b), **"Tenant's Parking Share"** shall mean a fraction, the numerator of which is the number of Parking Spaces allocated to Tenant pursuant to this Section 1.4(b) and the denominator of which is the total number of parking spaces in the garage/surface lots serving the Building on the Execution Date). Subject to Landlord's determination, in its sole discretion, that additional spaces are available for use on a month-to-month basis, Tenant shall have the right, upon at least thirty (30) days' prior written notice, to use additional parking spaces on a revocable month-to-month basis on the terms and conditions of this Section 1.4(b).

1.5 Tenant's Access. From and after the Term Commencement Date and until the end of the Term, Tenant shall have access to the Premises twenty-four (24) hours a day, seven (7) days a week, subject to Legal Requirements, the Rules and Regulations, the terms of this Lease and matters of record.

1.6 Exclusions. The following are expressly excluded from the Premises and reserved to Landlord: all the perimeter walls of the Premises (except the inner surfaces thereof), the Common Areas, and any space in or adjacent to the Premises used for shafts, stacks, pipes, conduits, wires and appurtenant fixtures, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, and the use of all of the foregoing, except as expressly permitted pursuant to Section 1.4(a) above.

2. RIGHTS RESERVED TO LANDLORD

2.1 Additions and Alterations. Landlord reserves the right, at any time and from time to time, to make such changes, alterations, additions, improvements, repairs or replacements in or to the Building and the parking areas serving the Building (including the Premises but, with respect to the Premises, only for purposes of repairs, maintenance, replacements and other rights expressly reserved to Landlord herein) and the fixtures and equipment therein, as well as in or to the street entrances and/or the Common Areas, as it may deem necessary or desirable, provided, however, that there be no material obstruction of access to, or material interference with the use and enjoyment of, the Premises by Tenant. Subject to the foregoing, Landlord expressly reserves the right to temporarily close all, or any portion, of the Common Areas for the purpose of making repairs or changes thereto.

2.2 Additions to the Property. Landlord may at any time or from time to time construct additional improvements in all or any part of the Property (hereinafter defined), including, without limitation, adding additional buildings or changing the location or arrangement of any improvement in or on the Property or all or any part of the common areas thereof, or add or deduct any land to or from the Property; provided that there shall be no material increase in Tenant's obligations or material interference with Tenant's rights under this Lease in connection with the exercise of the foregoing reserved rights.

2.3 Name and Address of Building. Landlord reserves the right at any time and from time to time to change the name or address of the Building and/or the Property, provided Landlord gives Tenant at least three (3) months' prior written notice thereof.

2.4 Landlord's Access. Subject to the terms hereof, Tenant shall (a) upon as much advance notice as is practical under the circumstances, and in any event at least twenty-four (24) hours' prior written notice (except that no notice shall be required in emergency situations), permit Landlord and any holder of a Mortgage (hereinafter defined) (each such holder, a **"Mortgagee")**, and their agents, employees and contractors, to have free and unrestricted access to and to enter upon the Premises at all reasonable hours for the purposes of inspection, making repairs, replacements or improvements in or to the Premises or the Building or equipment therein (including, without limitation, sanitary, electrical, heating, air conditioning or other systems), complying with all applicable laws, ordinances, rules, regulations, statutes, by-laws, court decisions and orders and requirements of all public authorities (collectively, **"Legal Requirements")**, or exercising any right reserved to Landlord under this Lease (including without limitation the right to take upon or through, or to keep and store within the Premises all

necessary materials, tools and equipment); and (b) permit Landlord and its agents and employees, at reasonable times, upon reasonable advance notice, to show the Premises during normal business hours (i.e. Monday - Friday 8 A.M. - 8 P.M., Saturday 8 A.M. - 3 P.M., excluding holidays) to any prospective Mortgagee or purchaser of the Building and/or the Property or of the interest of Landlord therein, and, during the last twelve (12) months of the Term, prospective tenants. The parties agree and acknowledge that, despite reasonable and customary precautions (which Landlord agrees it shall exercise), any property or equipment in the Premises of a delicate, fragile or vulnerable nature may nevertheless be damaged in the course of cleaning and maintenance services being performed. Accordingly, Tenant shall take reasonable protective precautions with unusually fragile, vulnerable or sensitive property and equipment.

2.5 Pipes, Ducts and Conduits. Tenant shall permit Landlord to erect, use, maintain and relocate pipes, ducts and conduits in and through the Premises, provided the same do not materially reduce the floor area or materially adversely affect the appearance thereof.

2.6 Minimize Interference. Except in the event of an emergency, Landlord shall use commercially reasonable efforts to minimize any interference with Tenant's business operations and use and occupancy of the Premises in connection with the exercise any of the foregoing rights under this Section 2.

3. CONDITION OF PREMISES; CONSTRUCTION.

3.1 Condition of Premises. Subject to Landlord's obligation to perform Landlord's Work (hereinafter defined), Tenant acknowledges and agrees that Tenant is leasing the Premises in their "AS IS," "WHERE IS" condition and with all faults on the Term Commencement Date, without representations or warranties, express or implied, in fact or by law, of any kind, and without recourse to Landlord.

3.2 Landlord's Work. Subject to delays due to governmental regulation, unusual scarcity of or inability to obtain labor or materials, labor difficulties, casualty or other causes reasonably beyond Landlord's control (collectively "Landlord's Force Majeure") and subject to any act or omission by Tenant and/or Tenant's agents, servants, employees, consultants, contractors, subcontractors, licensees and/or subtenants (collectively with Tenant, the "Tenant Parties") which causes an actual delay in the performance of Landlord's Work (a "Tenant Delay"), Landlord, at Landlord's sole cost and expense, shall use reasonable speed and diligence in the construction of the work ("Landlord's Work") more particularly described in Exhibit 3 attached hereto so as to have Landlord's Work Substantially Complete on or before the Target Delivery Date. Landlord's Work shall include, without limitation, the following: (i) demolition of the existing partition to combine two (2) existing offices into one (1) new conference room, (ii) relocation of existing light fixtures to accommodate the new conference room/office layout, and (iii) relocation of existing HVAC diffusers to accommodate the new conference room/office layout. For purposes hereof, Landlord's Work shall be deemed "Substantially Complete" when Landlord's Work is entirely completed, except for minor punch list items, the completion of which shall not materially interfere with Tenant's use of the Premises. Tenant shall pay for any costs of Landlord's Work attributable to changes orders requested by Tenant. Tenant shall reimburse Landlord for such excess costs, if any, as Additional Rent, within thirty (30) days after

demand therefor. In addition, Landlord shall, at Landlord's cost, prior to the Term Commencement Date, recarpet the Premises and touch up the paint in the Premises, where necessary, using Building standard materials and colors selected by Tenant. Landlord shall use reasonable speed and diligence to have the Premises ready for Tenant's occupancy on or before the Target Delivery Date. The failure to have the Premises Substantially Complete on or before the Target Delivery Date shall in no way affect the validity of the Lease or the obligations of Tenant hereunder nor shall the same be construed in any way to extend the Term of the Lease. If Landlord's Work is not Substantially Complete on or before the Target Delivery Date, Tenant shall not have any claim against Landlord, and Landlord shall have no liability to Tenant, by reason thereof. Notwithstanding the foregoing, in the event that Landlord's Work is not Substantially Complete by the Target Delivery Date, and Tenant notifies Landlord that it desires to take occupancy of the Premises prior to such completion, then Landlord and Tenant shall cooperate with one another to the extent practicable to permit Tenant to take occupancy of the Premises on the Target Delivery Date and to coordinate the Substantial Completion of Landlord's Work while Tenant is in occupancy of the Premises.

3.3 Punchlist Items. Promptly following delivery of the Premises to Tenant with Landlord's Work Substantially Complete, Landlord and Tenant shall inspect the Premises and mutually prepare a list (the "Punchlist") of outstanding items which need to be performed to complete Landlord's Work (the "Punchlist Items"). Subject to Landlord's Force Majeure and Tenant Delays, Landlord shall, unless otherwise specified on the Punchlist, complete all Punchlist Items within sixty (60) days of the date of the Punchlist.

3.4 Tenant's Work. For purposes hereof, **"Tenant's Work"** shall mean the work necessary to prepare the Premises for Tenant's occupancy and business operations, including without limitation, the installation of all furniture, wiring, cabling and fixtures. Tenant's Work shall be performed at Tenant's sole cost and expense, and shall be performed in accordance with the provisions of this Lease (including, without limitation, Section 10). Tenant shall be responsible for obtaining a certificate of occupancy for the Premises when Tenant's Work has been completed, to the extent Tenant's Work requires a new certificate of occupancy. Landlord and Tenant acknowledge and agree that Tenant's Work and Landlord's Work may be performed concurrently. Tenant shall take necessary reasonable measures to ensure that Tenant's contractors cooperate in all commercially reasonable ways with Landlord's contractors to avoid any delay in either Landlord's Work or Tenant's Work or any conflict with the performance of either Landlord's Work or Tenant's Work, Tenant acknowledging, however, that in the case of conflict, the performance of Landlord's Work shall have priority.

4. USE OF PREMISES

4.1 Permitted Uses. During the Term, Tenant shall use the Premises only for the Permitted Uses and for no other purposes. Service and utility areas (whether or not a part of the Premises) shall be used only for the particular purpose for which they are designed.

4.2 Prohibited Uses.

(a) Notwithstanding any other provision of this Lease, Tenant shall not use the Premises or the Building, or any part thereof, or suffer or permit the use or occupancy of the Premises or the Building or any part thereof by any of the Tenant Parties (i) in a manner which would violate any of the covenants, agreements, terms, provisions and conditions of this Lease or otherwise applicable to or binding upon the Premises; (ii) for any unlawful purposes or in any unlawful manner; (iii) which, in the reasonable judgment of Landlord (taking into account the use of the Building as a combination office and retail building and the Permitted Uses) shall (a) impair the appearance or reputation of the Building; (b) impair, interfere with or otherwise diminish the quality of any of the Building services or the proper and economic heating, cleaning, ventilating, air conditioning or other servicing of the Building or Premises, or the use or occupancy of any of the Common Areas; (c) occasion discomfort, inconvenience or annoyance in any material respect, or cause any injury or damage to any occupants of the Premises or other tenants or occupants of the Building or their property; or (d) cause harmful air emissions or any unusual or other objectionable odors, noises or emissions to emanate from the Premises; (iv) in a manner which is inconsistent with the operation and/or maintenance of the Building as a first-class combination office and retail facility; (v) for any fermentation processes whatsoever; or (vi) in a manner which shall increase such insurance rates on the Building or on property located therein over that applicable when Tenant first took occupancy of the Premises hereunder.

(b) With respect to the use and occupancy of the Premises and the Common Areas, Tenant will not: (i) place or maintain any signage, trash, refuse or other articles in any vestibule or entry of the Premises, on the footwalks or corridors adjacent thereto or elsewhere on the exterior of the Premises, nor obstruct any driveway, corridor, footwalk, parking area, mall or any other Common Areas; (ii) permit undue accumulations of or bum garbage, trash, rubbish or other refuse within or without the Premises; (iii) permit the parking of vehicles so as to interfere with the use of any driveway, corridor, footwalk, parking area, or other Common Areas; (iv) receive or ship articles of any kind outside of those areas reasonably designated by Landlord; (v) conduct or permit to be conducted any auction, going out of business sale, bankruptcy sale (unless directed by court order), or other similar type sale in or connected with the Premises; (vi) use the name of the Building, the Property, Landlord, or any of Landlord's affiliates or subsidiaries or any photograph, film, drawing, or other depiction or representation of the Building and/or the Property or any part thereof, which contains signage or distinctive architectural characteristics that cause the scene photographed, filmed, drawn, depicted, or represented to be identifiable as being the Building and/or the Property, in any publicity, promotion, trailer, press release, advertising, printed, or display materials without Landlord's prior written consent; or (vii) except in connection with Tenant's Work and/or Alterations (hereinafter defined) approved by Landlord, cause or permit any hole to be drilled or made in any part of the Building.

5. RENT; ADDITIONAL RENT

5.1 Base Rent. During the Term, Tenant shall pay to Landlord Base Rent in equal monthly installments, in advance and without demand on the first day of each month for and with respect to such month. Unless otherwise expressly provided herein, the payment of Base Rent, additional rent and other charges reserved and covenanted to be paid under this Lease with respect to the Premises (collectively, **"Rent")** shall commence on the Term Commencement Date, and shall be prorated for any partial months. Rent shall be payable to Landlord or, if Landlord shall so direct in writing, to Landlord's agent or nominee, in lawful money of the United States which shall be legal tender for payment of all debts and dues, public and private, at the time of payment.

5.2 Operating Costs.

(a) **"Building Operating Costs"** shall mean all costs incurred and expenditures of whatever nature made by Landlord in the operation and management of the Building or allocated to the Building, including without limitation any costs for utilities supplied to the Common Areas of the Building, and any costs for repair and replacements, cleaning and maintenance of the Common Areas of the Building, related equipment, facilities and appurtenances and HVAC equipment. For costs and expenditures made by Landlord in connection with the operation, management, repair, replacement, maintenance and insurance of the Building as a whole, Landlord shall make a reasonable allocation thereof between the retail and non-retail portions of the Building, if applicable. Building Operating Costs shall not include Excluded Costs (hereinafter defined).

(b) **"Property Operating Costs"** shall mean all costs incurred and expenditures of whatever nature made in the operation, management, repair, replacement, maintenance and insurance of the Building and the parking areas serving the Building (collectively, the **"Property"),** including without limitation a management fee paid to Landlord's property manager, the costs of Landlord's management office for the Property, the cost of operating any amenities in the Property available to all tenants of the Property and any subsidy provided by Landlord for or with respect to any such amenity. To the extent that a cost included in Property Operating Costs is also allocable to property other than the Property, such cost shall be equitably allocated to each parcel of property which benefits from such cost. Property Operating Costs shall not include Excluded Costs.

(c) **"Excluded Costs"** shall be defined as (i) any mortgage charges (including interest, principal, points and fees); (ii) brokerage commissions; (iii) salaries of executives and owners not directly employed in the management/operation of the Property; (iv) the cost of work done by Landlord for a particular tenant; (v) subject to Subsection 5.2(i) below, such portion of expenditures as are not properly chargeable against income; (vi) the costs of contributions made by Landlord to any tenant of the Property in connection with the build-out of its premises; (vii) franchise or income taxes imposed on Landlord; (viii) costs paid directly by individual tenants to suppliers, including tenant electricity, telephone and other utility costs; (ix) increases in premiums for insurance when such increase is caused by the use of the Building by Landlord or any other tenant of the Building; (x) maintenance and repair of capital items not a part of the Property; (xi) depreciation of the Building; (xii) costs relating to maintaining Landlord's existence as a corporation, partnership or other entity; (xiii) advertising and other fees and costs incurred in procuring tenants; (xiv) the cost of any items for which Landlord is reimbursed by insurance, condemnation awards, refund, rebate or otherwise, and any expenses for repairs or maintenance to the extent covered by warranties, guaranties and service contracts; and (xv) costs incurred in connection with any disputes between Landlord and its employees, between Landlord and Building management, or between Landlord and other tenants or occupants.

(d) **"Capital Interest Rate"** shall be defined as an annual rate of either one percentage point over the AA Bond rate (Standard & Poor's corporate composite or, if unavailable, its equivalent) as reported in the financial press at the time the capital expenditure is made or, if the capital item is acquired through third party financing, then the actual (including fluctuating) rate paid by Landlord in financing the acquisition of such capital item.

(e) **"Annual Charge Off"** shall be defined as the annual amount of principal and interest payments which would be required to repay a loan (**"Capital Loan")** in equal monthly installments over the Useful Life (hereinafter defined), of the capital item in question on a direct reduction basis at an annual interest rate equal to the Capital Interest Rate, where the initial principal balance is the cost of the capital item in question.

(f) **"Useful Life"** shall be reasonably determined by Landlord in accordance with sound accounting principles and practices consistently applied. Notwithstanding the foregoing, if Landlord reasonably concludes on the basis of engineering estimates that a particular capital expenditure will effect savings in Building Operating Costs and/or Property Operating Costs including, without limitation, energy related costs, and that such annual projected savings will exceed the Annual Charge Off of Capital Expenditures computed as aforesaid, then and in such event, the Annual Charge Off shall be determined based upon a Useful Life which would cause the principal and interest payments in a full repayment of the Capital Loan in question to equal the amount of projected savings of such Useful Life.

(g) Payment of Operating Costs. If, with respect to any fiscal year in which occurs any part of the Term (an **"Operating Year")** during the Term after the Operating Costs Base Year, Building Operating Costs exceeds the Building Operating Costs for the Operating Costs Base Year, then Tenant shall pay to Landlord, as additional rent, Tenant's Building Share of such excess (the **"Building Operating Costs Excess").** If, with respect to any Operating Year during the Term after the Operating Costs Base Year, Property Operating Costs exceeds the Property Operating Costs for the Operating Costs Base Year, then Tenant shall pay to Landlord, as additional rent, Tenant's Property Share of such excess (the **"Property Operating Costs Excess"** and together with Building Operating Costs Excess, the **"Operating Costs Excess")**. Landlord shall make a good faith estimate of the Operating Costs Excess for any Operating Year or part thereof during the term, and Tenant shall pay to Landlord, on the first (1st) day of each subsequent calendar month, an amount equal to Tenant's Building Share of the Building Operating Costs Excess and Tenant's Property Share of the Property Operating Costs Excess (collectively, **"Tenant's Share of the Operating Costs Excess")** for such Operating Year and/or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Share of the Operating Costs Excess and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Share of the Operating Costs Excess shall be appropriately adjusted in accordance with the estimations so that, by the end of the fiscal year in question, Tenant shall have paid all of Tenant's Share of the Operating Costs Excess as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when the actual Operating Costs Excess is available for each Operating Year.

(h) Annual Reconciliation. Landlord shall, within one hundred twenty (120) days after the end of each Operating Year, deliver to Tenant a reasonably detailed statement of the actual amount of Building Operating Costs and Property Operating Costs for such Operating Year **("Year End Statement")**. Failure of Landlord to provide the Year End Statement within

the time prescribed shall not relieve Tenant from its obligations hereunder. If the total of such monthly remittances on account of any Operating Year is greater than Tenant's Share of the Operating Costs Excess actually incurred for such Operating Year, then, provided no Event of Default has occurred nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Operating Costs due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord. If the total of such remittances is less than Tenant's Share of the Operating Costs Excess actually incurred for such Operating Year, Tenant shall pay the difference to Landlord, as additional rent hereunder, within ten (10) days of Tenant's receipt of an invoice therefor. Landlord's estimate of the Operating Costs Excess for the next Operating Year shall be based upon the Operating Costs Excess actually incurred for the prior Operating Year as reflected in the Year-End Statement plus a reasonable adjustment based upon estimated increases in Building Operating Costs and/or Property Operating Costs. The provisions of this Section 5.2(h) shall survive the expiration or earlier termination of this Lease.

(i) Capital Expenditures. If, during the Term, Landlord shall replace any capital items or make any capital expenditures (collectively, **"Capital Expenditures")** the total amount of which (net of any warranty claims) is not properly includable in Building Operating Costs and/or Property Operating Costs for the Operating Year in which they were made, in accordance with sound accounting principles and practices consistently applied in effect at the time of such replacement, there shall nevertheless be included in such Building Operating Costs and/or Property Operating Costs (and in Building Operating Costs and/or Property Operating Costs for each succeeding Operating Year) the amount, if any, by which the Annual Charge Off (determined as hereinafter provided) of such Capital Expenditure (less insurance proceeds, if any, collected by Landlord by reason of damage to, or destruction of the capital item being replaced) exceeds the Annual Charge Off of the Capital Expenditure for the item being replaced. If a new capital item is acquired which does not replace another capital item, and such new capital item being acquired is either (i) required by any Legal Requirements enacted after the Execution Date or (ii) reasonably projected to reduce Building Operating Costs and/or Property Operating Costs, then there shall be included in Building Operating Costs and/or Property Operating Costs for each Operating Year in which and after such capital expenditure is made the Annual Charge Off of such capital expenditure.

(j) Part Years. If the Term Commencement Date or the Expiration Date occurs in the middle of an Operating Year, Tenant shall be liable for only that portion of the Building Operating Costs and Property Operating Costs with respect to such Operating Year within the Term.

(k) Gross-Up. If, during any Operating Year, less than all of the Building is occupied by tenants or if Landlord was not supplying all tenants with the services being supplied to Tenant hereunder, actual Operating Costs incurred shall be reasonably extrapolated by Landlord on an item-by-item basis to the reasonable Operating Costs that would have been incurred if the Building was fully occupied and such services were being supplied to all tenants, and such extrapolated Operating Costs shall, for all purposes hereof, be deemed to be the Operating Costs for such Operating Year.

5.3 Taxes.

(a) "Taxes" shall mean the real estate taxes and other taxes, levies and assessments imposed upon the Property, and upon any personal property of Landlord used in the operation thereof, or on Landlord's interest therein or such personal property (provided that to the extent the Property is not a separate tax parcel, such amounts shall be allocated among the buildings located on the tax parcel of which the Property is a part and shall be based on the assessor's records or, if the records do not provide a separate allocation, based on square footage of the buildings in question unless Landlord reasonably determines that such allocation should be made on another basis); charges, fees and assessments for transit, housing, police, fire or other services or purported benefits to the Property, including without limitation community preservation assessments; service or user payments in lieu of taxes; and any and all other taxes, levies, betterments, assessments and charges arising from the ownership, leasing, operation, use or occupancy of the Property or based upon rentals derived therefrom, which are or shall be imposed by federal, state, county, municipal or other governmental authorities. Taxes shall not include any inheritance, estate, succession, gift, franchise, rental, income or profit tax, capital stock tax, capital levy or excise, or any income taxes arising out of or related to the ownership and operation of the Property, provided, however, that any of the same and any other tax, excise, fee, levy, charge or assessment, however described, that may in the future be levied or assessed as a substitute for or an addition to, in whole or in part, any tax, levy or assessment which would otherwise constitute Taxes, whether or not now customary or in the contemplation of the parties on the Execution Date of this Lease, shall constitute Taxes, but only to the extent calculated as if the Property were the only real estate owned by Landlord. "Taxes" shall also include reasonable expenses (including without limitation legal and consultant fees) of tax abatement or other proceedings contesting assessments or levies.

(b) "Tax Period" shall be any fiscal/tax period in respect of which Taxes are due and payable to the appropriate governmental taxing authority (i.e., as mandated by the governmental taxing authority), any portion of which period occurs during the Term of this Lease.

(c) Payment of Taxes. If, with respect to any Tax Period during the Term after the Tax Base Year, the aggregate amount of Taxes exceeds the Taxes for the Tax Base Year, Tenant shall pay to Landlord, as additional rent, Tenant's Property Share of such excess (the **"Tax Excess"**). Landlord may make a good faith estimate of the Taxes to be due by Tenant for any Tax Period or part thereof during the Term, and Tenant shall pay to Landlord, on the Term Commencement Date and on the first (1st) day of each calendar month thereafter, an amount equal to Tenant's Property Share of the Tax Excess for such Tax Period or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Property Share of the Tax Excess and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Property Share of the Tax Excess shall be appropriately adjusted in accordance with the estimations so that, by the end of the Tax Period in question, Tenant shall have paid all of Tenant's Property Share of the Tax Excess as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Taxes are available for each Tax Period. If the total of such monthly remittances is greater than Tenant's Property Share of the Tax Excess actually due for such Tax Period, then, provided no Event of Default has occurred nor any event which, with the passage of time and/or

the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Taxes due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord. If the total of such remittances is less than Tenant's Property Share of the Tax Excess actually due for such Tax Period, Tenant shall pay the difference to Landlord, as additional rent hereunder, within ten (10) days of Tenant's receipt of an invoice therefor. Landlord's estimate for the next Tax Period shall be based upon the actual Tax Excess attributable to the Property for the prior Tax Period plus a reasonable adjustment based upon estimated increases in Taxes. In the event that Payments in Lieu of Taxes **("PILOT")**, instead of or in addition to Taxes, are separately assessed to certain portions of the Property including the Premises, Tenant agrees, except as otherwise expressly provided herein to the contrary, to pay to Landlord, as additional rent, the excess of the portion of such PILOT attributable to the Premises over the Tax Base Year in the same manner as provided above for the payment of Taxes. The provisions of this Section 5.3(c) shall survive the expiration or earlier termination of this Lease.

(d) Effect of Abatements. Appropriate credit against Taxes or PILOT shall be given for any refund obtained by reason of a reduction in any Taxes by the assessors or the administrative, judicial or other governmental agency responsible therefor after deduction of Landlord's expenditures for reasonable legal fees and for other reasonable expenses incurred in obtaining the Tax or PILOT refund.

(e) Part Years. If the Term Commencement Date or the Expiration Date occurs in the middle of a Tax Period, Tenant shall be liable for only that portion of the Taxes, as the case may be, with respect to such Tax Period within the Term.

5.4 Late Payments.

(a) Any payment of Rent due hereunder not paid when due shall bear interest for each month or fraction thereof from the due date until paid in full at the annual rate of eighteen percent (18%), or at any applicable lesser maximum legally permissible rate for debts of this nature (the **"Default Rate")**.

(b) Additionally, if Tenant fails to make any payment within five (5) days after the due date therefor, Landlord may charge Tenant a fee, which shall constitute liquidated damages, equal to Five Hundred and NO/100 Dollars ($500.00) for each such late payment.

(c) For each Tenant payment check to Landlord that is returned by a bank for any reason, Tenant shall pay a returned check charge equal to the amount as shall be customarily charged by Landlord's bank at the time.

(d) Money paid by Tenant to Landlord shall be applied to Tenant's account in the following order: first, to any unpaid additional rent, including without limitation late charges, returned check charges, legal fees and/or court costs chargeable to Tenant hereunder; and then to unpaid Base Rent.

(e) The parties agree that the late charge referenced in Section 5.4(b) represents a fair and reasonable estimate of the costs that Landlord will incur by reason of any late payment by Tenant, and the payment of late charges and interest are distinct and separate in that the payment of interest is to compensate Landlord for the use of Landlord's money by Tenant, while the payment of late charges is to compensate Landlord for Landlord's processing, administrative and other costs incurred by Landlord as a result of Tenant's delinquent payments. Acceptance of a late charge or interest shall not constitute a waiver of Tenant's default with respect to the overdue amount or prevent Landlord from exercising any of the other rights and remedies available to Landlord under this Lease or at law or in equity now or hereafter in effect.

(f) If Tenant during any six (6) month period shall be more than five (5) days delinquent in the payment of any installment of Rent on three (3) or more occasions, then, notwithstanding anything herein to the contrary, Landlord may, by written notice to Tenant, elect to require Tenant to pay all Base Rent and Additional Rent on account of Operating Costs and Taxes quarterly in advance. Such right shall be in addition to and not in lieu of any other right or remedy available to Landlord hereunder or at law on account of Tenant's default hereunder.

5.5 No Offset; Independent Covenants; Waiver. Rent shall be paid without notice or demand, and without setoff, counterclaim, defense, abatement, suspension, deferment, reduction or deduction, except as expressly provided herein. **TENANT WAIVES ALL RIGHTS (I) TO ANY ABATEMENT, SUSPENSION, DEFERMENT, REDUCTION OR DEDUCTION OF OR FROM RENT, AND (II) TO QUIT, TERMINATE OR SURRENDER THIS LEASE OR THE PREMISES OR ANY PART THEREOF, EXCEPT AS EXPRESSLY PROVIDED HEREIN. TENANT HEREBY ACKNOWLEDGES AND AGREES THAT THE OBLIGATIONS OF TENANT HEREUNDER SHALL BE SEPARATE AND INDEPENDENT COVENANTS AND AGREEMENTS, THAT RENT SHALL CONTINUE TO BE PAYABLE IN ALL EVENTS AND THAT THE OBLIGATIONS OF TENANT HEREUNDER SHALL CONTINUE UNAFFECTED, UNLESS THE REQUIREMENT TO PAY OR PERFORM THE SAME SHALL HAVE BEEN TERMINATED PURSUANT TO AN EXPRESS PROVISION OF THIS LEASE. LANDLORD AND TENANT EACH ACKNOWLEDGES AND AGREES THAT THE INDEPENDENT NATURE OF THE OBLIGATIONS OF TENANT HEREUNDER REPRESENTS FAIR, REASONABLE, AND ACCEPTED COMMERCIAL PRACTICE WITH RESPECT TO THE TYPE OF PROPERTY SUBJECT TO THIS LEASE, AND THAT THIS AGREEMENT IS THE PRODUCT OF FREE AND INFORMED NEGOTIATION DURING WHICH BOTH LANDLORD AND TENANT WERE REPRESENTED BY COUNSEL SKILLED IN NEGOTIATING AND DRAFTING COMMERCIAL LEASES IN MASSACHUSETTS, AND THAT THE ACKNOWLEDGEMENTS AND AGREEMENTS CONTAINED HEREIN ARE MADE WITH FULL KNOWLEDGE OF THE HOLDING IN WESSON V. LEONE ENTERPRISES. INC., 437 MASS. 708 (2002). SUCH ACKNOWLEDGEMENTS, AGREEMENTS AND WAIVERS BY TENANT ARE A MATERIAL INDUCEMENT TO LANDLORD ENTERING INTO THIS LEASE.**

5.6 Survival. Any obligations under this Section 5 which shall not have been paid at the expiration or earlier termination of the Term shall survive such expiration or earlier termination and shall be paid when and as the amount of same shall be determined and be due.

6. SECURITY DEPOSIT/ LETTER OF CREDIT

6.1 Amount.

Contemporaneously with the execution of this Lease, Tenant shall deliver to Landlord either (i) cash in an amount specified in the Lease Summary Sheet (the **"Cash Security Deposit"**), which shall be held by Landlord in accordance with Section 7.5 below, or (ii) an irrevocable letter of credit which shall (a) be in the amount specified in the Lease Summary Sheet and otherwise in the form attached hereto as Exhibit 4; (b) issued by a bank reasonably acceptable to Landlord upon which presentment may be made in Boston, Massachusetts (if Landlord so requires at the time of its approval thereof); and (c) be for a term of one (1) year, subject to extension in accordance with the terms hereof (the **"Letter of Credit"**). The Letter of Credit shall be held by Landlord, without liability for interest, as security for the faithful performance by Tenant of all of the terms, covenants and conditions of this Lease by the Tenant to be kept and performed during the Term. In no event shall the Letter of Credit be deemed to be a prepayment of Rent nor shall it be considered a measure of liquidated damages. Unless the Letter of Credit is automatically renewing, at least thirty (30) days prior to the maturity date of the Letter of Credit (or any replacement Letter of Credit), Tenant shall deliver to Landlord a replacement Letter of Credit which shall have a maturity date no earlier than the next anniversary of the Term Commencement Date or one (1) year from its date of delivery to Landlord, whichever is later. In the event that the Extension Term Base Rent during any Extension Term is greater than Base Rent during the previous term, the face amount of the Letter of Credit shall be proportionately increased.

6.2 Application of Proceeds of Letter of Credit. Upon an Event of Default, or if any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors (and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days) or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding, Landlord at its sole option may draw down all or a part of the Letter of Credit. The balance of any Letter of Credit cash proceeds shall be held in accordance with Section 6.5 below. Should the entire Letter of Credit, or any portion thereof, be drawn down by Landlord, Tenant shall, upon the written demand of Landlord, deliver a replacement Letter of Credit in the amount drawn, and Tenant's failure to do so within ten (10) days after receipt of such written demand shall constitute an additional Event of Default hereunder. The application of all or any part of the cash proceeds of the Letter of Credit to any obligation or default of Tenant under this Lease shall not deprive Landlord of any other rights or remedies Landlord may have nor shall such application by Landlord constitute a waiver by Landlord.

6.3 Transfer of Letter of Credit. In the event that Landlord transfers its interest in the Premises, Tenant shall upon notice from and at no cost to Landlord, deliver to Landlord an amendment to the Letter of Credit or a replacement Letter of Credit naming Landlord's successor as the beneficiary thereof. If Tenant fails to deliver such amendment or replacement within ten (10) days after written notice from Landlord, Landlord shall have the right to draw down the entire amount of the Letter of Credit and hold the proceeds thereof in accordance with Section 6.5 below.

6.4 Credit of Issuer of Letter of Credit. In event of a material adverse change in the financial position of any bank or institution which has issued the Letter of Credit or any replacement Letter of Credit hereunder, Landlord reserves the right to require that Tenant change the issuing bank or institution to another bank or institution reasonably approved by Landlord. Tenant shall, within ten (10) days after receipt of written notice from Landlord, which notice shall include the basis for Landlord's reasonable belief that there has been a material adverse change in the financial position of the issuer of the Letter of Credit, replace the then-outstanding letter of credit with a like Letter of Credit from another bank or institution approved by Landlord.

6.5 Security Deposit. Landlord shall hold the Cash Security Deposit and/or the balance of proceeds remaining after a draw on the Letter of Credit (each hereinafter referred to as the **"Security Deposit"**) as security for Tenant's performance of all its Lease obligations. After an Event of Default, Landlord may apply the Security Deposit, or any part thereof, to Landlord's damages without prejudice to any other Landlord remedy. Tenant shall have the right to deliver a replacement Letter of Credit in the form and amount required hereunder, and upon receipt of such replacement Letter of Credit, Landlord shall return the Security Deposit to Tenant. Landlord has no obligation to pay interest on the Security Deposit and may co-mingle the Security Deposit with Landlord's funds. If Landlord conveys its interest under this Lease, the Security Deposit, or any part not applied previously, may be turned over to the grantee in which case Tenant shall look solely to the grantee for the proper application and return of the Security Deposit.

6.6 Return of Security Deposit or Letter of Credit. Should Tenant comply with all of such terms, covenants and conditions and promptly pay all sums payable by Tenant to Landlord hereunder, the Security Deposit and/or Letter of Credit or the remaining proceeds therefrom, as applicable, shall be returned to Tenant within ninety (90) days after the end of the Term, less any portion thereof which may have been utilized by Landlord to cure any default or applied to any actual damage suffered by Landlord.

7. SECURITY INTEREST IN TENANT'S PROPERTY. In addition to any statutory landlord's lien, now or hereafter enacted, Tenant grants to Landlord, to secure performance of Tenant's obligations hereunder, a first priority security interest in Tenant's Property (for purposes of this Section 7, **"Tenant's Collateral")**, and Tenant's Collateral shall not be removed from the Premises without the prior written consent of Landlord until all obligations of Tenant have been fully performed. Landlord is hereby authorized, and granted a power of attorney to file UCC-1 financing statements or any other instrument, at any time during the term of this Lease, necessary or appropriate to perfect Landlord's security interest under this Section 8, which power is coupled with an interest and is irrevocable during the Term. Upon the occurrence of an Event of Default, Landlord may, in addition to all other remedies, without notice or demand except as provided below, exercise the rights afforded to a secured party under the Uniform Commercial Code of the Commonwealth of Massachusetts (the **"UCC")**. To the extent the UCC requires Landlord to give to Tenant notice of any act or event and such notice cannot be validly waived before a default occurs, then five (5) days' prior written notice thereof shall be reasonable notice of the act or event.

8. UTILITIES, HVAC; WASTE REMOVAL

8.1 Electricity. Commencing on the Term Commencement Date, Tenant shall pay all charges for electricity (at the rate charged to Landlord, if applicable, without mark-up) furnished to the Premises and/or any equipment exclusively serving the Premises as additional rent, based on Landlord's reasonable estimates or any applicable metering equipment. At Tenant's request, Landlord shall provide Tenant with reasonable back-up documentation regarding the total charges and the method of allocating the charges to Tenant. Alternatively, Landlord may elect, at Tenant's request and at Tenant's sole cost and expense, to furnish and install in a location approved by Landlord in or near the Premises any necessary metering equipment reasonably acceptable to Landlord and the supplier thereof to be used to measure electricity furnished to the Premises and any equipment exclusively serving the same. Tenant shall, at Tenant's sole cost and expense, maintain and keep in good order, condition and repair any such metering equipment. Tenant shall pay the full amount of any charges attributable to such meter on or before the due date therefor either to Landlord or directly to the supplier thereof, at Landlord's election.

8.2 Water. The costs of sewer and water for bathrooms and employee kitchens within the Premises are included in Building Operating Costs. At Tenant's request, Landlord shall provide to Tenant a reasonable amount of condenser water required by any supplemental HVAC system installed by Tenant, and Tenant shall pay for such condenser water at Building standard rates, within thirty (30) days after demand therefor from time to time (but no more often than monthly).

8.3 Heat, Ventilating and Air Conditioning. Landlord shall provide to the Premises during normal business hours (as set forth in Section 2.4 above) (a) heat during the normal heating season, and (b) air conditioning during the normal cooling season. Whenever the air conditioning systems are in operation, Tenant agrees to use reasonable efforts to lower and close the blinds or drapes when necessary because of the sun's position, and to cooperate fully with Landlord with regard to, and to abide by all the reasonable regulations and requirements which Landlord may prescribe for the proper functioning and protection of the air conditioning systems. Landlord shall use reasonable efforts, upon no less than one (1) business day's advance written notice from Tenant, to furnish, at Tenant's sole cost and expense, additional heat or air conditioning services to the Premises on days and at times other than as above provided at Landlord's standard rates from time to time (which rate, as of the Execution Date, is $65.00 per hour).

8.4 Other Utilities. Subject to Landlord's reasonable rules and regulations governing the same, Tenant shall obtain and pay, as and when due, for all other utilities and services consumed in and/or furnished to the Premises, together with all taxes, penalties, surcharges and maintenance charges pertaining thereto.

8.5 Interruption or Curtailment of Utilities. When necessary by reason of accident or emergency, or for repairs, alterations, replacements or improvements which in the reasonable judgment of Landlord are desirable or necessary to be made, Landlord reserves the right, upon as much prior notice to Tenant as is practicable under the circumstances and no less than twenty-four (24) hours' notice except in the event of an emergency, to interrupt, curtail, or stop (i) the furnishing of hot and/or cold water, and (ii) the operation of the plumbing and electric

systems. Landlord shall exercise reasonable diligence to eliminate the cause of any such interruption, curtailment, stoppage or suspension, but there shall be no diminution or abatement of Rent or other compensation due from Landlord to Tenant hereunder, nor shall this Lease be affected or any of Tenant's obligations hereunder reduced, and Landlord shall have no responsibility or liability for any such interruption, curtailment, stoppage, or suspension of services or systems.

8.6 Telecommunications Providers. Notwithstanding anything to the contrary herein or in this Lease contained, Landlord has no obligation to allow any particular telecommunications service provider to have access to the Building or to Premises other than Verizon (collectively, the **"Approved Providers")**. If Landlord permits such access, Landlord may condition such access upon (a) the execution of Landlord's standard telecommunications agreement (which shall include a provision requiring the payment of fair market rent for any space in the Property dedicated, licensed and/or leased to such provider), and (b) the payment to Landlord by Tenant or the service provider of any costs incurred by Landlord in facilitating such access. Subject to the preceding sentence, Landlord's consent to providing access to the Building to any service provider other than the Approved Providers shall not be unreasonably withheld, conditioned or delayed provided such access does not require any street opening permits or approvals (unless otherwise agreed to by the City of Cambridge) or would unreasonably interfere with the use of the common areas of the Property.

8.7 Landlord Services. Subject to reimbursement pursuant to Section 5.2 above, Landlord shall provide the services described in Exhibit 6 attached hereto and made a part hereof (**"Landlord's Services"**).

9. MAINTENANCE AND REPAIRS

9.1 Maintenance and Repairs by Tenant. Tenant shall keep all and singular the Premises neat and clean and free of insects, rodents, vermin and other pests and, subject to Section 8.7 above, Trash, and in such good repair, order and condition as the same are in on the Term Commencement Date or in such better condition as the Premises may be put in during the Term, reasonable wear and tear and damage by insured Casualty excepted. Tenant shall be solely responsible, at Tenant's sole cost and expense, for the proper maintenance of all equipment and appliances installed and/or operated by Tenant and/or exclusively serving the Premises.

9.2 Maintenance and Repairs by Landlord. Except as otherwise provided in Section 14, and subject to Tenant's obligations in Section 9.1 above, Landlord shall keep and maintain the roof, Building structure, structural floor slabs, columns and the equipment installed by Landlord (including, without limitation, all base building systems, sanitary, electrical, heating, air conditioning, plumbing, security or other systems) in good repair, order and condition. In addition, Landlord shall operate and maintain the Common Areas in substantially the same manner as other first-class combination office and retail facilities in the East Cambridge/ Kendall Square area.

9.3 Accidents to Sanitary and Other Systems. Tenant shall give to Landlord prompt notice of any fire or accident in the Premises or in the Building and of any damage to, or defective condition in, any part or appurtenance of the Building including, without limitation, sanitary, electrical, ventilation, heating and air conditioning or other systems located in, or passing through, the Premises. Except as otherwise provided in Section 14, and subject to Tenant's obligations in Section 9.1 above, such damage or defective condition shall be remedied by Landlord with reasonable diligence, but, subject to Section 13.5 below, if such damage or defective condition was caused by any of the Tenant Parties, the cost to remedy the same shall be paid by Tenant.

9.4 Floor Load—Heavy Equipment. Tenant shall not place a load upon any floor of the Premises exceeding the floor load per square foot of area which such floor was designed to carry and which is allowed by Legal Requirements. Landlord reserves the right to prescribe the weight and position of all safes, heavy machinery, heavy equipment, freight, bulky matter or fixtures (collectively, **"Heavy Equipment")**, which shall be placed so as to distribute the weight. Heavy Equipment shall be placed and maintained by Tenant at Tenant's expense in settings sufficient in Landlord's reasonable judgment to absorb and prevent vibration, noise and annoyance. Tenant shall not move any Heavy Equipment into or out of the Building without giving Landlord prior written notice thereof and observing all of Landlord's Rules and Regulations with respect to the same. If such Heavy Equipment requires special handling, Tenant agrees to employ only persons holding a Master Rigger's License to do said work, and that all work in connection therewith shall comply with Legal Requirements. Any such moving shall be at the sole risk and hazard of Tenant and Tenant will defend, indemnify and save Landlord and Landlord's agents (including without limitation its property manager), contractors and employees (collectively with Landlord, the **"Landlord Parties")** harmless from and against any and all claims, damages, losses, penalties, costs, expenses and fees (including without limitation reasonable legal fees) (collectively, **"Claims")** resulting directly or indirectly from such moving. Proper placement of all Heavy Equipment in the Premises shall be Tenant's responsibility.

10. ALTERATIONS AND IMPROVEMENTS BY TENANT

10.1 Landlord's Consent Required. Tenant shall not make any alterations, decorations, installations, removals, additions or improvements (including, without limitation, Tenant's Work) (collectively, **"Alterations")** in or to the Premises without Landlord's prior written approval of the contractor(s), written plans and specifications, a time schedule therefor and the items listed in Exhibit 5 attached hereto and made a part hereof. Landlord reserves the right to require that Tenant use Landlord's preferred vendor(s) for any Alterations that involve roof penetrations, alarm tie-ins, sprinklers, fire alarm and other life safety equipment. Tenant shall not make any amendments or additions to plans and specifications approved by Landlord without Landlord's prior written consent. Landlord's approval of non-structural Alterations shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, Landlord may withhold its consent in its sole discretion (a) to any Alteration to or affecting the roof and/or building systems, (b) with respect to matters of aesthetics relating to Alterations to or affecting the exterior of the Building, and (c) to any Alteration affecting the Building structure. Tenant shall be responsible for all elements of the design of Tenant's plans (including, without limitation, compliance with Legal Requirements, functionality of design, the structural integrity of the design, the configuration of the Premises and the placement of Tenant's furniture, appliances and equipment), and Landlord's approval of Tenant's plans shall in no event relieve

Tenant of the responsibility for such design. Landlord shall have no liability or responsibility for any claim, injury or damage alleged to have been caused by the particular materials (whether building standard or non-building standard), appliances or equipment selected by Tenant in connection with any work performed by or on behalf of Tenant. Except as otherwise expressly set forth herein, all Alterations shall be done at Tenant's sole cost and expense and at such times and in such manner as Landlord may from time to time reasonably designate. Tenant shall provide Landlord with reproducible record drawings (in CAD format) of all Alterations within sixty (60) days after completion thereof. If Tenant shall make any Alterations, then Landlord may elect to require Tenant at the expiration or sooner termination of the Term to restore the Premises to substantially the same condition as existed immediately prior to the Alterations.

10.2 After-Hours. Landlord and Tenant recognize that to the extent Tenant elects to perform some or all of the Alterations during times other than normal construction hours (i.e., Monday-Friday, 7:00 a.m. to 3:00 p.m., excluding holidays), Landlord will need to make arrangements to have supervisory personnel on site. Accordingly, Landlord and Tenant agree as follows: Tenant shall give Landlord at least two (2) business days' prior written notice of any time outside of normal construction hours when Tenant intends to perform portions of Alterations (the **"After-Hours Work")**. Tenant shall reimburse Landlord, within ten (10) days after demand therefor, for the cost of Landlord's supervisory personnel overseeing the After- Hours Work. In addition, if construction during normal construction hours unreasonably disturbs other tenants of the Property, in Landlord's sole discretion, Landlord may require Tenant to stop the performance of Alterations during normal construction hours and to perform the same after hours, subject to the foregoing requirement to pay for the cost of Landlord's supervisory personnel.

10.3 Harmonious Relations. Tenant agrees that it will not, either directly or indirectly, use any contractors and/or materials if their use will create any difficulty, whether in the nature of a labor dispute or otherwise, with other contractors and/or labor engaged by Tenant or Landlord or others in the construction, maintenance and/or operation of the Property or any part thereof. In the event of any such difficulty, upon Landlord's request, Tenant shall cause all contractors, mechanics or laborers causing such difficulty to leave the Property immediately.

10.4 Liens. No Alterations shall be undertaken by Tenant until (i) Tenant has made provision for written waiver of liens from all contractors for such Alteration and taken other appropriate protective measures approved and/or required by Landlord; and (ii) Tenant has procured appropriate surety payment and performance bonds which shall name Landlord as an additional obligee and has filed lien bond(s) (in jurisdictions where available) on behalf of such contractors. Any mechanic's lien filed against the Premises or the Building for work claimed to have been done for, or materials claimed to have been furnished to, Tenant shall be discharged by Tenant within ten (10) days thereafter, at Tenant's expense by filing the bond required by law or otherwise.

10.5 General Requirements. Unless Landlord and Tenant otherwise agree in writing, Tenant shall (a) procure or cause others to procure on its behalf all necessary permits before undertaking any Alterations in the Premises and provide copies thereof to Landlord; (b) perform all of such Alterations in a good and workmanlike manner, employing materials of good quality and in compliance with Landlord's construction rules and regulations, all insurance

requirements of this Lease, and Legal Requirements; and (c) defend, indemnify and hold the Landlord Parties harmless from and against any and all Claims occasioned by or growing out of such Alterations. Tenant shall cause contractors employed by Tenant to (i) carry Worker's Compensation Insurance in accordance with statutory requirements, (ii) carry Automobile Liability Insurance and Commercial General Liability Insurance (A) naming Landlord as an additional insured, and (B) covering such contractors on or about the Premises in the amounts stated in Section 13 hereof or in such other reasonable amounts as Landlord shall require, and (iii) submit binders evidencing such coverage to Landlord prior to the commencement of any such Alterations.

11. SIGNAGE

11.1 Restrictions. Tenant shall have the right to install Building standard signage identifying Tenant's business at the entrance to the Premises, which signage shall be subject to Landlord's prior written consent (which consent shall not be unreasonably withheld, conditioned or delayed). Subject to the foregoing, Tenant shall not place or suffer to be placed or maintained on the exterior of the Premises, or any part of the interior visible from the exterior thereof, any sign, banner, advertising matter or any other thing of any kind (including, without limitation, any hand-lettered advertising), and shall not place or maintain any decoration, letter or advertising matter on the glass of any window or door of the Premises without first obtaining Landlord's written approval. No signs or blinds may be put on or in any window or elsewhere if visible from the exterior of the Building. Landlord may provide Tenant with building standard blinds for each window within the Premises and Tenant shall install the same at Tenant's sole cost and expense. Tenant may not remove the building standard blinds without Landlord's prior written consent. Tenant may hang its own drapes, provided that they shall not in any way interfere with any building standard drapery or blinds provided by Landlord or be visible from the exterior of the Building, and that such drapes are so hung and installed that, when drawn, the building standard drapery or blinds are automatically also drawn.

11.2 Building Directory. Landlord shall list Tenant within the directory in the Building lobby at Landlord's sole cost and expense. Subject to reasonable limits on the number of lines on the directory Landlord can provide and all such additional signage in the lobby directory, Landlord shall add the names of any approved subtenants or licensees occupying any portion of the Premises at Tenant's sole cost and expense.

12. ASSIGNMENT, MORTGAGING AND SUBLETTING

12.1 Landlord's Consent Required. Except as expressly otherwise set forth herein, Tenant shall not, without Landlord's prior written consent, assign, sublet, mortgage, license, transfer or encumber this Lease or the Premises in whole or in part whether by changes in the ownership or control of Tenant, or any direct or indirect owner of Tenant, whether at one time or at intervals, by sale or transfer of stock, partnership or beneficial interests, operation of law or otherwise, or permit the occupancy of all or any portion of the Premises by any person or entity other than Tenant's employees (each of the foregoing, a **"Transfer")**. Any purported Transfer made without Landlord's consent, if required hereunder, shall be void and confer no rights upon any third person, provided that if there is a Transfer, Landlord may collect rent from the transferee without waiving the prohibition against Transfers, accepting the transferee, or

releasing Tenant from full performance under this Lease. In the event of any Transfer in violation of this Section 12, Landlord shall have the right to terminate this Lease upon thirty (30) days' written notice to Tenant given within sixty (60) days after receipt of written notice from Tenant to Landlord of any Transfer, or within one (1) year after Landlord first learns of the Transfer if no notice is given. No Transfer shall relieve Tenant of its primary obligation as party Tenant hereunder, nor shall it reduce or increase Landlord's obligations under this Lease.

12.2 Landlord's Recapture Right

(a) Tenant shall, prior to offering or advertising the Premises or any portion thereof for a Transfer to any entity other than an Affiliate for all or substantially all of the then - remaining Term, give a written notice (the **"Recapture Notice")** to Landlord which: (i) states that Tenant desires to make a Transfer, (ii) identifies the affected portion of the Premises (the **"Recapture Premises")**, (iii) identifies the period of time (the **"Recapture Period")** during which Tenant proposes to sublet the Recapture Premises, or indicates that Tenant proposes to assign its interest in this Lease, and (iv) offers to Landlord to terminate this Lease with respect to the Recapture Premises (in the case of a proposed assignment of Tenant's interest in this Lease or a subletting for the remainder of the term of this Lease) or to suspend the Term for the Recapture Period (i.e. the Term with respect to the Recapture Premises shall be terminated during the Recapture Period and Tenant's rental obligations shall be proportionately reduced). Landlord shall have fifteen (15) business days within which to respond to the Recapture Notice.

(b) If Tenant does not enter into a Transfer on the terms and conditions contained in the Recapture Notice on or before the date which is one hundred eighty (180) days after the earlier of: (x) the expiration of the 15-business day period specified in Section 12.2(a) above, or (y) the date that Landlord notifies Tenant that Landlord will not accept Tenant's offer contained in the Recapture Notice, *time being of the essence,* then prior to entering into any Transfer after such 180-day period, Tenant must deliver to Landlord a new Recapture Notice in accordance with Section 12.2(a) above

(c) Notwithstanding anything to the contrary contained herein, if Landlord notifies Tenant that it accepts the offer contained in the Recapture Notice or any subsequent Recapture Notice, Tenant shall have the right, for a period of fifteen (15) days following receipt of such notice from Landlord, *time being of the essence*, to notify Landlord in writing that it wishes to withdraw such offer and this Lease shall continue in full force and effect.

12.3 Standard of Consent to Transfer. If Landlord does not timely give written notice to Tenant accepting a Recapture Offer or declines to accept the same, then Landlord agrees that, subject to the provisions of this Section 12, Landlord shall not unreasonably withhold, condition or delay its consent to a Transfer at fair market rent and otherwise on the terms contained in the Recapture Notice to an entity which will use the Premises for the Permitted Uses and, in Landlord's reasonable opinion: (a) has a tangible net worth and other financial indicators sufficient to meet the Transferee's obligations under the Transfer instrument in question; (b) has a business reputation compatible with the operation of a first-class combination office and retail building; and (c) the intended use of such entity does not violate any exclusive or restrictive use provisions of any leases then in effect with respect to space in the Property.

12.4 Listing Confers no Rights. The listing of any name other than that of Tenant, whether on the doors of the Premises or on the Building directory, or otherwise, shall not operate to vest in any such other person, firm or corporation any right or interest in this Lease or in the Premises or be deemed to effect or evidence any consent of Landlord, it being expressly understood that any such listing is a privilege extended by Landlord revocable at will by written notice to Tenant.

12.5 Profits In Connection with Transfers. Tenant shall, within thirty (30) days of receipt thereof, pay to Landlord fifty percent (50%) of any rent, sum or other consideration to be paid or given in connection with any Transfer, either initially or over time, after deducting Tenant's reasonable out-of-pocket costs and expenses incurred in connection with such Transfer, in excess of Rent hereunder as if such amount were originally called for by the terms of this Lease as additional rent.

12.6 Prohibited Transfers. Notwithstanding any contrary provision of this Lease, Tenant shall have no right to make a Transfer unless on both (i) the date on which Tenant notifies Landlord of its intention to enter into a Transfer and (ii) the date on which such Transfer is to take effect, Tenant is not in default of any of its obligations under this Lease. Notwithstanding anything to the contrary contained herein, Tenant agrees that in no event shall Tenant make a Transfer to (a) any government agency; (b) any tenant, subtenant or occupant of other premises in the Property; or (c) any entity with whom Landlord shall have negotiated for space in the Property in the six (6) months immediately preceding such proposed Transfer.

12.7 Permitted Transfers. Notwithstanding the foregoing provisions of this Section 12, Tenant shall have the right to make a Transfer without Landlord's consent, but with prior written notice to Landlord, to an Affiliate (hereinafter defined). For the purposes hereof, an **"Affiliate"** shall be defined as any entity (A) that has the financial wherewithal to meet its obligations under the Transfer instrument; and (B) which is controlled by, is under common control with, or which controls Tenant. As used herein, **"control"** means direct or, either together with others acting as a group or otherwise, indirect ownership or possession of the right or power, by vote of stockholders or directors, or by contract, agreement or other arrangements, or otherwise, to direct, determine, prevent or otherwise dictate managerial, operational or other actions or activities of any such person, firm or corporation. Promptly following any Transfer to an Affiliate, Tenant shall deliver to Landlord a copy of the documentation evidencing such Transfer and an agreement by the Affiliate, assuming and agreeing to perform, fulfill and observe Tenant's obligations, covenants and agreements set forth herein.

13. INSURANCE; INDEMNIFICATION; EXCULPATION

13.1 Tenant's Insurance.

(a) Tenant shall procure, pay for and keep in force throughout the Term (and for so long thereafter as Tenant remains in occupancy of the Premises) commercial general liability insurance insuring Tenant on an occurrence basis against all claims and demands for personal injury liability (including, without limitation, bodily injury, sickness, disease, and death) or damage to property which may be claimed to have occurred from and after the time any of the Tenant Parties shall first enter the Premises, of not less than One Million Dollars ($ 1,000,000),

and from time to time thereafter shall be not less than such higher amounts, if procurable, as may be reasonably required by Landlord. Tenant shall also carry umbrella liability coverage in an amount of no less than Three Million Dollars ($3,000,000). Such policy shall also include contractual liability coverage covering Tenant's liability assumed under this Lease, including without limitation Tenant's indemnification obligations. Such insurance policy(ies) shall name Landlord, Landlord's managing agent and persons claiming by, through or under them, if any, as additional insureds.

(b) Tenant shall take out and maintain throughout the Term a policy of fire, vandalism, malicious mischief, extended coverage and so-called "all risk" coverage insurance in an amount equal to one hundred percent (100%) of the replacement cost (but not to exceed One Hundred Thousand Dollars ($100,000)) insuring (i) all items or components of Tenant's Work and Alterations (collectively, the **"Tenant-Insured Improvements")**, and (ii) Tenant's furniture, equipment, fixtures and property of every kind, nature and description related or arising out of Tenant's leasehold estate hereunder, which may be in or upon the Premises or the Building (collectively, **"Tenant's Property")**. Such insurance shall insure the interests of both Landlord and Tenant as their respective interests may appear from time to time.

(c) Tenant shall take out and maintain a policy of business interruption insurance throughout the Term sufficient to cover at least twelve (12) months of Rent due hereunder and Tenant's business losses during such 12-month period in an amount not to exceed One Hundred Thousand Dollars ($100,000).

(d) The insurance required pursuant to Sections 13.1(a), (b), and (c) (collectively, **"Tenant's Insurance Policies")** shall be effected with insurers approved by Landlord, with a rating of not less than "A-XI" in the current *Best's Insurance Reports,* and authorized to do business in the Commonwealth of Massachusetts under valid and enforceable policies. Tenant's Insurance Policies shall each provide that it shall not be canceled or modified without at least thirty (30) days' prior written notice to each insured named therein. Tenant's Insurance Policies may include deductibles in an amount no greater than the greater of $25,000 or commercially reasonable amounts. On or before the date on which any of the Tenant Parties shall first enter the Premises and thereafter not less than fifteen (15) days prior to the expiration date of each expiring policy, Tenant shall deliver to Landlord binders of Tenant's Insurance Policies issued by the respective insurers setting forth in full the provisions thereof together with evidence satisfactory to Landlord of the payment of all premiums for such policies. In the event of any claim, and upon Landlord's request, Tenant shall deliver to Landlord complete copies of Tenant's Insurance Policies. Upon request of Landlord, Tenant shall deliver to any Mortgagee copies of the foregoing documents. No deductible carried by Tenant with respect to any of the policies required under this Section 13.1 shall exceed $25,000.

13.2 Indemnification. Except to the extent caused by the gross negligence or willful misconduct of any of the Landlord Parties, Tenant shall defend, indemnify and save the Landlord Parties harmless from and against any and all Claims asserted by or on behalf of any person, firm, corporation or public authority arising from:

(a) Tenant's breach of any covenant or obligation under this Lease;

(b) Any injury to or death of any person, or loss of or damage to property, sustained or occurring in, upon, at or about the Premises;

(c) Any injury to or death of any person, or loss of or damage to property arising out of the use or occupancy of the Premises by or the negligence or willful misconduct of any of the Tenant Parties; and

(d) On account of or based upon any work or thing whatsoever done (other than by Landlord or any of the Landlord Parties) at the Premises during the Term and during the period of time, if any, prior to the Term Commencement Date that any of the Tenant Parties may have been given access to the Premises.

13.3 Property of Tenant. Tenant covenants and agrees that, to the maximum extent permitted by Legal Requirements, all of Tenant's Property at the Premises shall be at the sole risk and hazard of Tenant, and that if the whole or any part thereof shall be damaged, destroyed, stolen or removed from any cause or reason whatsoever, no part of said damage or loss shall be charged to, or borne by, Landlord, except, subject to Section 13.5 hereof, to the extent such damage or loss is due to the gross negligence or willful misconduct of any of the Landlord Parties.

13.4 Limitation of Landlord's Liability for Damage or Injury. Landlord shall not be liable for any injury or damage to persons or property resulting from fire, explosion, falling plaster, steam, gas, air contaminants or emissions, electricity, electrical or electronic emanations or disturbance, water, rain or snow or leaks from any part of the Building or from the pipes, appliances, equipment or plumbing works or from the roof, street or sub-surface or from any other place or caused by dampness, vandalism, malicious mischief or by any other cause of whatever nature, except to the extent caused by or due to the gross negligence or willful misconduct of any of the Landlord Parties, and then, where notice and an opportunity to cure are appropriate (i.e., where Tenant has an opportunity to know or should have known of such condition sufficiently in advance of the occurrence of any such injury or damage resulting therefrom as would have enabled Landlord to prevent such damage or loss had Tenant notified Landlord of such condition) only after (i) notice to Landlord of the condition claimed to constitute gross negligence or willful misconduct, and (ii) the expiration of a reasonable time after such notice has been received by Landlord without Landlord having commenced to take all reasonable and practicable means to cure or correct such condition; and pending such cure or correction by Landlord, Tenant shall take all reasonably prudent temporary measures and safeguards to prevent any injury, loss or damage to persons or property. Notwithstanding the foregoing, in no event shall any of the Landlord Parties be liable for any loss which is covered by insurance policies actually carried or required to be so carried by this Lease; nor shall any of the Landlord Parties be liable for any such damage caused by other tenants or persons in the Building or caused by operations in construction of any private, public, or quasi-public work; or shall any of the Landlord Parties be liable for any latent defect in the Premises or in the Building.

13.5 Waiver of Subrogation; Mutual Release. Landlord and Tenant each hereby waives on behalf of itself and its property insurers (none of which shall ever be assigned any such claim or be entitled thereto due to subrogation or otherwise) any and all rights of recovery, claim, action, or cause of action against the other and its agents, officers, servants, partners,

shareholders, or employees (collectively, the **"Related Parties")** for any loss or damage (other than rights of recovery, claims, actions, and causes of action relating to damage to the roof of the Building caused by Tenant) that may occur to or within the Premises or the Building or any improvements thereto, or any personal property of such party therein which is insured against under any property insurance policy actually being maintained by the waiving party from time to time, even if not required hereunder, or which would be insured against under the terms of any insurance policy required to be carried or maintained by the waiving party hereunder, whether or not such insurance coverage is actually being maintained, including, in every instance, such loss or damage that may be caused by the negligence of the other party hereto and/or its Related Parties. Landlord and Tenant each agrees to cause appropriate clauses to be included in its property insurance policies necessary to implement the foregoing provisions.

13.6 Tenant's Acts—Effect on Insurance. Tenant shall not do or permit any Tenant Party to do any act or thing upon the Premises or elsewhere in the Building which will invalidate or be in conflict with any insurance policies covering the Building and the fixtures and property therein; and shall not do, or permit to be done, any act or thing upon the Premises which shall subject Landlord to any liability or responsibility for injury to any person or persons or to property by reason of any business or operation being carried on upon said Premises or for any other reason. If by reason of the failure of Tenant to comply with the provisions hereof the insurance rate applicable to any policy of insurance shall at any time thereafter be higher than it otherwise would be, Tenant shall reimburse Landlord upon demand for that part of any insurance premiums which shall have been charged because of such failure by Tenant, together with interest at the Default Rate until paid in full, within ten (10) days after receipt of an invoice therefor.

14. CASUALTY; TAKING

14.1 Damage. If the Premises are damaged in whole or part because of fire or other insured casualty **("Casualty")**, or if the Premises are subject to a taking in connection with the exercise of any power of eminent domain, condemnation, or purchase under threat or in lieu thereof (any of the foregoing, a **"Taking")**, then unless this Lease is terminated in accordance with Section **14.2** below, Landlord shall restore the Building and/or the Premises to substantially the same condition as existed on the Term Commencement Date, or in the event of a partial Taking which affects the Building and the Premises, restore the remainder of the Building and the Premises not so Taken to substantially the same condition as is reasonably feasible. If, in Landlord's reasonable judgment, any element of the Tenant-Insured Improvements can more effectively be restored as an integral part of Landlord's restoration of the Building or the Premises, such restoration shall also be made by Landlord, but at Tenant's sole cost and expense. Subject to rights of Mortgagees, Tenant Delays, Legal Requirements then in existence and to delays for adjustment of insurance proceeds or Taking awards, as the case may be, and instances of Landlord's Force Majeure, Landlord shall substantially complete such restoration within one (1) year after Landlord's receipt of all required permits therefor with respect to substantial reconstruction of at least 50% of the Building, or, within one hundred eighty (180) days after Landlord's receipt of all required permits therefor in the case of restoration of less than 50% of the Building. Upon substantial completion of such restoration by Landlord, Tenant shall use diligent efforts to complete restoration of the Premises to substantially the same condition as existed immediately prior to such Casualty or Taking, as the case may be, as soon as reasonably

possible. Tenant agrees to cooperate with Landlord in such manner as Landlord may reasonably request to assist Landlord in collecting insurance proceeds due in connection with any Casualty which affects the Premises or the Building. In no event shall Landlord be required to expend more than the Net (hereinafter defined) insurance proceeds Landlord receives for damage to the Premises and/or the Building or the Net Taking award attributable to the Premises and/or the Building. **"Net"** means the insurance proceeds or Taking award actually paid to Landlord (and not paid over to a Mortgagee) less all costs and expenses, including adjusters and attorney's fees, of obtaining the same. In the Operating Year in which a Casualty occurs, there shall be included in Building Operating Costs Landlord's deductible under its property insurance policy. Except as Landlord may elect pursuant to this Section 14.1, under no circumstances shall Landlord be required to repair any damage to, or make any repairs to or replacements of, any Tenant-Insured Improvements.

14.2 Termination Rights.

(a) Landlord's Termination Rights. Landlord may terminate this Lease upon thirty (30) days' prior written notice to Tenant if:

(i) any material portion of the Building or any material means of access thereto is taken;

(ii) more than thirty-five percent (35%) of the Building is damaged by Casualty; or

(iii) if the estimated time to complete restoration exceeds one (1) year from the date on which Landlord receives all required permits for such restoration.

(b) Tenant's Termination Right. If Landlord is so required but fails to complete restoration of the Premises within the time frames and subject to the conditions set forth in Section 14.1 above, then Tenant may terminate this Lease upon thirty (30) days' written notice to Landlord; provided, however, that if Landlord completes such restoration within thirty (30) days after receipt of any such termination notice, such termination notice shall be null and void and this Lease shall continue in full force and effect. The remedies set forth in this Section 14.2(b) and in Section 14.2(c) below are Tenant's sole and exclusive rights and remedies based upon Landlord's failure to complete the restoration of the Premises as set forth herein.

(c) Either Party May Terminate. In the case of any Casualty or Taking affecting the Premises and occurring during the last twelve (12) months of the Term, then (i) if such Casualty or Taking results in more than twenty-five percent (25%) of the floor area of the Premises being unsuitable for the Permitted Uses, or (ii) the damage to the Premises costs more than $250,000 to restore, then either Landlord or Tenant shall have the option to terminate this Lease upon thirty (30) days' written notice to the other.

(d) Automatic Termination. In the case of a Taking of the entire Premises, then this Lease shall automatically terminate as of the date of possession by the Taking authority.

14.3 Taking for Temporary Use. If the Premises are Taken for temporary use, this Lease and Tenant's obligations, including without limitation the payment of Rent, shall continue. For purposes hereof, a **"Taking for temporary use"** shall mean a Taking of ninety (90) days or less.

14.4 Disposition of Awards. Except for any separate award for Tenant's movable trade fixtures, relocation expenses, and unamortized leasehold improvements paid for by Tenant (provided that the same may not reduce Landlord's award), all Taking awards to Landlord or Tenant shall be Landlord's property without Tenant's participation, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant may pursue its own claim against the Taking authority.

15. ESTOPPEL CERTIFICATE. Tenant shall at any time and from time to time upon not less than ten (10) days' prior notice from Landlord, execute, acknowledge and deliver to Landlord a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications), and the dates to which Rent has been paid in advance, if any, stating whether or not Landlord is in default in performance of any covenant, agreement, term, provision or condition contained in this Lease and, if so, specifying each such default, and such other facts as Landlord may reasonably request, it being intended that any such statement delivered pursuant hereto may be relied upon by any prospective purchaser of the Building or of any interest of Landlord therein, any Mortgagee or prospective Mortgagee thereof, any lessor or prospective lessor thereof, any lessee or prospective lessee thereof, or any prospective assignee of any mortgage thereof. *Time is of the essence with respect to any such requested certificate,* Tenant hereby acknowledging the importance of such certificates in mortgage financing arrangements, prospective sales and the like. If Tenant shall fail to execute and deliver to Landlord any such statement within such ten-day period, Tenant hereby appoints Landlord as Tenant's attorney-in-fact in its name and behalf to execute such statement, such appointment being coupled with an interest.

16. HAZARDOUS MATERIALS

16.1 Prohibition. Except for de minimis quantities of standard office supplies and cleaning materials stored in compliance with Environmental Laws (hereinafter defined) and in proper containers, Tenant shall not, without the prior written consent of Landlord, which may be withheld in Landlord's sole discretion, bring or permit to be brought or kept in or on the Premises or elsewhere in the Building (i) any inflammable, combustible or explosive fluid, material, chemical or substance; or (ii) any Hazardous Material (hereinafter defined). Landlord shall have the right, from time to time, to inspect the Premises for compliance with the terms of this Section 16.1 at Tenant's sole cost and expense.

16.2 Environmental Laws. For purposes hereof, **"Environmental Laws"** shall mean all laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health and safety matters, including but not limited to any discharge by any of the Tenant Parties into the air, surface water, sewers, soil or groundwater of any Hazardous Material (hereinafter defined) whether within or outside the Premises, including, without limitation (a) the Federal Water Pollution Control Act, 33 U.S.C. Section 1251 et seq., (b) the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., (c) the Comprehensive Environmental Response, Compensation and

Liability Act, 42 U.S.C. Section 9601 et seq., (d) the Toxic Substances Control Act of 1976, 15 U.S.C. Section 2601 et seq., and (e) Chapter 21E of the General Laws of Massachusetts. Tenant, at its sole cost and expense, shall comply with (i) Environmental Laws, and (ii) any rules, requirements and safety procedures of the Massachusetts Department of Environmental Protection, the City of Cambridge and any insurer of the Building or the Premises with respect to Tenant's use, storage and disposal of any Hazardous Materials.

16.3 Hazardous Material Defined. As used herein, the term **"Hazardous Material"** means asbestos, oil or any hazardous, radioactive or toxic substance, material or waste or petroleum derivative which is or becomes regulated by any Environmental Law. The term **"Hazardous Material"** includes, without limitation, oil and/or any material or substance which is (i) designated as a "hazardous substance," "hazardous material," "oil," "hazardous waste" or toxic substance under any Environmental Law.

17. RULES AND REGULATIONS.

17.1 Rules and Regulations. Tenant will faithfully observe and comply with all rules and regulations promulgated from time to time with respect to the Building, the Property and construction within the Property (collectively, the **"Rules and Regulations")**. The current version of the Rules and Regulations is attached hereto as Exhibit 7. In the case of any conflict between the provisions of this Lease and any future rules and regulations, the provisions of this Lease shall control. Nothing contained in this Lease shall be construed to impose upon Landlord any duty or obligation to enforce the Rules and Regulations or the terms, covenants or conditions in any other lease as against any other tenant and Landlord shall not be liable to Tenant for violation of the same by any other tenant, its servants, employees, agents, contractors, visitors, invitees or licensees.

17.2 Energy Conservation. Notwithstanding anything to the contrary contained herein, Landlord may institute upon written notice to Tenant such policies, programs and measures as may be necessary, required, or expedient for the conservation and/or preservation of energy or energy services (collectively, the **"Conservation Program")**, provided however, that the Conservation Program does not, by reason of such policies, programs and measures, reduce the level of energy or energy services being provided to the Premises below the level of energy or energy services then being provided in comparably aged, first-class combination office and retail buildings in the East Cambridge/ Kendall Square area, or as may be necessary or required to comply with Legal Requirements or standards or the other provisions of this Lease. Upon receipt of such notice, Tenant shall comply with the Conservation Program.

17.3 Recycling. Upon written notice, Landlord may establish policies, programs and measures for the recycling of paper, products, plastic, tin and other materials (a **"Recycling Program")**. Upon receipt of such notice, Tenant will comply with the Recycling Program at Tenant's sole cost and expense.

18. LEGAL REQUIREMENTS

Tenant shall be responsible at its sole cost and expense for complying with (and keeping the Premises in compliance with) all Legal Requirements which are applicable to Tenant's particular use or occupancy of, or Tenant's Work or Alterations made by or on behalf of Tenant to, the Premises. Tenant shall furnish all data and information to governmental authorities, with a copy to Landlord, as required in accordance with Legal Requirements as they relate to Tenant's use or occupancy of the Premises or the Building. If Tenant receives notice of any violation of Legal Requirements applicable to the Premises or the Building, it shall give prompt notice thereof to Landlord. Nothing contained in this Section 18.1 shall be construed to expand the uses permitted hereunder beyond the Permitted Uses. Landlord shall comply with any Legal Requirements and with any direction of any public office or officer relating to the maintenance or operation of the Building as a combination office and retail building, and the costs so incurred by Landlord shall be included in Building Operating Costs in accordance with the provisions of Section 5.2.

19. DEFAULT

19.1 Events of Default. The occurrence of any one or more of the following events shall constitute an **"Event of Default"** hereunder by Tenant:

(a) If Tenant fails to make any payment of Rent or any other payment required hereunder, as and when due, and such failure shall continue for a period of five (5) business days after notice thereof from Landlord to Tenant; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if (i) Tenant fails to make any payment within five (5) business days after the due date therefor, and (ii) Landlord has given Tenant written notice under this Section 19.1(a) on more than one (1) occasion during the twelve (12) month interval preceding such failure by Tenant;

(b) If Tenant shall abandon the Premises (whether or not the keys shall have been surrendered or the Rent shall have been paid);

(c) If Tenant shall fail to execute and deliver to Landlord an estoppel certificate pursuant to Section 16 above or a subordination and attornment agreement pursuant to Section 22 below, within the timeframes set forth therein;

(d) If Tenant shall fail to maintain any insurance required hereunder;

(e) If Tenant shall fail to restore the Security Deposit to its original amount or deliver a replacement Letter of Credit as required under Section 6 above;

(f) If Tenant causes or suffers any release of Hazardous Materials in, on or near the Property;

(g) If Tenant shall make a Transfer in violation of the provisions of Section 12 above, or if any event shall occur or any contingency shall arise whereby this Lease, or the term and estate thereby created, would (by operation of law or otherwise) devolve upon or pass to any person, firm or corporation other than Tenant, except as expressly permitted under Section 12 hereof;

(h) The failure by Tenant to observe or perform any of the covenants or provisions of this Lease to be observed or performed by Tenant, other than as specified above, and such failure continues for more than thirty (30) days after notice thereof from Landlord; provided, further, that if the nature of Tenant's default is such that more than thirty (30) days are reasonably required for its cure, then Tenant shall not be deemed to be in default if Tenant shall commence such cure within said thirty (30) day period and thereafter diligently prosecute such cure to completion, which completion shall occur not later than ninety (90) days from the date of such notice from Landlord;

(i) Tenant shall be involved in financial difficulties as evidenced by an admission in writing by Tenant of Tenant's inability to pay its debts generally as they become due, or by the making or offering to make a composition of its debts with its creditors;

(j) Tenant shall make an assignment or trust mortgage, or other conveyance or transfer of like nature, of all or a substantial part of its property for the benefit of its creditors,

(k) an attachment on mesne process, on execution or otherwise, or other legal process shall issue against Tenant or its property and a sale of any of its assets shall be held thereunder;

(1) any judgment, attachment or the like in excess of $100,000 shall be entered, recorded or filed against Tenant in any court, registry, etc. and Tenant shall fail to pay such judgment within thirty (30) days after the judgment shall have become final beyond appeal or to discharge or secure by surety bond such lien, attachment, etc. within thirty (30) days of such entry, recording or filing, as the case may be;

(m) the leasehold hereby created shall be taken on execution or by other process of law and shall not be revested in Tenant within thirty (30) days thereafter;

(n) a receiver, sequesterer, trustee or similar officer shall be appointed by a court of competent jurisdiction to take charge of all or any part of Tenant's Property and such appointment shall not be vacated within thirty (30) days; or

(o) any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors, and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding.

Wherever "Tenant " is used in subsections (i), (j), (k), (1), (n) or (o) of this Section 19.1, it shall be deemed to include any parent entity of Tenant and any guarantor of any of Tenant's obligations under this Lease, including Guarantor.

19.2 Remedies. Upon an Event of Default, Landlord may, by notice to Tenant, elect to terminate this Lease; and thereupon (and without prejudice to any remedies which might otherwise be available for arrears of Rent or preceding breach of covenant or agreement and without prejudice to Tenant's liability for damages as hereinafter stated), upon the giving of such notice, this Lease shall terminate as of the date specified therein as though that were the Expiration Date. Upon such termination, Landlord shall have the right to utilize the Security Deposit or draw down the entire Letter of Credit, as applicable, and apply the proceeds thereof to

its damages hereunder. Without being taken or deemed to be guilty of any manner of trespass or conversion, and without being liable to indictment, prosecution or damages therefor, Landlord may, by lawful process, enter into and upon the Premises (or any part thereof in the name of the whole); repossess the same, as of its former estate; and expel Tenant and those claiming under Tenant. The words "re-entry" and "re-enter" as used in this Lease are not restricted to their technical legal meanings.

19.3 Damages - Termination.

(a) Upon the termination of this Lease under the provisions of this Section 19, Tenant shall pay to Landlord Rent up to the time of such termination, shall continue to be liable for any preceding breach of covenant, and in addition, shall pay to Landlord as damages, at the election of Landlord, either:

(i) the amount (discounted to present value at the rate of five percent (5%) per annum) by which, at the time of the termination of this Lease (or at any time thereafter if Landlord shall have initially elected damages under Section 19.3(a)(ii) below), (x) the aggregate of Rent projected over the period commencing with such termination and ending on the Expiration Date, exceeds (y) the aggregate projected rental value of the Premises for such period, taking into account a reasonable time period during which the Premises shall be unoccupied, plus all Reletting Costs (hereinafter defined); or

(ii) amounts equal to Rent which would have been payable by Tenant had this Lease not been so terminated, payable upon the due dates therefor specified herein following such termination and until the Expiration Date, *provided, however,* if Landlord shall re-let the Premises during such period, that Landlord shall credit Tenant with the net rents received by Landlord from such re-letting, such net rents to be determined by first deducting from the gross rents as and when received by Landlord from such re-letting the expenses incurred or paid by Landlord in terminating this Lease, as well as the expenses of re-letting, including altering and preparing the Premises for new tenants, brokers' commissions, and all other similar and dissimilar expenses properly chargeable against the Premises and the rental therefrom (collectively, **"Reletting Costs")**, it being understood that any such re-letting may be for a period equal to or shorter or longer than the remaining Term; and *provided, further,* that (x) in no event shall Tenant be entitled to receive any excess of such net rents over the sums payable by Tenant to Landlord hereunder and (y) in no event shall Tenant be entitled in any suit for the collection of damages pursuant to this Section 19.3(a)(ii) to a credit in respect of any net rents from a re-letting except to the extent that such net rents are actually received by Landlord prior to the commencement of such suit. If the Premises or any part thereof should be re-let in combination with other space, then proper apportionment on a square foot area basis shall be made of the rent received from such re-letting and of the expenses of re-letting.

(b) In calculating the amount due under Section 19.2(a)(i), above, there shall be included, in addition to the Base Rent, all other considerations agreed to be paid or performed by Tenant, including without limitation Tenant's Share of the Operating Costs Excess and Tenant's Property Share of the Tax Excess, on the assumption that all such amounts and considerations would have increased at the rate of five percent (5%) per annum for the balance of the full term hereby granted.

(c) Suit or suits for the recovery of such damages, or any installments thereof, may be brought by Landlord from time to time at its election, and nothing contained herein shall be deemed to require Landlord to postpone suit until the date when the Term would have expired if it had not been terminated hereunder.

(d) Nothing herein contained shall be construed as limiting or precluding the recovery by Landlord against Tenant of any sums or damages to which, in addition to the damages particularly provided above, Landlord may lawfully be entitled by reason of any Event of Default hereunder.

(e) In lieu of any other damages or indemnity and in lieu of full recovery by Landlord of all sums payable under all the foregoing provisions of this Section 19.3, Landlord may, by written notice to Tenant, at any time after this Lease is terminated under any of the provisions herein contained or is otherwise terminated for breach of any obligation of Tenant and before such full recovery, elect to recover, and Tenant shall thereupon pay, as liquidated damages, an amount equal to the aggregate of (x) an amount equal to the lesser of (1) Rent accrued under this Lease in the twelve (12) months immediately prior to such termination, or (2) Rent payable during the remaining months of the Term if this Lease had not been terminated, plus (y) the amount of Rent accrued and unpaid at the time of termination, less (z) the amount of any recovery by Landlord under the foregoing provisions of this Section 19.3 up to the time of payment of such liquidated damages.

19.4 Landlord's Self-Help; Fees and Expenses. If Tenant shall default in the performance of any covenant on Tenant's part to be performed in this Lease contained, including without limitation the obligation to maintain the Premises in the required condition pursuant to Section 9.1 above, Landlord may, upon reasonable advance notice, except that no notice shall be required in an emergency, immediately, or at any time thereafter, perform the same for the account of Tenant. Tenant shall pay to Landlord upon demand therefor any costs incurred by Landlord in connection therewith, together with interest at the Default Rate until paid in full. In addition, Tenant shall pay all of Landlord's costs and expenses, including without limitation reasonable attorneys' fees, incurred (i) in enforcing any obligation of Tenant under this Lease or (ii) as a result of Landlord or any of the Landlord Parties, without its fault, being made party to any litigation pending by or against any of the Tenant Parties.

19.5 Waiver of Redemption, Statutory Notice and Grace Periods. Tenant does hereby waive and surrender all rights and privileges which it might have under or by reason of any present or future Legal Requirements to redeem the Premises or to have a continuance of this Lease for the Term hereby demised after being dispossessed or ejected therefrom by process of law or under the terms of this Lease or after the termination of this Lease as herein provided. Except to the extent prohibited by Legal Requirements, any statutory notice and grace periods provided to Tenant by law are hereby expressly waived by Tenant.

19.6 Landlord's Remedies Not Exclusive. The specified remedies to which Landlord may resort hereunder are cumulative and are not intended to be exclusive of any remedies or means of redress to which Landlord may at any time be lawfully entitled, and Landlord may invoke any remedy (including the remedy of specific performance) allowed at law or in equity as if specific remedies were not herein provided for.

19.7 No Waiver. Landlord's failure to seek redress for violation, or to insist upon the strict performance, of any covenant or condition of this Lease, or any of the Rules and Regulations promulgated hereunder, shall not prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by Landlord of Rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach. The failure of Landlord to enforce any of such Rules and Regulations against Tenant and/or any other tenant in the Building shall not be deemed a waiver of any such Rules and Regulations. No provisions of this Lease shall be deemed to have been waived by either party unless such waiver be in writing signed by such party. No payment by Tenant or receipt by Landlord of a lesser amount than the Rent herein stipulated shall be deemed to be other than on account of the stipulated Rent, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as Rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or pursue any other remedy in this Lease provided.

19.8 Restrictions on Tenant's Rights. During the continuation of any Event of Default, (a) Landlord shall not be obligated to provide Tenant with any notice pursuant to Sections 2.3 and 2.4 above; and (b) Tenant shall not have the right to make, nor to request Landlord's consent or approval with respect to, any Alterations or Transfers.

19.9 Landlord Default. Notwithstanding anything to the contrary contained in the Lease, Landlord shall in no event be in default in the performance of any of Landlord's obligations under this Lease unless Landlord shall have failed to perform such obligations within thirty (30) days (or such additional time as is reasonably required to correct any such default, provided Landlord commences cure within 30 days) after notice by Tenant to Landlord properly specifying wherein Landlord has failed to perform any such obligation. Except as expressly set forth in this Lease, Tenant shall not have the right to terminate or cancel this Lease or to withhold rent or to set-off or deduct any claim or damages against rent as a result of any default by Landlord or breach by Landlord of its covenants or any warranties or promises hereunder, except in the case of a wrongful eviction of Tenant from the Premises (constructive or actual) by Landlord, unless same continues after notice to Landlord thereof and a opportunity for Landlord to cure the same as set forth above. In addition, Tenant shall not assert any right to deduct the cost of repairs or any monetary claim against Landlord from rent thereafter due and payable under this Lease.

20. SURRENDER; ABANDONED PROPERTY; HOLD-OVER

20.1 Surrender

(a) Upon the expiration or earlier termination of the Term, Tenant shall (i) peaceably quit and surrender to Landlord the Premises broom clean, in good order, repair and condition excepting only ordinary wear and tear and damage by fire or other insured Casualty; (ii) remove all of Tenant's Property and, to the extent specified by Landlord, Alterations made by Tenant, and (iii) repair any damages to the Premises or the Building caused by the installation or removal of Tenant's Property and/or such Alterations. Tenant's obligations under this Section 20.1(a) shall survive the expiration or earlier termination of this Lease.

(b) No act or thing done by Landlord during the Term shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept such surrender shall be valid, unless in writing signed by Landlord. Unless otherwise agreed by the parties in writing, no employee of Landlord or of Landlord's agents shall have any power to accept the keys of the Premises prior to the expiration or earlier termination of this Lease. The delivery of keys to any employee of Landlord or of Landlord's agents shall not operate as a termination of this Lease or a surrender of the Premises.

(c) Notwithstanding anything to the contrary contained herein, Tenant shall, at its sole cost and expense, remove from the Premises, prior to the end of the Term, any item installed by or for Tenant and which, pursuant to Legal Requirements, must be removed therefrom before the Premises may be used by a subsequent tenant.

20.2 Abandoned Property. After the expiration or earlier termination hereof, if Tenant fails to remove any property from the Building or the Premises which Tenant is obligated by the terms of this Lease to remove within five (5) business days after written notice from Landlord, such property (the **"Abandoned Property")** shall be conclusively deemed to have been abandoned, and may either be retained by Landlord as its property or sold or otherwise disposed of in such manner as Landlord may see fit. If any item of Abandoned Property shall be sold, Tenant hereby agrees that Landlord may receive and retain the proceeds of such sale and apply the same, at its option, to the expenses of the sale, the cost of moving and storage, any damages to which Landlord may be entitled under Section 19 hereof or pursuant to law, and to any arrears of Rent.

20.3 Holdover. If any of the Tenant Parties holds over after the end of the Term, Tenant shall be deemed a tenant-at-sufferance subject to the provisions of this Lease; provided that whether or not Landlord has previously accepted payments of Rent from Tenant, (i) Tenant shall pay Base Rent at 200% of the highest rate of Base Rent payable during the Term, (ii) Tenant shall continue to pay to Landlord all additional rent, and (iii) Tenant shall be liable for all damages, including without limitation lost business and consequential damages, incurred by Landlord as a result of such holding over, Tenant hereby acknowledging that Landlord may need the Premises after the end of the Term for other tenants and that the damages which Landlord may suffer as the result of Tenant's holding over cannot be determined as of the Execution Date. Nothing contained herein shall grant Tenant the right to holdover after the expiration or earlier termination of the Term.

21. MORTGAGEE RIGHTS

21.1 Subordination. Tenant's rights and interests under this Lease shall be (i) subject and subordinate to any ground lease, and to any mortgages, deeds of trust, overleases, or similar instruments covering the Premises, the Building and/or the Land and to all advances, modifications, renewals, replacements, and extensions thereof (each of the foregoing, a **"Mortgage")** including without limitation the Master Lease, or (ii) if any Mortgagee elects, prior to the lien of any present or future Mortgage. Tenant further shall attorn to and recognize any successor landlord, whether through foreclosure or otherwise, as if the successor landlord were the originally named landlord. The provisions of this Section 21.1 shall be self-operative and no further instrument shall be required to effect such subordination or attornment; however, Tenant agrees to execute, acknowledge and deliver such instruments, confirming such subordination and attornment in such form as shall be requested by any such holder within fifteen (15) days of request therefor.

21.2 Notices. Tenant shall give each Mortgagee the same notices given to Landlord concurrently with the notice to Landlord, and each Mortgagee shall have a reasonable opportunity thereafter to cure a Landlord default, and Mortgagee's curing of any of Landlord's default shall be treated as performance by Landlord.

21.3 Mortgagee Consent. Tenant acknowledges that, where applicable, any consent or approval hereafter given by Landlord may be subject to the further consent or approval of a Mortgagee; and the failure or refusal of such Mortgagee to give such consent or approval shall, notwithstanding anything to the contrary in this Lease contained, constitute reasonable justification for Landlord's withholding its consent or approval.

21.4 Mortgagee Liability. Tenant acknowledges and agrees that if any Mortgage shall be foreclosed, (a) the liability of the Mortgagee and its successors and assigns shall exist only so long as such Mortgagee or purchaser is the owner of the Premises, and such liability shall not continue or survive after further transfer of ownership; and (b) such Mortgagee and its successors or assigns shall not be (i) liable for any act or omission of any prior lessor under this Lease; (ii) liable for the performance of Landlord's covenants pursuant to the provisions of this Lease which arise and accrue prior to such entity succeeding to the interest of Landlord under this Lease or acquiring such right to possession; (iii) subject to any offsets or defense which Tenant may have at any time against Landlord; (iv) bound by any base rent or other sum which Tenant may have paid previously for more than one (1) month; or (v) liable for the performance of any covenant of Landlord under this Lease which is capable of performance only by the original Landlord.

22. QUIET ENJOYMENT. Landlord covenants that so long as Tenant keeps and performs each and every covenant, agreement, term, provision and condition herein contained on the part and on behalf of Tenant to be kept and performed, Tenant shall peaceably and quietly hold, occupy and enjoy the Premises during the Term from and against the claims of all persons lawfully claiming by, through or under Landlord subject, nevertheless, to the covenants, agreements, terms, provisions and conditions of this Lease, any matters of record or of which Tenant has knowledge and to any Mortgage to which this Lease is subject and subordinate, as hereinabove set forth.

23. NOTICES. Any notice, consent, request, bill, demand or statement hereunder (each, a **"Notice")** by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered by hand or by nationally recognized overnight courier (in either case with evidence of delivery or refusal thereof) addressed as follows:

If to Landlord:

MIT One Broadway LLC
c/o Massachusetts Institute of Technology
238 Main Street, Suite 200
Cambridge, MA 02142
Attention: Steven C. Marsh

With copies to:	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 Attention: Daniel D. Sullivan, Esquire
and:	Colliers Meredith & Grew 12 Emily Street Cambridge, MA 02139 Attention: Kristina Descoteaux
if to Tenant:	Zafgen, Inc. 1 Cambridge Center, Suite 702 Cambridge, MA 02142 Attention: Matthias Jaffe

Notwithstanding the foregoing, any notice from Landlord to Tenant regarding ordinary business operations (e.g., exercise of a right of access to the Premises, maintenance activities, invoices, etc.) may also be given by written notice delivered by facsimile to any person at the Premises whom Landlord reasonably believes is authorized to receive such notice on behalf of Tenant without copies as specified above. Either party may at any time change the address or specify an additional address for such Notices by delivering or mailing, as aforesaid, to the other party a notice stating the change and setting forth the changed or additional address, provided such changed or additional address is within the United States. Notices shall be effective upon the date of receipt or refusal thereof.

24. MISCELLANEOUS

24.1 Separability. If any provision of this Lease or portion of such provision or the application thereof to any person or circumstance is for any reason held invalid or unenforceable, the remainder of this Lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

24.2 Captions. The captions are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Lease nor the intent of any provisions thereof.

24.3 Broker. Tenant and Landlord each warrants and represents that it has dealt with no broker in connection with the consummation of this Lease other than Colliers International (**"Broker")**. Tenant and Landlord each agrees to defend, indemnify and save the other harmless from and against any Claims arising in breach of the representation and warranty set forth in the immediately preceding sentence. Landlord shall be solely responsible for the payment of any brokerage commissions to Broker.

24.4 Entire Agreement. This Lease, Lease Summary Sheet and Exhibits 1-7 attached hereto and incorporated herein contain the entire and only agreement between the parties and any and all statements and representations, written and oral, including previous correspondence and agreements between the parties hereto, are merged herein. Tenant acknowledges that all representations and statements upon which it relied in executing this Lease are contained herein and that Tenant in no way relied upon any other statements or representations, written or oral. This Lease may not be modified orally or in any manner other than by written agreement signed by the parties hereto.

24.5 Governing Law. This Lease is made pursuant to, and shall be governed by, and construed in accordance with, the laws of the Commonwealth of Massachusetts and any applicable local municipal rules, regulations, by-laws, ordinances and the like.

24.6 Representation of Authority. By his or her execution hereof, each of the signatories on behalf of the respective parties hereby warrants and represents to the other that he or she is duly authorized to execute this Lease on behalf of such party. Upon Landlord's request, Tenant shall provide Landlord with evidence that any requisite resolution, corporate authority and any other necessary consents have been duly adopted and obtained.

24.7 Expenses Incurred by Landlord Upon Tenant Requests. Tenant shall, upon demand, reimburse Landlord for all reasonable out-of-pocket costs and expenses, including, without limitation, legal fees, incurred by Landlord in connection with all requests by Tenant for consents, approvals or execution of collateral documentation related to this Lease, including, without limitation, costs incurred by Landlord in the review and approval of Tenant's plans and specifications in connection with proposed Alterations (including without limitation Tenant's Work) to be made by Tenant to the Premises or in connection with requests by Tenant for Landlord's consent to make a Transfer. Such costs shall be deemed to be additional rent under this Lease.

24.8 Survival. Without limiting any other obligation of Tenant which may survive the expiration or prior termination of the Term, all obligations on the part of Tenant to indemnify, defend, or hold Landlord harmless, as set forth in this Lease shall survive the expiration or prior termination of the Term.

24.9 Limitation of Liability. Tenant shall neither assert nor seek to enforce any claim against Landlord or any of the Landlord Parties, or the assets of any of the Landlord Parties, for breach of this Lease or otherwise, other than against Landlord's interest in the Building and in the uncollected rents, issues and profits thereof, and Tenant agrees to look solely to such interest for the satisfaction of any liability of Landlord under this Lease. This Section 24.9 shall not limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord. **Landlord and Tenant specifically agree that in no event shall any officer, director, trustee, employee or representative of Landlord or any of the other Landlord Parties ever be personally liable for any obligation under this Lease, nor shall Landlord or any of the other Landlord Parties be liable for consequential or incidental damages or for lost profits whatsoever in connection with this Lease.**

24.10 Binding Effect. The covenants, agreements, terms, provisions and conditions of this Lease shall bind and benefit the successors and assigns of the parties hereto with the same effect as if mentioned in each instance where a party hereto is named or referred to, except that no violation of the provisions of Section 12 hereof shall operate to vest any rights in any successor or assignee of Tenant.

24.11 Landlord Obligations upon Transfer. Upon any sale, transfer or other disposition of the Building, Landlord shall be entirely freed and relieved from the performance and observance thereafter of all covenants and obligations hereunder on the part of Landlord to be performed and observed, it being understood and agreed in such event (and it shall be deemed and construed as a covenant running with the land) that the person succeeding to Landlord's ownership of said reversionary interest shall thereupon and thereafter assume, and perform and observe, any and all of such covenants and obligations of Landlord, except as otherwise agreed in writing.

24.12 No Grant of Interest. Tenant shall not grant any interest whatsoever in (a) any fixtures within the Premises or (b) any item paid in whole or in part with Landlord's Contribution without the consent of Landlord.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF the parties hereto have executed this Lease as a sealed instrument as of the Execution Date.

LANDLORD

MIT ONE BROADWAY LLC, a Massachusetts limited liability company

By: Massachusetts Institute of Technology, its manager

By: MIT Investment Management Company, its authorized agent

By: /s/ Seth D. Alexander
Seth D. Alexander, President

TENANT

ZAFGEN, INC.

By: /s/ Matthias Jaffe
Name: Matthias Jaffe
Title: CFO

EXHIBIT 1

LEASE PLAN

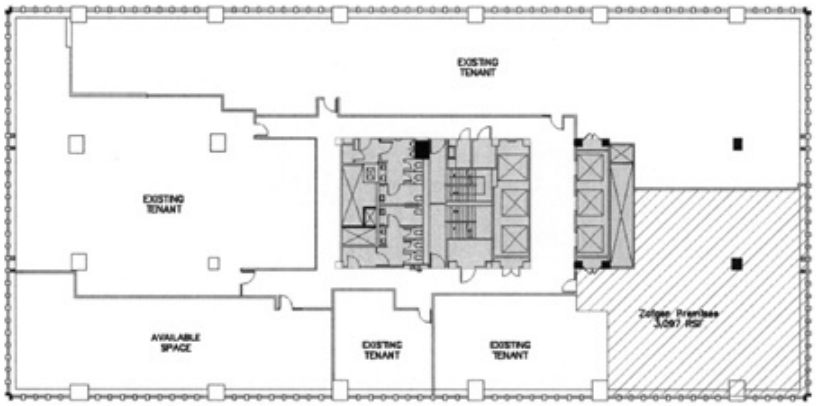


EXHIBIT 2

LEGAL DESCRIPTION

PARCEL ONE

That certain parcel of land in Cambridge, Middlesex County, Massachusetts with the buildings thereon, bounded and described as follows:

NORTHWESTERLY	by Third Street, 183.22 feet;
NORTHWESTERLY, WESTERLY and SOUTHWESTERLY	by a curved line forming the intersection of Third Street and Broadway, 23.6 feet;
SOUTHWESTERLY	by Broadway, 274.06 feet;
SOUTHERLY	by Main Street, 187.03 feet;
EASTERLY	by land formerly of Eugene R. Luke, 224.71 feet; and
SOUTHEASTERLY	by Broad Canal, 377.82 feet.

The Parcel is shown on a plan entitled “Broadway and Third Street Cambridge Mass. Mass Wharf Fuel Oil Terminal Property Lie and Topographic Survey” dated November 24, 1965 and filed with the Middlesex South District Registry of Deeds as Plan No. 3 of 1966 at the End of Book 11021 and containing, according to the plan, 97,652 square feet.

PARCEL TWO

The parcel of land in the City of Cambridge, Middlesex County, Massachusetts, shown as Parcel I on a plan entitled “Cambridge Redevelopment Authority, Broad Canal Project Area, Subdivision Plan of Land, Parcels I and II” by Fay, Spofford & Thorndike, Inc., Engineers, dated April 1971 and filed as Plan No. 966 of 1972 in Book 12268, Page 606, and bounded and described as follows:

Beginning at a point on the easterly sideline of Third Street, said point being 183.22 feet N 29°37’59” E of the northerly end of a curved line forming the easterly junction of Broadway and Third Street, and said point being the intersection of the easterly sideline of Third Street and the northerly boundary of land now or formerly of Adrian J. Broggini, William C. Rousseau and John C. Starr, Trustees of Cambridge Enterprises;

Thence, running N°29 37’59” E along the easterly sideline of Third Street, 52.37 feet to a point;

Thence, turning and running S 72°29’51” E by Parcel II, 365.41 feet to a point;

Thence, turning and running S 15°50’38” W by Broad Canal, 46.32 feet to a point;

Thence, turning and running N 74°09’02” W by land now or formerly of Adrian J. Broggini, William C. Rousseau and John C. Starr, Trustees of Cambridge Enterprises, 153.99 feet to a point;

Thence, turning and running N 73°02’45” W again by land now or formerly of Adrian J. Broggini, William C. Rousseau and John C. Starr, Trustees of Cambridge Enterprises, 47.29 feet to a point;

Thence, turning and running N 72°29’51” W again by land now or formerly of Adrian J. Broggini, William C. Rousseau and John C. Starr, Trustees of Cambridge Enterprises, 176.54 feet to the point of beginning.

Containing 18,606 square feet, more or less, according to the aforementioned plan.

Said Second Parcel is conveyed subject to the covenants, agreements, and easements contained or referred to in the 1972 Deed, to the extent still in force and effect.

For Grantor’s title to the above Parcels, see that certain Quitclaim Deed of Raytheon Engineers & Constructors International, Inc. (“International”) to the Massachusetts Institute of Technology, dated December 18, 1998, recorded with said Deeds in Book 29546, at Page 71, and filed with said Registry District as Document No. 1090310.

EXHIBIT 3

PLAN OF LANDLORD'S WORK

EXHIBIT 4

INTENTIONALLY OMITTED

EXHIBIT 5

ALTERATIONS CHECKLIST

Scope letter describing project, design/construction team, and appropriate vendors.

Insurance certificate(s) for Contractors.

Construction Documents (CDs) - Plans and Specifications - stamped by licensed AIA.

Code Review by licensed code engineer incorporated in CDs and/or by stamped letter.

- Code specific - accessibility.
- Code specific - egress paths/exits (numbers, locations, distance).
- Code specific - fire protection, sprinkler distribution, horns/strobes/signage locations.

Landlord Approved architect, MEPFP engineer, code engineer, structural engineer.

Building permit application.

- Signatures by Architect, Licensed Construction Supervisor.

Cost Affidavit with backup estimate from contractor.

Architect Affidavit.

MEP Affidavit.

FP Affidavit.

Structural Affidavit.

Construction Cost Affidavit.

Low Voltage Wiring Within Premises:

- Insurance certificate(s) for Contractor, if applicable
- If installer is employee, copy of valid government issued electrical license
- Code Review by licensed code engineer
- permit application as requested by Inspectional Services Department.
  - Signature by Licensed Professional (electrician)

Ethernet wiring within Premises:

- Insurance certificate(s) for Contractor, if applicable
- If installer is employee, copy of valid government issued electrical license (to the extent legally required)
- Code Review by licensed code engineer
- permit application as requested by Inspectional Services Department.
  - Signature by Licensed Professional (electrician) to the extent legally required

EXHIBIT 6

LANDLORD'S SERVICES

1. Landlord shall provide cleaning of the Premises and the Common Areas in a manner substantially comparable to other first-class combination office and retail facilities in the East Cambridge/ Kendall Square area.

2. Extermination of all public and tenanted areas of the Building as reasonably necessary.

3. Trash removal. Such trash removal shall not include removal of excessive trash generated when an occupant moves in or out of the Building, when equipment is discarded, when files are purged, or construction related trash and debris.

4. Snow and ice removal from the sidewalks and driveways appurtenant to the Building as reasonably necessary for the normal operation of the Building.

5. Security for the Building as reasonably determined by Landlord.

6. Subject to Landlord's Force Majeure, Landlord shall make available 6 watts of electricity per usable square foot of the Premises.

EXHIBIT 7

RULES AND REGULATIONS

1. Tenants and their employees, shall not in any way obstruct the sidewalks, halls, stairways, or elevators of the Building, and shall use the same only as a means of passage to and from their respective offices. Tenants will not place or allow to be placed in the Building corridors or public stairways any waste paper, dust, refuse, or anything whatever. At no time shall tenants permit their employees to loiter in Common Areas or elsewhere in and about the Building or the Land.

2. No signs, advertisements or notices shall be inscribed, painted or affixed where they can be seen from the outside the leased premises without prior written consent of Building management. Management reserves the right to prohibit the posting of any sign which it finds objectionable and to remove any which has already been placed, at the tenant's expense.

3. All contractors, contractor's representatives, and installation technicians performing work in the Building shall be subject to Landlord's prior approval which shall not be unreasonably withheld or delayed and shall be required to comply with Landlord's standard rules, regulations, policies and procedures, as the same may be revised from time to time. Tenants shall be solely responsible for complying with all applicable laws, codes and ordinances pursuant to which said work shall be performed.

4. All electric and telephone wiring shall be installed as directed by Landlord. No boring or cutting for wires shall be executed and no new pipes or wires shall be introduced without the prior written consent of Landlord.

5. Tenants shall not install or use any machinery in the demised premises which may cause any noise, jar, or tremor to the floors or walls, or which by its weight might damage the floors of the Building.

6. Tenants shall not bring in or take out, position construct, install or move any safe, or business machine or other heavy equipment weighing over 100 pounds without the prior written consent of Landlord.

7. All furniture, safes, equipment and freight shall be moved into and out of the Building only at certain hours approved by and under the supervision of Landlord and according to these rules and regulations. All damage to the Building caused by installing or removing any safe, furniture; equipment or other property shall be repaired at the expense of the Tenant. Landlord will not be responsible for loss or damage to any furniture, equipment or freight from any cause.

8. Corridor doors, when not in use, shall be kept closed.

9. Tenant, Tenant's agents and employees shall not: play any musical instruments, other than radio and television; make or permit any improper noises in the Building; interfere with other lessees or those having business with them.

10. No animals, except Seeing Eye dogs, shall be brought into or kept in, on or about the Premises.

11. The restroom fixtures shall be used only for the purpose for which they were constructed and no rubbish, ashes, or other substances of any kind shall be thrown into them. Tenant will bear the expense of any damage resulting from misuse.

12. Tenant shall not place any additional lock or locks on any exterior door in the Premises or Building or on any door in the Building core within the Premises, including doors providing access to the telephone and electric closets and the slop sink, without Landlord's prior written consent. A reasonable number of keys to the locks on the doors in the Premises shall be furnished by Landlord to Tenant at the cost of Tenant, and Tenant shall not have any duplicate keys made. All keys shall be returned to Landlord at the expiration or earlier termination of this Lease.

13. The directory board in the entrance lobby of the Building is provided for the exclusive display of the name and location of each tenant at the tenant's expense. Landlord reserves the right to allocate space in the directory and to design style of such identification.

14. Landlord reserves the right to exclude or expel from the Building any persons who, in the judgment of Landlord, is intoxicated under the influence of liquor or drugs, or shall do any act in violation of the rules and regulations of the Building.

15. Rooms used in common by tenants shall be subject to such regulations as are posted therein.

16. Landlord reserves the right to close and keep locked all entrance and exit doors of the Building during the hours Landlord may deem advisable for the adequate protection of the property. Use of the Building and the leased premises before 8 AM or after 6 PM, or any time during Sundays or legal holidays shall be allowed only to persons with a key/card key to the premises or guests accompanied by such persons. At these times, all occupants and their guests must sign in at the concierge when entering and exiting the building. Any persons found in the Building after hours without such keys/card keys are subject to the surveillance of building staff.

17. Landlord shall have the right to prohibit any advertising by an agent which, in Landlord's opinion, tends to impair the reputation of the Building or its desirability as a Building for offices, and upon written notice from Landlord, such tenant shall refrain from or discontinue such advertising.

18. No tenant will install blinds, shades, awnings, or other form of inside or outside window covering, or window ventilators or similar devices without the prior consent of Landlord. Tenant will not interfere with or obstruct any perimeter heating, air conditioning or ventilating units.

19. Tenants shall give Landlord prompt notice of any accidents to or defects in water pipes, gas pipes, electric lights and fixtures, heating apparatus, or any other service equipment.

20. Tenants shall not perform improvements or alterations within the Building or their premises, if the work has the potential of disturbing the fireproofing which has been applied on the surfaces of structural steel members, without the prior written consent of Landlord.

21. Tenants shall not take any action which would violate Landlord's labor contracts affecting the Building or which would cause any work stoppage, picketing, labor disruption or dispute, or any interference with the business of Landlord or any other tenant or occupant of the Building or with the right and privileges of any person lawfully in the Building. Tenants shall take any actions necessary to resolve any such work stoppage, picketing, labor disruption, dispute or interference and shall have pickets removed and, at the request of Landlord, immediately terminate at any time any construction work being performed in the Premises giving rise to such labor problems, until such time as Landlord shall have given its written consent for such work to resume. Tenants shall have no claim for damages of any nature against Landlord in connection therewith, nor shall the date of the commencement of the Term be extended as a result thereof.

22. Tenants shall utilize the termite and pest extermination service designated by Landlord to control termites and pests in the Premises. Except as included in Landlord's Services, tenants shall bear the cost and expense of such extermination services.

23. Tenants shall not install, operate or maintain in the Premises or in any other area of the Building, any electrical equipment which does not bear the U/L (Underwriters Laboratories) seal of approval, or which would overload the electrical system or any part thereof beyond its capacity for proper, efficient and safe operation as determined by Landlord, taking into consideration the overall electrical system and the present and future requirements therefore in the Building. Tenants shall not furnish any cooling or heating to the Premises, including, without limitation, the use of any electronic or gas heating devices, without Landlord's prior written consent. Tenants shall not use more than its proportionate share of telephone lines available to service the Building.

24. Tenants shall not operate or permit to be operated on the Premises any coin or token operated vending machine or similar device (including, without limitation, telephones, lockers, toilets, scales, amusement devices and machines for sale of beverages food, candy, cigarettes or other goods), except for those vending machines or similar devices which are for the sole and exclusive use of tenant's employees, and then only if such operation does not violate the lease of any other lessee of the Building.

25. Bicycles and other vehicles are not permitted inside or on the walkways outside the Building, except in those areas specifically designated by Landlord for such purposes. Landlord shall provide bicycle racks in the garage.

26. Landlord may from time to time adopt appropriate systems and procedures for the security or safety of the Building, its occupants, entry and use, or its contents, provided that Tenant shall have access to the Building 24 hours per day, 7 days a week. Tenant, Tenant's agents, employees, contractors, guests and invitees shall comply with Landlord's reasonable requirements relative thereto. As of the Execution Date of this Lease, Landlord provides for a main lobby security station which is staffed 24 hours per day, 7 days per week.

27. Tenants shall carry out Tenant's permitted repair, maintenance, alterations, and improvements in the Premises only during times agreed to in advance by Landlord and in a manner which will not interfere with the rights of other lessees in the Building.

28. Canvassing, soliciting, and peddling in or about the Building is prohibited. Tenants shall cooperate and use best efforts to prevent the same.

29. At no time shall Tenants permit or shall Tenant's agents, employees, contractors, guests, or invitees smoke in any Common Area of the Building, unless such Common Area has been declared a designated smoking area by Landlord.

30. All deliveries to or from the Premises shall be made only at such times, in the areas and through the entrances and exits designated for such purposes by Landlord. Tenant shall not permit the process of receiving deliveries to or from the Premises outside of said areas or in a manner which may interfere with the use by any other lessee of its premises or of any Common Areas, any pedestrian use of such area, or any use which is inconsistent with good business practice.

31. The work of cleaning personnel shall not be hindered by tenants after 5:30 PM, and such cleaning work may be done at any time when the offices are vacant. Windows, doors and fixtures may be cleaned at any time. Tenants shall provide adequate waste and rubbish receptacles necessary to prevent unreasonable hardship to Landlord regarding cleaning service.

32. Tenant shall, at its sole cost and expense: keep any garbage, trash, rubbish and refuse (collectively, "**Trash**") in vermin-proof containers within the interior of the Premises until removed.

FIRST AMENDMENT TO LEASE

This First Amendment to Lease (this **"First Amendment"**) is made as of June 20, 2013 by and between MIT ONE BROADWAY LLC, a Massachusetts limited liability company with an address c/o MIT Investment Management Company, 238 Main Street, Suite 200, Cambridge, MA 02142 (**"Landlord"**), and ZAFGEN, INC., a Delaware corporation with an address of One Broadway, 8 th Floor, Cambridge, MA 02142 (**"Tenant"**).

WITNESSETH

WHEREAS, Landlord and Tenant executed that certain Lease dated as of July 8, 2011 (the **"Lease"**), pursuant to which Landlord is leasing to Tenant approximately 3,097 rentable square feet (as more particularly described in the Lease, the **"Original Space"**) located on the eighth (8th) floor of the building located at One Broadway, Cambridge, MA (the "**Building**");

WHEREAS, the term of the Lease is scheduled to expire on July 31, 2013;

WHEREAS, Landlord and Tenant have agreed to relocate the Premises from the Original Space to certain space containing approximately 2,625 rentable square feet on the eighth (8th) floor of the Building (as more particularly shown on the plan attached hereto as Exhibit A, the "**New Premises**"); and

WHEREAS, subject to the terms hereinafter set forth, Landlord and Tenant wish to extend the term of the Lease for a period of six (6) months commencing on August 1, 2013 and, unless earlier terminated in accordance with the terms of the Lease, expiring on January 31, 2014 (the " **Extended Term**").

NOW, THEREFORE, in consideration of the covenants herein reserved and contained, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. Recitals; Capitalized Terms. The foregoing recitals are hereby incorporated by reference. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Lease.

2. New Premises Work.

(a) Subject to delays due to Landlord's Force Majeure and Tenant Delays, Landlord, at Landlord's sole cost and expense, shall use reasonable speed and diligence in the construction of the work (the " **New Premises Work**") more particularly described in the Final Plans so as to have the New Premises Work Substantially Complete on or before July 29, 2013. The New Premises Work shall include as per the space plan attached hereto as Exhibit B (the "**Space Plan**"), without limitation, the following: (i) kitchenette (with new stainless steel refrigerator, dishwasher and sink and new upper and lower cabinets and work surface) (Note that Lessee's coffee makers(s) and water filtration system, if any, shall be relocated from the Original Space to the New Premises in connection with the relocation of Lessee); (ii) server room, (iii) copy room area, (iv) main conference room, (v) new partitions and/or demolition, (vi) mechanical, electrical, lighting, and plumbing work, (vii) new paint, carpet, signage, (viii) wall mounting of cabinets, the same number of white boards as in the Original Space and art work, etc., (ix) new modular furniture as necessary to fit the layout of the New Premises, and (x) architectural/engineering fees.

(b) In connection with the performance of the New Premises Work, Landlord has prepared, and Tenant has approved, the Space Plan. Landlord shall submit to Tenant for Tenant's approval (A) a set of design/ development plans (the "**Design/ Development Plans**") consistent with the Space Plan, and (B) after approval (or deemed approval) of the Design/Development Plans, a full set of construction drawings ("**Final Construction Drawings**"). The Final Construction Drawings approved (or deemed approved) by Tenant are referred to herein as the "**Final Plans**." Tenant's approval of the Design/Development Plans (and the Final Construction Drawings, provided that the Final Construction Drawings are consistent with

the approved (or deemed approved) Design/Development Plans), shall not be unreasonably withheld, conditioned or delayed. Tenant agrees to respond to any request for approval of the Plans within five (5) business days after receipt thereof; provided, however, that if Tenant fails to respond to any request for approval of the Plans within five (5) business days after receipt thereof, Tenant shall be deemed to have given its approval.

(c) The New Premises Work shall be deemed "**Substantially Complete**" on the date that all of the New Premises Work has been completed in accordance with the Final Plans except for Punchlist Items. Promptly following delivery of the New Premises to Tenant with the New Premises Work Substantially Complete, Landlord and Tenant shall meet and confirm the list (the "**Punchlist**") of outstanding items which need to be performed to complete the New Premises Work (the "**Punchlist Items**") and which shall not materially adversely affect Tenant's ability to use the Premises for the normal conduct of business. Subject to Landlord's Force Majeure and Tenant Delays, Landlord shall complete all Punchlist Items within thirty (30) days of the date of the Punchlist.

(d) Landlord shall keep Tenant reasonably informed regarding the anticipated date of substantial completion of the New Premises Work.

3. Relocation.

(a) Landlord shall, at Landlord's expense, relocate Tenant to the New Premises (including without limitation IT/data wiring and relocation of in-place telephone system (including wiring)), which relocation shall occur over a weekend no earlier than, and within ten (10) business days after, Substantial Completion of the New Premises Work (the date on which Landlord substantially completes such relocation, the "**New Premises Commencement Date**"). Landlord shall use reasonable efforts to minimize any disruption to Tenant's business during such relocation, particularly as it relates to Tenant's servers and information technology.

(b) Immediately upon Landlord's relocation of Tenant to the New Premises, which is anticipated to occur over the weekend of July 27-28, 2013, Lessee shall surrender the Original Space in vacant, broom clean condition, and otherwise in its current as-is condition.

(c) From and after the New Premises Commencement Date, all references in the Lease to the Premises shall be deemed to refer to the New Premises.

(d) Subject to Landlord's obligation to perform the New Premises Work and deliver the New Premises to Tenant with all building systems and equipment serving the New Premises in good operating order and condition, Tenant acknowledges and agrees that Tenant is leasing the New Premises in their "**AS IS**," "**WHERE IS**" condition and with all faults on the New Premises Commencement Date, without representations or warranties, express or implied, in fact or by law, of any kind. Notwithstanding the foregoing, Landlord warrants to Tenant that the New Premises Work will be free from defects. Any portion of the New Premises Work not conforming to the foregoing requirements, including substitutions not properly approved and authorized, may be considered defective. Landlord's warranty excludes remedy for damage or defect caused by abuse, modifications not made by Landlord, improper or insufficient maintenance (other than by Landlord, where Landlord is required to perform maintenance on the item or system in question), improper operation (other than by Landlord, where Landlord operates the item or system in question), or normal wear and tear. Landlord shall be deemed to have satisfied all of its obligations under Sections 2 and 3 of this First Amendment (including, without limitation, Landlord's warranty obligations under this Section 3(d)) except to the extent that, on or before the date (the "**Warranty Expiration Date**") which is one hundred twenty (120) days after the New Premises Commencement Date, *time being of the essence*, Tenant gives a reasonably detailed written notice to Landlord. Landlord agrees that it shall, without cost to Tenant, correct any portion of the New Premises Work which is found not to be in accordance with the requirements of the warranties set forth in this Section 3(d), provided that Tenant gives Landlord written notice of such condition promptly after it becomes aware of such condition, and in any event on or before the Warranty Expiration Date.

4. Extension of Term. The Term of the Lease is hereby extended for the Extended Term on all of the terms and conditions of the Lease except to the extent expressly set forth in this First Amendment.

5. Base Rent. During the Extended Term, Tenant shall pay Base Rent, in accordance with Section 4 of the Lease, in the amount of (a) $0.00 with respect to the period commencing on the New Premises Commencement Date through and including the date which is immediately preceding the New Premises Rent Commencement Date (such 2-month period, the "**Free Rent Period**"), and (b) $9,187.50 per month with respect to the period commencing on the New Premises Rent Commencement Date through and including January 31, 2014, prorated for partial months. For purposes hereof, the " **New Premises Rent Commencement Date**" shall mean the date which is two (2) months after the New Premises Commencement Date.

6. Operating Costs and Taxes. Tenant shall have no obligation to pay additional rent on account of Operating Costs or Taxes with respect to the Free Rent Period. Commencing on the New Premises Rent Commencement Date, (a) Tenant's Building Share shall be 0.84%, (b) Tenant's Property Share shall be 0.84%, and (c) Tenant shall pay additional rent on account of Operating Costs and Taxes in accordance with Section 5 of the Lease.

7. Further Rights to Extend. Provided there is no uncured Event of Default at the commencement of the applicable Additional Term (hereinafter defined), Tenant shall have the option to extend the Term for two (2) additional terms of six (6) months each (each, an " **Additional Term**"), commencing as of February 1,2014 and August 1,2014, respectively. Tenant must exercise such option to extend by giving Landlord written notice (the " **Extension Notice**") on or before the date that is thirty (30) days prior to the expiration of the then-current term of this Lease, time being of the essence. Upon the timely giving of such notice, the Term shall be deemed extended upon all of the terms and conditions of this Lease, except that Landlord shall have no obligation to construct or renovate the Premises and Tenant shall have one fewer right to extend the Term. If Tenant fails to give timely notice, as aforesaid, Tenant shall have no further right to extend the Term.

8. Tenant's Termination Right. Tenant shall have the right, at any time during the Extended Term or any Additional Term, to terminate the Lease upon at least thirty (30) days' prior written notice to Landlord.

9. Confidentiality. Tenant agrees that, except as provided by law or unless compelled by an order of a court of competent jurisdiction, it shall keep the contents of the Lease and this First Amendment and any information related to the transaction contemplated hereby confidential and shall not disclose such information to any third parties. Notwithstanding the foregoing, Tenant shall have the right to disclose such information to its employees, attorneys, accountants, consultants and investors (provided that Tenant shall instruct in writing the aforesaid parties to maintain the confidentiality of such information and shall obtain each party's written acknowledgement of such requirement). The provisions of this Section 9 shall survive the expiration or any earlier termination of the Lease.

10. Broker. Tenant and Landlord each warrants and represents that it has dealt with no broker in connection with the consummation of this First Amendment other than Colliers International ("**Broker**"). Tenant and Landlord each agrees to defend, indemnify and save the other harmless from and against any Claims arising in breach of the representation and warranty set forth in the immediately preceding sentence. Landlord shall be solely responsible for the payment of any brokerage commissions to Broker.

11. Ratification. Except as amended hereby, the terms and conditions of the Lease shall remain unaffected. From and after the date hereof, all references to the Lease shall mean the Lease as amended hereby. Additionally, Landlord and Tenant each confirms and ratifies that, as of the date hereof and to its actual knowledge, (a) the Lease is and remains in good standing and in full force and effect, and (b) neither party has any claims, counterclaims, set-offs or defenses against the other party arising out of the Lease or the Premises or in any way relating thereto.

12. Miscellaneous. If any term of this First Amendment or the application thereof to any person or circumstances shall be invalid and unenforceable, the remaining provisions of this First Amendment, the application or such term to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected. This First Amendment is binding upon and shall inure to the benefit of Landlord and Tenant and their respective successors and assigns. Each party has cooperated in the drafting and preparation of this First Amendment and, therefore, in any construction to be made of this First Amendment, the same shall not be construed against either party. In the event of litigation relating to this First Amendment, the prevailing party shall be entitled to reimbursement from the other party of its reasonable attorneys' fees and costs. This First Amendment constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions, and may not be amended, waived, discharged or terminated except by a written instrument signed by all the parties hereto.

[signatures on following page]

[SIGNATURE PAGE TO FIRST AMENDMENT TO LEASE BY AND BETWEEN
MIT ONE BROADWAY LLC AND ZAFGEN, INC.]

EXECUTED under seal as of the date first set forth above.

LANDLORD: MIT ONE BROADWAY LLC

By: Massachusetts Institute of Technology, its manager

By: MIT Investment Management Company, its authorized agent

By: /s/ Seth D. Alexander
Seth D. Alexander, President

TENANT: ZAFGEN, INC.

By: /s/ Patricia L Allen
Name: Patricia L Allen
Title: CFO

EXHIBIT A
PLAN OF NEW PREMISES

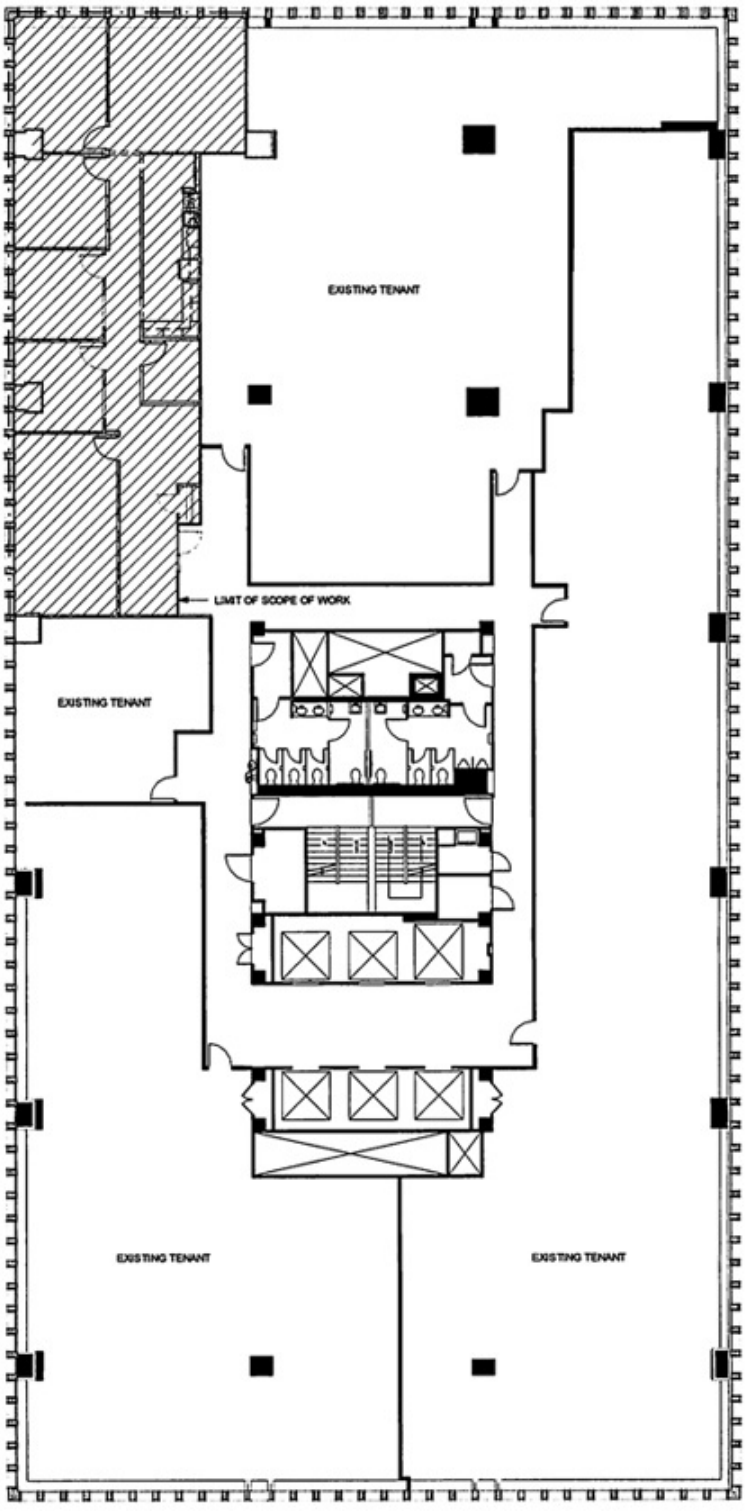
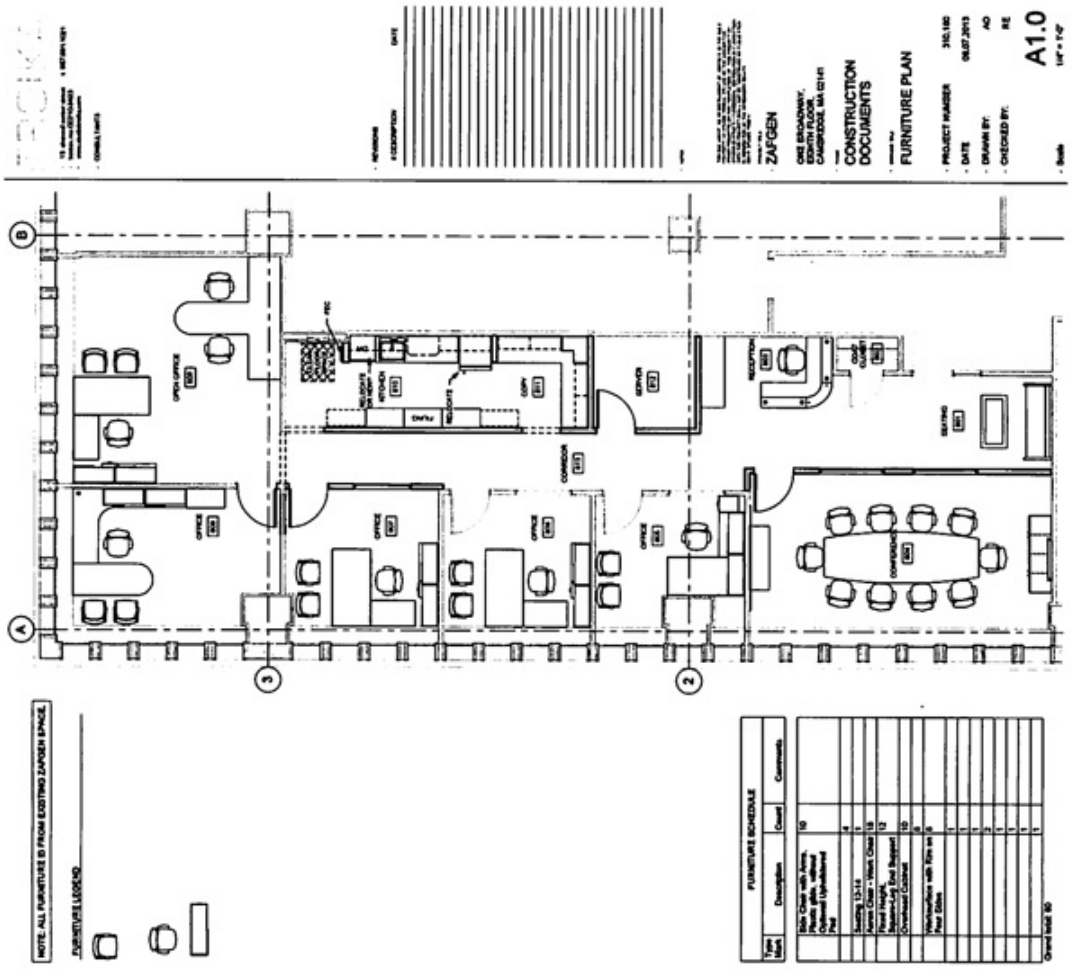


EXHIBIT B
SPACE PLAN



One Broadway, 8th Floor
Cambridge, MA 02142
+1 (617) 401-3051
zafgen.com

December 20, 2013

MIT One Broadway LLC
c/o Massachusetts Institute of Technology
238 Main Street, Suite 200
Cambridge, MA 02142
Attn: Steven C. Marsh

Re: Zafgen "Extension Notice" for One Broadway

Dear Mr. Marsh:

Pursuant to that certain lease at One Broadway, Cambridge, MA between MIT ONE BROADWAY LLC, a Massachusetts limited liability company ("Landlord") and ZAFGEN, INC., a Delaware Corporation ("Tenant") dated as of July 8, 2011, as amended by that certain First Amendment to Lease dated as of June 20, 2013, Tenant is hereby giving Landlord written notice (the "Extension Notice") extending the term of the lease, as amended, for an additional term of six (6) months commencing as of February 1, 2014 and expiring on July 31, 2014. With the timely giving of this notice, the term shall be deemed extended upon all of the terms and conditions of the lease, as amended.

Thank you,

Patricia L. Allen
Chief Financial Officer
Zafgen, Inc.

cc: Goulston & Storrs
400 Atlantic Avenue
Boston, MA 02110
Attention: Colleen P. Hussey, Esquire

Colliers International New England LLC
336 Main Street
Cambridge, MA 02142
Attention: Kristina Descoteoux

EXHIBIT 10.5

33 Newbury Street
Boston, MA 02116

July 25, 2008

Thomas E. Hughes
89 Wilson Road
Concord, MA 01742

Dear Tom:

This letter agreement ("Agreement") will confirm our offer of employment with Zafgen (the "Company") under the terms and conditions that follow:

1. Position and Duties

Effective on a date to be mutually agreed upon, provided that the Board of Directors has approved this Agreement by such date ("Effective Date"), you will be employed by the Company, on a full-time basis, as its Chief Executive Officer, subject to the direction and control of the Board of Directors of the Company (the Board). In addition you will be elected to the Board at the next Board meeting after you join the Company and will serve without further compensation as a member of the Board for so long as you serve as the Company's Chief Executive Officer. You also agree to perform the duties of your position and such other duties as reasonably may be assigned to you from time to time. You also agree that while employed by the Company you will devote your full business time and your best efforts, business judgment, skill and knowledge exclusively to the advancement of the business and interests of the Company and to the discharge of your duties and responsibilities for it.

2. Compensation and Benefits

During your employment, as compensation for all services performed by you for the Company and subject to your performance of your duties and responsibilities for the Company, pursuant to the Agreement or otherwise, the Company will provide you with the following pay and benefits.

Base Salary: You will receive a semi-monthly salary of $13,541.67 which is equivalent to $325,000.08 annually. All payments will be subject to legally required tax withholdings.

Bonus: In addition you will also be eligible to receive an annual incentive bonus commencing in calendar year 2008, equal to up to 30% of your base salary. Your 2008 award, which will be based upon your performance will be prorated based upon your start date and will be subject to the terms of the applicable bonus plan approved by the Board. Additional details will be available after you join the company. All bonus payments will be subject to legally required tax withholdings.

Stock Options: You will be granted a stock option to purchase 1,078,969 shares of the Company's common stock, subject to Board of Directors approval. This option, which will be subject to the standard terms and conditions of the Zafgen Stock Option Plan, will be issued soon after you begin employment with the Company. The option will vest over four years at the rate of 25% after twelve months of active employment and then on each monthly anniversary date of active employment until after four full years of active employment when the option is fully vested.

If a Change of Control (defined below) occurs all of your remaining unvested options shall fully vest, effective upon the consummation of any Change in Control. "Change of Control" shall mean (i) the acquisition of beneficial ownership (as defined in Rule 13d-3 under the Exchange Act) directly or indirectly by any "person" (individual, a corporation, a partnership or any other entity or organization other than the Company or any of its Affiliates) of securities of the Company representing a majority or more of the combined voting power of the Company's then outstanding securities, other than an acquisition of securities for investment purposes pursuant to a bona fide financing of the Company; (ii) a merger or consolidation of the Company with any other corporation in which holders of the voting securities of the Company prior to the merger of consolidation do not own more than 50% of the total voting securities of the surviving corporation; or (iii) the sale or disposition by the company of all or substantially all of the Company's assets other than a sale or disposition of assets to an Affiliate of the Company or holders of securities of the Company.

Benefits: Zafgen currently offers medical and dental insurance, life and disability insurance plans as well as three weeks vacation and 11 company paid holidays. Our benefits, and payroll, are provided through TriNet Employer Group, Inc., a professional employer organization. As a result of the Company's arrangement with TriNet, TriNet will be considered your employer of record for these purposes and the Zafgen Board will be responsible for directing your work, reviewing your performance, setting your schedule, and otherwise directing your work at Zafgen.

Company Property and Employment Eligibility : The offer of employment is contingent upon satisfactory reference checks, your signing Zafgen's standard Forms of Agreement Regarding Inventions, Confidentiality and Proprietary Information (Copy attached) and I-9 Employment Verification Form (Copy attached). You will be required to submit documentation that establishes identity and employment eligibility in accordance with the US Immigration and Naturalization requirements.

If there are any other agreements of any type that you are aware of which may impact or limit your ability to perform your job at Zafgen, please let us know as soon as possible.

Term of Employment: This employment offer letter is not intended to create or constitute an employment agreement or contract between you and Zafgen. It is also important for you to understand that Massachusetts is an "at will" employment state. This means that you will have the right to terminate your employment relationship with Zafgen at any time for any reason. Similarly, Zafgen will have the right to terminate its employment relationship with you at any time for any reason.

As stated above, the Company has contracted with TriNet to provide payroll, benefits and HR administration services on behalf of Zafgen. Information about these benefits is included in this letter and additional information will be available on-line over the web on the terms and conditions included in the End User License Agreement (EULA) each new employee must accept in order to access TriNet's on-line self-service portal: HR Passport.

You may indicate your acceptance of this offer by signing on the appropriate space indicated below and return a signed copy along with the other necessary agreements referenced in this letter in the enclosed stamped envelope to Tim Morrison. This offer will be open until July 31, 2008.

We are all excited about the opportunity to work with you. On behalf of all our team members, let me extend a sincere Welcome Aboard!

Sincerely

/s/ Peter Barrett

Peter Barrett
Chairman of the Board of Directors
Zafgen, Inc.

Enclosures:

~Zafgen's Standard Form of Agreement Regarding Employee
~Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement
~I-9 Employment Verification Form
~End User License Agreement for TriNet Web Benefits Information Access

I accept the above terms of employment as stated:

/s/ Thomas E. Hughes	7-29-2008
Thomas E. Hughes	Date

EXHIBIT 10.6

Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement

In consideration and as a condition of my employment or continued employment by Zafgen, Inc. (the "Company"), 1 hereby agree as follows:

1. Proprietary Information. I agree that all information, whether or not in writing, whether or not disclosed before or after I was first employed by the Company, concerning the Company's business, technology, business relationships or financial affairs that the Company has not released to the general public (collectively, "Proprietary Information"), and all tangible embodiments thereof, are and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material that has not been made generally available to the public, such as: (a) *corporate information,* including plans, strategies, methods, policies, resolutions, notes, email correspondence, negotiations or litigation; (b) *marketing information*, including strategies methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; (c) *financial information,* including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; and (d) *operational and technological information,* including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, biological or chemical materials, concepts and ideas; and (e) *personnel information,* including personnel lists, reporting or organizational structure, resumes, personnel data, compensation structure, performance evaluations and termination arrangements or documents. Proprietary Information includes, without limitation, (1) information received in confidence by the Company from its customers or suppliers or other third parties, and (2) all biological or chemical materials and other tangible embodiments of the Proprietary Information.

2. Recognition of Company's Rights. I will not, at any time, without the Company's prior written permission, either during or after my employment, disclose or transfer any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies and other tangible embodiments of Proprietary Information in my possession or control upon the earlier of a request by the Company or termination of my employment.

3. Rights of Others. I understand that the Company is now and may hereafter be subject to non-disclosure or confidentiality agreements with third persons which require the Company to protect or refrain from use of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information.

4. Commitment to Company; Avoidance of Conflict of Interest. While an employee of the Company, I will devote my full-time efforts to the Company's business and I will not engage in any other business activity that conflicts with my duties to the Company. I will advise the President of the Company or his or her nominee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict which it finds to exist.

5. Developments. I hereby assign and transfer and, to the extent any such assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns, all my right, title and interest in and to all Developments (as defined below) that: (a) are created, developed, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction (collectively, "conceived") during the period of my employment and six (6) months thereafter and that relate to the business of the Company or to products, methods or services being researched, developed, manufactured or sold by the Company; or (b) result from tasks assigned to me by the Company; or (c) result from the use of premises, Proprietary Information or personal property (whether tangible or intangible) owned, licensed or leased by the Company (collectively, "Company-Related Developments"), and all patent rights, trademarks, copyrights and other intellectual property rights in all countries and territories worldwide claiming, covering or otherwise arising from or pertaining to Company-Related Developments (collectively, "Intellectual Property Rights"). I further agree that "Company-Related Developments" include, without limitation, all Developments that

(i) were conceived by me before my employment, (ii) relate to the business of the Company or to products, methods or services being researched, developed, manufactured or sold by the Company, and (iii) were not subject to an obligation to assign to another entity when conceived. I will make full and prompt disclosure to the Company of all Company-Related Developments, as well as all other Developments conceived by me during the period of my employment and six (6) months thereafter. I acknowledge that all work performed by me as an employee of the Company is on a "work for hire" basis. I hereby waive all claims to any moral rights or other special rights which I may have or accrue in any Company-Related Developments. "Developments" mean inventions, discoveries, designs, developments, methods, modifications, improvements, processes, biological or chemical materials, algorithms, databases, computer programs, formulae, techniques, trade secrets, graphics or images, audio or visual works, and other works of authorship.

To preclude any possible uncertainty, I have set forth on Exhibit A attached hereto a complete list of Developments conceived by me before my employment that are not Company-Related Developments ("Prior Inventions"). I have also listed on Exhibit A all patent rights of which I am an inventor, other than those contained within Intellectual Property Rights ("Other Patent Rights"). If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or research or development program or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, fully paid-up, irrevocable, perpetual, worldwide license (with the full right to sublicense through multiple tiers) to make, have made, modify, use, offer for sale, import and sell such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state which precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this Section will be interpreted not to apply to any invention which a court rules and/or the Company agrees falls within such classes.

6. Documents and Other Materials. I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments conceived by me, which records will be available to and remain the sole property of the Company at all times. All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, materials or other written, photographic or other tangible material containing or embodying Proprietary Information, whether created by me or others, which come into my custody or possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. In the event of the termination of my employment for any reason, I will deliver to the Company all of the foregoing, and all other materials of any nature pertaining to the Proprietary Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies. Any property situated on the Company's premises and owned by the Company, including laboratory space, computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice.

7. Enforcement of Intellectual Property Rights. I will cooperate fully with the Company, both during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights, as well as all other patent rights, trademarks, copyrights and other intellectual property rights in all countries and territories worldwide owned by or licensed to the Company. I will sign, both during and after the term of this Agreement, all papers, including copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development or Intellectual Property Rights. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in the same.

8. Non-Competition and Non-Solicitation. In order to protect the Company's Proprietaiy Information and good will, during my employment and for a period of one (1) year following the termination of my employment for any reason (the "Restricted Period"), I will not directly or indirectly, whether as owner, partner, shareholder, director, consultant, agent, employee, co-venturer or otherwise, engage, participate or invest in any business activity anywhere in the world that develops, manufactures or markets any products, or performs any services, that are otherwise competitive with or similar to the products or services of the Company, or products or services that the Company has under development or that are the subject of active planning at any time during my employment; provided that this will not prohibit any possible investment in publicly traded stock of a company representing less than one percent of the stock of such company. In addition, during the Restricted Period, I will not, directly or indirectly, in any manner, other than for the benefit of the Company, (a) call upon, solicit, divert or take away any of the customers, business or prospective customers of the Company or any of its suppliers, and/or (b) solicit, entice or attempt to persuade any other employee or consultant of the Company to leave the services of the Company for any reason. I acknowledge and agree that if I violate any of the provisions of this Section, the running of the Restricted Period will be extended by the time during which I engage in such violation(s).

9. Government Contracts. I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies which impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under Section 5, I also assign to the Company (or any of its nominees) all rights which I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. Prior Agreements. I hereby represent that, except as I have fully disclosed previously in writing to the Company, I am not bound by the terms of any agreement with any previous employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such previous employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. Remedies Upon Breach. I understand that the restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies which may be available, will be entitled to specific performance and other injunctive relief.

12. Publications and Public Statements. I will obtain the Company's written approval before publishing or submitting for publication any material that relates to my work at the Company and/or incorporates any Proprietary Information. To ensure that the Company delivers a consistent message about its products, services and operations to the public, and further in recognition that even positive statements may have a detrimental effect on the Company in certain securities transactions and other contexts, any statement about the Company which I create, publish or post during my period of employment and for six (6) months thereafter, on any media accessible by the public, including but not limited to electronic bulletin boards and Internet-based chat rooms, must first be reviewed and approved by an officer of the Company before it is released in the public domain.

13. No Employment Obligation. I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will and therefore may be terminated by the Company or me at any time and for any reason.

14. Survival and Assignment by the Company. I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my

employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

15. Disclosure to Future Employers. I will provide a copy of this Agreement to any prospective employer, partner or co-venturer prior to entering into an employment, partnership or other business relationship with such person or entity.

16. Exit Interview. If and when I depart from the Company, I may be required to attend an exit interview and sign an "Employee Exit Acknowledgement" to reaffirm my acceptance and acknowledgement of the obligations set forth in this Agreement. During the Restricted Period following termination of my employment, I will notify the Company of any change in my address and of each subsequent employment or business activity, including the name and address of my employer or other post-Company employment plans and the nature of my activities.

17. Severability. In case any provisions (or portions thereof) contained in this Agreement will, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect the other provisions of this Agreement, and this Agreement will be construed as if such invalid, illegal or unenforceable provision had never been contained herein. If, moreover, any one or more of the provisions contained in this Agreement will for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it will be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it will then appear.

18. Entire Agreement. This Agreement constitutes the entire and only agreement between the Company and me respecting the subject matter hereof, and supersedes all prior agreements and understandings, oral or written, between us concerning such subject matter. No modification, amendment, waiver or termination of this Agreement or of any provision hereof will be binding unless made in writing and signed by an authorized officer of the Company. Failure of the Company to insist upon strict compliance with any of the terms, covenants or conditions hereof will not be deemed a waiver of such terms, covenants or conditions. In the event of any inconsistency between this Agreement and any other contract between the Company and me, the provisions of this Agreement will prevail.

19. Interpretation. This Agreement will be deemed to be made and entered into in the Commonwealth of Massachusetts, and will in all respects be interpreted, enforced and governed under the laws of the Commonwealth of Massachusetts. I hereby agree to consent to personal jurisdiction of the state and federal courts situated within Suffolk County, Massachusetts for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts. As used in this Agreement, "including" means "including but not limited to".

BY SIGNING BELOW, I CERTIFY THAT I HAVE READ THIS AGREEMENT CAREFULLY AND AM SATISFIED THAT I UNDERSTAND IT COMPLETELY.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument as of the date set forth below.

Signed: /s/ Thomas E. Hughes
(Employee's full name)

Type or print name: Thomas E. Hughes

Date: 7-29-2008

EXHIBIT A

To: Zafgen, Inc.

From: Thomas E. Hughes

Date: 7-29-2008

SUBJECT: **Prior Inventions**

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

☑ No inventions or improvements

☐ See below:

_____

_____

_____

_____

_____

_____

_____

☐ Additional sheets attached

The following is a list of all patents, patent applications and other patent rights that I invented:

☐ None

☑ See below:

Multiple applications in the field of type 2 diabetes and 1 on obesity and 1 on dyslipidemia and/or cardiovascular disorders -are rights to which have been fully assigned to Novartis on a company in the Novartis family of companies.

EXHIBIT 10.7

One Broadway, 8th Floor
Cambridge, MA 02142

Confidential

August 23, 2011

Dr. Dennis Kim
6648 Muirlands Drive
La Jolla, CA 92037

Re: Employment Offer

Dear Dennis:

On behalf of Zafgen, Inc., a Delaware corporation (the "Company"), I am pleased to offer employment to you. The purpose of this letter is to outline the terms for your employment.

Position: Your initial position with the Company will be Chief Medical Officer.

Start Date: Unless otherwise agreed, your first day of employment will be September 5, 2011 .

Salary: The Company will pay you an annual salary of $325,000 at a semi-monthly rate of $13,541.66, subject to periodic review and adjustment at the discretion of the Company.

Bonus: You will be eligible to receive an annual performance bonus. The Company will target the bonus at up to 25% of your annual salary rate. The actual bonus percentage is discretionary and will be subject to the Company's assessment of your performance, as well as business conditions at the Company. The bonus also will be subject to your employment for the full period covered by the bonus, approval by and adjustment at the discretion of the Company's Board of Directors and the terms of any applicable bonus plan. The Company expects to review your job performance on an annual basis and will discuss with you the criteria which the Company will use to assess your performance for bonus purposes. The Company's Board of Directors may also make adjustments in the targeted amount of your annual performance bonus.

Benefits: You will be eligible to participate in the employee benefits and insurance programs generally made available to its full-time employees, including health, life, disability and dental insurance. Details of these benefits programs, including mandatory employee contributions, will be made available to you when you start. You also will be eligible to receive paid vacation time. You will be eligible for up to 15 days of paid vacation per year, which shall accrue on a prorated basis. Other provisions of the Company's vacation policy are set forth in the policy itself.

Stock Options: You will be eligible to participate in the Company's stock option program, subject to approval by the Board of Directors. We will recommend to the Board of Directors at its next meeting after you join the Company that you be granted an option to purchase 900,000 shares of the Company's common stock at the stock's then fair market value. Your eligibility for stock options will be governed by the Amended and Restated 2006 Stock Option Plan and any associated stock option agreement required to be entered into by you and the Company.

Your stock options shall vest in accordance with the Company's standard vesting policy; provided, however, that if a Change of Control (defined below) occurs within the first 6 months of your start date, 50% of your unvested options shall vest, effective upon the consummation of such Change in Control.

"Change of Control" shall mean (i) the acquisition of beneficial ownership (as defined in Rule 13d-3 under the Exchange Act) directly or indirectly by any "person" (individual, a corporation, a partnership or any other entity or organization other than the Company or any of its Affiliates) of securities of the Company representing a majority or more of the combined voting power of the Company's then outstanding securities, other than an acquisition of securities for investment purposes pursuant to a bona fide financing of the Company; (ii) a merger or consolidation of the Company with any other corporation in which holders of the voting securities of the Company prior to the merger of consolidation do not own more than 50% of the total voting securities of the surviving corporation; or (iii) the sale or disposition by the company of all or substantially all of the Company's assets other than a sale or disposition of assets to an Affiliate of the Company or holders of securities of the Company.

Severance: Your employment is "at will," meaning you or the Company may terminate it at any time for any or no reason. In the event of the termination of your employment for any reason, the Company shall pay you (1) your base salary through the date of termination, (2) an amount equal to the value of your accrued unused vacation days, and (3) the amount of any expenses properly incurred by you on behalf of the Company prior to any such termination and not yet reimbursed. In addition, in the event the Company terminates your employment without Cause or you resign for Good Reason (both as defined below), the Company shall provide you with continuation of your base salary for a period of two (2) months after the date of termination at the salary rate then in effect ("Salary Continuation Payments") (solely for purposes of Section 409A of the Internal Revenue Code of 1986, as amended, each Salary Continuation Payment is considered a separate payment (the "Termination Benefits").

Notwithstanding anything to the contrary in this letter, you shall not be entitled to any Termination Benefits unless you first (i) enter into, do not revoke, and comply with the terms of a separation agreement in a form acceptable to the Company which shall include a release against the Company and related persons and entities (the "Release"); (ii) resign from any and all positions that you then hold with the Company and any affiliate of the Company; and (iii) return all Company property and comply with any instructions related to deleting and purging duplicates of such Company property. The Salary Continuation Payments shall commence within 60 days after the date of termination and shall be made on the Company's regular payroll

dates; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Salary Continuation Payments shall begin to be paid in the second calendar year. In the event you miss a regular payroll period between the date of termination and first Salary Continuation Payment, the first Salary Continuation Payment shall include a "catch up" payment.

"Cause" means any of the following: (i) dishonesty, embezzlement, misappropriation of assets or property of the Company; (ii) gross negligence, misconduct, neglect of duties, theft, fraud, or breach of fiduciary duty to the Company; (iii) violation of federal or state securities laws; (iv) breach of an employment, consulting or other agreement with the Company; (v) the conviction of a felony, or any crime involving moral turpitude, including a plea of guilty or nolo contendre; or (v) material unsatisfactory performance as determined by the Board after written notice and a thirty (30) day opportunity to cure.

"Good Reason" means that you have complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following actions undertaken by the Company without your express prior written consent: (i) the material diminution in your responsibilities, authority and function; (ii) a material reduction in your base salary, provided, however, that Good Reason shall not be deemed to have occurred in the event of a reduction in your base salary that is pursuant to a salary reduction program affecting substantially all of the senior level employees of the Company and that does not adversely affect you to a greater extent than other similarly situated employees; or (iii) a material change in the geographic location at which you must regularly report to work and perform services, except for required travel on the Company's business. "Good Reason Process" means that (i) you have reasonably determined in good faith that a "Good Reason" condition has occurred; (ii) you have notified the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) you have cooperated in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) you terminate your employment within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

Taxes; Section 409A. All forms of compensation referred to in this letter are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You hereby acknowledge that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its board of directors related to tax liabilities arising from your compensation. Anything in this letter to the contrary notwithstanding, if at the time of your separation from service within the meaning of Section 409A of the Code, the Company determines that you are a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that you becomes entitled to under this letter on account of your separation from service would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after your separation from service, or (B) your death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering

amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule. All in-kind benefits provided and expenses eligible for reimbursement under this letter shall be provided by the Company or incurred by you during the time periods set forth in this letter. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit. To the extent that any payment or benefit described in this Employment Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon your termination of employment, then such payments or benefits shall be payable only upon your "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h). The Company and you intend that this letter will be administered in accordance with Section 409A of the Code. To the extent that any provision of this letter is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The Company makes no representation or warranty and shall have no liability to you or any other person if any provisions of this letter are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

Representation Regarding Other Obligations: This offer is conditioned on your representation that you are not subject to any confidentiality, non-competition agreement or any other similar type of restriction that may affect your ability to devote full time and attention to your work at Company. If you have entered into any agreement that may restrict your activities on behalf of the Company, please provide me with a copy of the agreement as soon as possible.

Other Terms: Your employment with the Company shall be on an at-will basis and will be based at the Company's office in Cambridge, Massachusetts. You or the Company may terminate employment for any reason and at any time, with or without notice. Similarly, the terms of employment outlined in this letter are subject to change at any time. You also will be required to sign the Company's standard Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement as a condition of your employment. A copy of that Agreement is enclosed. This offer and Agreement shall be governed by the laws of the Commonwealth of Massachusetts. In addition, as with all employees, our offer to you is contingent on your submission of satisfactory proof of your identity and your legal authorization to work in the United States.

We are excited about the opportunity to work with you at Zafgen, Inc. If you have any questions about this information, please do not hesitate to call. Otherwise, please confirm your acceptance of this offer of employment by signing below and returning a copy to me no later than August 30, 2011. We are confident that with you background and skills, you will have an immediate positive impact on our organization.

Very truly yours,

Enclosures

/s/ Thomas Hughes
Thomas Hughes, President

ACKNOWLEDGED AND AGREED:

/s/ Dennis Kim Sep 01, 2011
Dr. Dennis Kim

EXHIBIT 10.8

Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement

In consideration and as a condition of my employment or continued employment by Zafgen, Inc., a Delaware corporation (the "Company"), I agree as follows:

1. Proprietary Information. I agree that all information, whether or not in writing, whether or not disclosed before or after I was first employed by the Company, concerning the Company's business, technology, business relationships or financial affairs which the Company has not released to the general public (collectively, "Proprietary Information"), and all tangible embodiments thereof, are and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material which has not been made generally available to the public, such as: (a) *corporate information,* including plans, strategies, methods, policies, resolutions, notes, email correspondence, negotiations or litigation; (b) *marketing information,* including strategies, methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; (c) *financial information*, including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; (d) *operational and technological information,* including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, concepts and ideas; and (e) *personnel information,* including personnel lists, reporting or organizational structure, resumes, personnel data, compensation structure, performance evaluations and termination arrangements or documents. Proprietary Information also includes, without limitation, (i) information received in confidence by the Company from its customers or suppliers or other third parties and (ii) all biological or chemical materials and other tangible embodiments of the Proprietary Information.

2. Recognition of Company's Rights. I will not, at any time, without the Company's prior written permission, either during or after my employment, disclose or transfer any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies and other tangible embodiments of Proprietary Information in my possession or control upon the earlier of a request by the Company or termination of my employment.

3. Rights of Others. I understand that the Company is now and may hereafter be subject to non-disclosure or confidentiality agreements with third persons which require the Company to protect or refrain from use of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information.

4. Commitment to Company; Avoidance of Conflict of Interest. While an employee of the Company, I will devote my full-time efforts to the Company's business and I will not engage in any other business activity that conflicts with my duties to the Company. I will advise the President of the Company or his or her nominee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict which it finds to exist.

5. Developments. I will make full and prompt disclosure to the Company of all inventions, discoveries, designs, developments, methods, modifications, improvements, processes, algorithms, databases, computer programs, formulae, techniques, trade secrets, graphics or images, and audio or visual works and other works of authorship (collectively "Developments"), whether or not patentable or copyrightable, that are created, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment. I acknowledge that all work performed by me is on a "work for hire" basis, and I hereby do assign and transfer and, to the extent any such assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns all my right, title and interest in and to all Developments that (a) are created, developed, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment and six (6) months thereafter and that relate to the business of the Company or any customer of or supplier to the Company or any of the products or services being researched, developed, manufactured or sold by the Company or which may be used with such products or services; (b) result from tasks assigned to me by the Company; or (c) result from the use of premises, Proprietary Information or personal property (whether tangible or intangible) owned, leased or contracted for by the Company (collectively, "Company-Related Developments"), and all related patents, patent applications, trademarks and trademark applications, copyrights and copyright applications, and other intellectual property rights in all countries and territories worldwide and under any international conventions ("Intellectual Property Rights").

To preclude any possible uncertainty, I have set forth on Exhibit A attached hereto a complete list of Developments that I have, alone or jointly with others, conceived, developed or reduced to practice prior to the commencement of my employment with the Company that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement ("Prior Inventions"). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party(ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. I have also listed on Exhibit A all

patents and patent applications in which I am named as an inventor, other than those which have been assigned to the Company ("Other Patent Rights"). If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, machine, process or research or development program, or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, fully paid-up, irrevocable, perpetual, worldwide license (with the full right to sublicense through multiple tiers) to make, have made, modify, use, sell, offer for sale and import such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

This Agreement does not obligate me to assign to the Company any Development which, in the sole judgment of the Company, reasonably exercised, is developed entirely on my own time and does not relate to the business efforts or research and development efforts in which, during the period of my employment, the Company actually is engaged or reasonably would be engaged, and does not result from the use of premises or equipment owned or leased by the Company, However, I will also promptly disclose to the Company any such Developments for the purpose of determining whether they qualify for such exclusion. I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state which precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this paragraph 5 will be interpreted not to apply to any invention which a court rules and/or the Company agrees falls within such classes. I also hereby waive all claims to any moral rights or other special rights which I may have or accrue in any Company-Related Developments.

6. Documents and Other Materials. I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments developed by me during my employment, which records will be available to and remain the sole property of the Company at all times. All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, whether created by me or others, which come into my custody or possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. Any property situated on the Company's premises and owned by the Company, including without limitation computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice. In the event of the termination of my employment for any reason, I will deliver to the Company all files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, and other materials of any nature pertaining to the Proprietary Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies.

7. Enforcement of Intellectual Property Rights. I will cooperate fully with the Company, both during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights in Company-Related Developments. I will sign, both during and after the term of this Agreement, all papers, including without limitation copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development or Intellectual Property Rights. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in the same.

8. Non-Competition and Non-Solicitation. In order to protect the Company's Proprietary Information and goodwill, during my employment and for a period of twelve (12) months following the termination of my employment for any reason (the "Restricted Period"), I will not directly or indirectly, whether as owner, partner, shareholder, director, manager, consultant, agent, employee, co-venturer or otherwise, engage, participate or invest in any business activity anywhere in the world that develops, manufactures or markets any products, or performs any services, that are otherwise competitive with or similar to the products or services of the Company, or products or services that the Company or its affiliates, has under development or that are the subject of active planning at any time during my employment; provided that this shall not prohibit any possible investment in publicly traded stock of a company representing less than one percent of the stock of such company. In addition, during the Restricted Period, I will not, directly or indirectly, in any manner, other than for the benefit of the Company, (a) call upon, solicit, divert, take away, accept or conduct any business from or with any of the customers or prospective customers of the Company or any of its suppliers, and/or (b) solicit, entice, attempt to persuade any other employee or consultant of the Company to leave the Company for any reason or otherwise participate in or facilitate the hire, directly or through another entity, of any person who is employed or engaged by the Company or who was employed or engaged by the Company within six (6) months of my termination of any attempt to hire such person. I acknowledge and agree that if I violate any of the provisions of this paragraph 8, the running of the Restricted Period will be extended by the time during which I engage in such violation(s).

9. Government Contracts. I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies which impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under paragraph 5, I also assign to the Company (or any of its nominees) all rights which I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. Prior Agreements. I hereby represent that, except as I have fully disclosed previously in writing to the Company, I am not bound by the terms of any agreement with any previous employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such previous employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. Remedies Upon Breach. I understand that the restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies which may be available, will be entitled to specific performance and other injunctive relief, without the posting of a bond. If I violate this Agreement, in addition to all other remedies available to the Company at law, in equity, and under contract, I agree that I am obligated to pay all the Company's costs of enforcement of this Agreement, including attorneys' fees and expenses.

12. Use of Voice, Image and Likeness. I give the Company permission to use any and all of my voice, image and likeness, with or without using my name, in connection with the products and/or services of the Company, for the purposes of advertising and promoting such products and/or services and/or the Company, and/or for other purposes deemed appropriate by the Company in its reasonable discretion, except to the extent expressly prohibited by law.

13. Publications and Public Statements. I will obtain the Company's written approval before publishing or submitting for publication any material that relates to my work at the Company and/or incorporates any Proprietary Information. To ensure that the Company delivers a consistent message about its products, services and operations to the public, and further in recognition that even positive statements may have a detrimental effect on the Company in certain securities transactions and other contexts, any statement about the Company which I create, publish or post during my period of employment and for six (6) months thereafter, on any media accessible by the public, including but not limited to electronic bulletin boards and Internet-based chat rooms, must first be reviewed and approved by an officer of the Company before it is released in the public domain.

14. No Employment Obligation. I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will and therefore may be terminated by the Company or me at any time and for any reason, with or without cause.

15. Survival and Assignment by the Company. I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

16. Exit Interview. If and when I depart from the Company, I may be required to attend an exit interview and sign an "Employee Exit Acknowledgement" to reaffirm my acceptance and acknowledgement of the obligations set forth in this Agreement. For twelve (12) months following termination of my employment, I will notify the Company of any change in my address and of each subsequent employment or business activity, including the name and address of my employer or other post-Company employment plans and the nature of my activities.

17. Disclosure to Future Employers. I will provide a copy of this Agreement to any prospective employer, partner or coventurer prior to entering into an employment, partnership or other business relationship with such person or entity.

18. Severability. In case any provisions (or portions thereof) contained in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein. If, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

19. Entire Agreement. This Agreement constitutes the entire and only agreement between the Company and me respecting the subject matter hereof, and supersedes all prior agreements and understandings, oral or written, between us concerning such subject matter. No modification, amendment, waiver or termination of this Agreement or of any provision hereof will be binding unless made in writing and signed by an authorized officer of the Company. Failure of the Company to insist upon strict compliance with any of the terms, covenants or conditions hereof will not be deemed a waiver of such terms, covenants or conditions. In the event of any inconsistency between this Agreement and any other contract between the Company and me, the provisions of this Agreement will prevail.

20. Interpretation. This Agreement will be deemed to be made and entered into in the Commonwealth of Massachusetts, and will in all respects be interpreted, enforced and governed under the laws of the Commonwealth of Massachusetts. I hereby agree to consent to personal jurisdiction of the state and federal courts situated within Suffolk County, Massachusetts for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts. As used in this Agreement, "including" means "including but not limited to."

[*Remainder of Page Intentionally Left Blank*]

I UNDERSTAND THAT THIS AGREEMENT AFFECTS IMPORTANT RIGHTS. BY SIGNING BELOW, I CERTIFY THAT I HAVE READ IT CAREFULLY AND AM SATISFIED THAT I UNDERSTAND IT COMPLETELY.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument as of the date set forth below.

Signed: Dennis Kim Digitally signed by Dennis Kim DN: cn=Dennis Kim, o=Zalgen, ou, email=dkim@zalgen.com, c=US Date: 2013.08.29 13:58:26 -07'00'

(Employee's full name)

Type or print name: Dennis D. Kim

Date: Aug 29, 2013

[Signature Page to Employee Confidentiality and Assignment Agreement]

EXHIBIT A

To: **Zafgen, Inc.**

From: Dennis D. Kim

Date: Aug 29, 2013

SUBJECT: **Prior Inventions**

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

x No inventions or improvements

☐ See below:

_____

_____

_____

☐ Additional sheets attached

The following is a list of all patents and patent applications in which I have been named as an inventor:

☐ None

x See below:

1	8,501,693	Use of exendins and exendin agonists and GLP-1 receptor agonists for altering the concentration of fibrinogen
2	8,483,830	Methods and systems for glucose regulation
3	8,389,472	Exendin-4 to treat nonalcoholic steatohepatitis and nonalcoholic fatty liver disease
4	20100204741	SYSTEMS FOR REGULATION OF BLOOD PRESSURE AND HEART RATE
5	20100144621	Use of Exendins and Exendin Agonists and GLP-1 Receptor Agonists for Altering the Concentration of Fibrinogen
6	20090312246	Uses of Glucoregulatory Proteins
7	20090254143	METHODS AND SYSTEMS FOR GLUCOSE REGULATION
8	20090210019	TREATMENT OF EXCESS WEIGHT BY NEURAL DOWNREGULATION IN COMBINATION WITH COMPOSITIONS
9	20090209469	Use of Exendins and GLP-1 Receptor Agonists for Altering Lipoprotein Particle Size and Subclass Composition

EXHIBIT 10.9

One Broadway, 8th Floor
Cambridge, MA 02142

Confidential

December 10, 2012

Ms. Patricia Allen
7 Ashford Lane
Andover, Massachusetts, 01810

Re: Employment Offer

Dear Patricia:

On behalf of Zafgen, Inc., a Delaware corporation (the "Company"). I am pleased to offer employment to you. The purpose of this letter is to outline the terms for your employment.

Position: Your initial position with the Company will be Chief Financial Officer

Start Date: Unless otherwise agreed, your first day of employment will be January 2, 2013. It is anticipated that your employment will begin with half-time activity (5 full business days within any given two-week period) and will increase to full-time employment, with a preliminary target being April 1 st, 2013. For purposes of this letter agreement, the actual date of your full time employment shall be referred to as the "Full-time Start Date".

Salary: After the Full-Time Start Date, the Company will pay you an annual salary at the rate of $265,000 (a semi-monthly rate of $11,041.66), subject to periodic review and adjustment at the discretion of the Company. Prior to your Full-time Start Date, your pay will be prorated according to the number of days worked per pay period.

Bonus: You will be eligible to receive an annual performance bonus. The Company will target the bonus at up to 25% of your actual annual salary compensation for the applicable bonus year. The actual bonus amount is discretionary and will be subject to the Company's assessment of your performance, as well as business conditions at the Company. The bonus also will be subject to your employment for the full period covered by the bonus, approval by and adjustment at the discretion of the Company's Board of Directors and the terms of any applicable bonus plan. The Company expects to review your job performance on an annual basis and will discuss with you the criteria, which the Company will use to assess your performance for bonus purposes. The Company's Board of Directors may also make adjustments in the targeted amount and/or your annual performance bonus.

Benefits: You will be eligible to participate in the employee benefits and insurance programs generally made available to its full-time employees, including health, life, disability and dental insurance. Details of these benefits programs, including mandatory employee contributions, will be made available to you when you start. You also will be eligible for up to 15 days of paid vacation per year, which shall accrue on a prorated basis. Other provisions of the Company's vacation policy are set forth in the policy itself.

Stock Options: You will be eligible to participate in the Company's stock option program, subject to approval by the Board of Directors. We will recommend to the Board of Directors at its next meeting after you join the Company that you be granted an option to purchase 800,000 shares of the Company's common stock at the stock's then fair market value. Your eligibility for stock options will be governed by the Amended and Restated 2006 Stock Option Plan and any associated stock option agreement required to be entered into by you and the Company.

Your stock options shall vest in accordance with the Company's standard vesting policy, provided, however, that if a Change of Control (defined below) occurs within the first 12 months of your start date, 25% of your unvested options shall vest, effective upon the consummation of such Change in Control.

At-will Employment, Accrued Obligations; Severance. Your employment is "at will," meaning you or the Company may terminate it at any time for any or no reason. In the event of the termination of your employment for any reason, the Company shall pay you the Accrued Obligations, defined as (1) your base salary through the date of termination, (2) an amount equal to the value of your accrued unused vacation days, and (3) the amount of any expenses properly incurred by you on behalf of the Company prior to any such termination and not yet reimbursed. In addition, in the event the Company terminates your employment without Cause or you resign for Good Reason (both as defined below), the Company shall provide you with the following termination benefits (the "Termination Benefits"):

(i) continuation of your then base salary (pro-rated if prior to the Full-time Start Date) for a period of two (2) months after the date of termination at the salary rate then in effect ("Salary Continuation Payments");

(ii) if you are participating in the Company's health plan benefits as of the date of termination, continuation of group health plan benefits to the extent authorized by and consistent with 29 U.S.C. § 1161 et seq. (commonly known as "COBRA"), with the cost of the regular premium for such benefits shared in the same relative proportion by the Company and you as in effect on the date of termination until the earlier of (i) two (2) months from the termination date; and (ii) the date you become eligible for health benefits through another employer or otherwise become ineligible for COBRA ("Health Benefits Continuation Payments"); and

Notwithstanding anything to the contrary in this letter agreement, you shall not be entitled to any Termination Benefits unless you first (i) enter into, do not revoke, and comply with the terms of a separation agreement in a form acceptable to the Company which shall include a release against the Company and related persons and entities (the "Release"); (ii) resign from any and all

positions, including, without implication of limitation, as a director, trustee, and officer, that you then hold with the Company and any affiliate of the Company; and (iii) return all Company property and comply with any instructions related to deleting and purging duplicates of such Company property. For purposes of this letter agreement, "Cause" means any of the following: (i) dishonesty, embezzlement, misappropriation of assets or property of the Company, (ii) gross negligence, misconduct, neglect of duties, theft, fraud, or breach of fiduciary duty to the Company, (iii) violation of federal or state securities laws; (iv) breach of an employment, consulting or other agreement with the Company; (v) the conviction of a felony, or any crime involving moral turpitude, including a plea of guilty or *nolo contendre,* or (vi) continued non-performance or unsatisfactory performance of your responsibilities hereunder and "Good Reason" means that you have complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following actions undertaken by the Company without your express prior written consent: (i) the material diminution in your responsibilities, authority and function; (ii) a material reduction in your base salary, provided, however, that Good Reason shall not be deemed to have occurred in the event of a reduction in your base salary that is pursuant to a salary reduction program affecting substantially all of the senior level employees of the Company and that does not adversely affect you to a greater extent than other similarly situated employees; or (iii) a material change in the geographic location at which you must regularly report to work and perform services, except for required travel on the Company's business. "Good Reason Process" means that (i) you have reasonably determined in good faith that a "Good Reason" condition has occurred; (ii) you have notified the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) you have cooperated in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) you terminate your employment within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

Representation Regarding Other Obligations: This offer is conditioned on your representation that you are not subject to any confidentiality, non-competition agreement or any other similar type of restriction that may affect your ability to devote full time and attention to your work at Company. If you have entered into any agreement that may restrict your activities on behalf of the Company, please provide me with a copy of the agreement as soon as possible.

Other Terms: Your employment will be based at the Company's office in Cambridge, Massachusetts. You or the Company may terminate employment for any reason and at any time, with or without notice. Similarly, the terms of employment outlined in this letter are subject to change at any time. You also will be required to sign the Company's standard Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement as a condition of your employment. A copy of that Agreement is enclosed. This offer and Agreement shall be governed by the laws of the Commonwealth of Massachusetts. In addition, as with all employees, our offer to you is contingent on your submission of satisfactory proof of your identity and your legal authorization to work in the United States.

We are excited about the opportunity to work with you at Zafgen, Inc. If you have any questions about this information, please do not hesitate to call. Otherwise, please confirm your acceptance of this offer of employment by signing below and returning a copy to me no later than December 14, 2012. We are confident that with you background and skills, you will have an immediate positive impact on our organization.

Very truly yours,

Enclosures

/s/ Thomas Hughes
Thomas Hughes, President

ACKNOWLEDGED AND AGREED

/s/ Patricia Allen
Ms. Patricia Allen

EXHIBIT 10.10

Employee Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement

In consideration and as a condition of my employment or continued employment by Zafgen, Inc., a Delaware corporation (the "Company"), I agree as follows:

1. Proprietary Information. I agree that all information, whether or not in writing, whether or not disclosed before or after I was first employed by the Company, concerning the Company's business, technology, business relationships or financial affairs which the Company has not released to the general public (collectively, "Proprietary Information"), and all tangible embodiments thereof, are and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material which has not been made generally available to the public, such as: (a) *corporate information,* including plans, strategies, methods, policies, resolutions, notes, email correspondence, negotiations or litigation; (b) *marketing information,* including strategies, methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; (c) *financial information,* including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; (d) *operational and technological information,* including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, concepts and ideas; and (e) *personnel information,* including personnel lists, reporting or organizational structure, resumes, personnel data, compensation structure, performance evaluations and termination arrangements or documents. Proprietary Information also includes, without limitation, (i) information received in confidence by the Company from its customers or suppliers or other third parties and (ii) all biological or chemical materials and other tangible embodiments of the Proprietary Information.

2. Recognition of Company's Rights. I will not, at any time, without the Company's prior written permission, either during or after my employment, disclose or transfer any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies and other tangible embodiments of Proprietary Information in my possession or control upon the earlier of a request by the Company or termination of my employment.

3. Rights of Others. I understand that the Company is now and may hereafter be subject to non-disclosure or confidentiality agreements with third persons which require the Company to protect or refrain from use of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information.

4. Commitment to Company; Avoidance of Conflict of Interest. While an employee of the Company, I will devote my full-time efforts to the Company's business and I will not engage in any other business activity that conflicts with my duties to the Company. I will advise the President of the Company or his or her nominee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict which it finds to exist.

5. Developments. I will make full and prompt disclosure to the Company of all inventions, discoveries, designs, developments, methods, modifications, improvements, processes, algorithms, databases, computer programs, formulae, techniques, trade secrets, graphics or images, and audio or visual works and other works of authorship (collectively "Developments"), whether or not patentable or copyrightable, that are created, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment. I acknowledge that all work performed by me is on a "work for hire" basis, and I hereby do assign and transfer and, to the extent any such assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns all my right, title and interest in and to all Developments that (a) are created, developed, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment and six (6) months thereafter and that relate to the business of the Company or any customer of or supplier to the Company or any of the products or services being researched, developed, manufactured or sold by the Company or which may be used with such products or services; (b) result from tasks assigned to me by the Company; or (c) result from the use of premises, Proprietary Information or personal property (whether tangible or intangible) owned, leased or contracted for by the Company (collectively, "Company-Related Developments"), and all related patents, patent applications, trademarks and trademark applications, copyrights and copyright applications, and other intellectual property rights in all countries and territories worldwide and under any international conventions ("Intellectual Property Rights").

To preclude any possible uncertainty, I have set forth on Exhibit A attached hereto a complete list of Developments that I have, alone or jointly with others, conceived, developed or reduced to practice prior to the commencement of my employment with the Company that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement ("Prior Inventions"). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party(ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. I have also listed on Exhibit A all

patents and patent applications in which I am named as an inventor, other than those which have been assigned to the Company ("Other Patent Rights"). If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, machine, process or research or development program, or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, fully paid-up, irrevocable, perpetual, worldwide license (with the full right to sublicense through multiple tiers) to make, have made, modify, use, sell, offer for sale and import such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

This Agreement does not obligate me to assign to the Company any Development which, in the sole judgment of the Company, reasonably exercised, is developed entirely on my own time and does not relate to the business efforts or research and development efforts in which, during the period of my employment, the Company actually is engaged or reasonably would be engaged, and does not result from the use of premises or equipment owned or leased by the Company. However, I will also promptly disclose to the Company any such Developments for the purpose of determining whether they qualify for such exclusion. I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state which precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this paragraph 5 will be interpreted not to apply to any invention which a court rules and/or the Company agrees falls within such classes. I also hereby waive all claims to any moral rights or other special rights which I may have or accrue in any Company-Related Developments.

6. Documents and Other Materials. I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments developed by me during my employment, which records will be available to and remain the sole property of the Company at all times. All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, whether created by me or others, which come into my custody or possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. Any property situated on the Company's premises and owned by the Company, including without limitation computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice. In the event of the termination of my employment for any reason, I will deliver to the Company all files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, and other materials of any nature pertaining to the Proprietary Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies.

7. Enforcement of Intellectual Property Rights. I will cooperate fully with the Company, both during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights in Company-Related Developments. I will sign, both during and after the term of this Agreement, all papers, including without limitation copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development or Intellectual Property Rights. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in the same.

8. Non-Competition and Non-Solicitation. In order to protect the Company's Proprietary Information and goodwill, during my employment and for a period of twelve (12) months following the termination of my employment for any reason (the "Restricted Period"), I will not directly or indirectly, whether as owner, partner, shareholder, director, manager, consultant, agent, employee, co-venturer or otherwise, engage, participate or invest in any business activity anywhere in the world that develops, manufactures or markets any products, or performs any services, that are otherwise competitive with or similar to the products or services of the Company, or products or services that the Company or its affiliates, has under development or that are the subject of active planning at any time during my employment; provided that this shall not prohibit any possible investment in publicly traded stock of a company representing less than one percent of the stock of such company. In addition, during the Restricted Period, I will not, directly or indirectly, in any manner, other than for the benefit of the Company, (a) call upon, solicit, divert, take away, accept or conduct any business from or with any of the customers or prospective customers of the Company or any of its suppliers, and/or (b) solicit, entice, attempt to persuade any other employee or consultant of the Company to leave the Company for any reason or otherwise participate in or facilitate the hire, directly or through another entity, of any person who is employed or engaged by the Company or who was employed or engaged by the Company within six (6) months of my termination of any attempt to hire such person. I acknowledge and agree that if I violate any of the provisions of this paragraph 8, the running of the Restricted Period will be extended by the time during which I engage in such violation(s).

9. Government Contracts. I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies which impose obligations or restrictions on the Company

regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under paragraph 5, I also assign to the Company (or any of its nominees) all rights which I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. Prior Agreements. I hereby represent that, except as I have fully disclosed previously in writing to the Company, I am not bound by the terms of any agreement with any previous employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such previous employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. Remedies Upon Breach. I understand that the restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies which may be available, will be entitled to specific performance and other injunctive relief, without the posting of a bond. If I violate this Agreement, in addition to all other remedies available to the Company at law, in equity, and under contract, I agree that I am obligated to pay all the Company's costs of enforcement of this Agreement, including attorneys' fees and expenses.

12. Use of Voice, Image and Likeness. I give the Company permission to use any and all of my voice, image and likeness, with or without using my name, in connection with the products and/or services of the Company, for the purposes of advertising and promoting such products and/or services and/or the Company, and/or for other purposes deemed appropriate by the Company in its reasonable discretion, except to the extent expressly prohibited by law.

13. Publications and Public Statements. I will obtain the Company's written approval before publishing or submitting for publication any material that relates to my work at the Company and/or incorporates any Proprietary Information. To ensure that the Company delivers a consistent message about its products, services and operations to the public, and further in recognition that even positive statements may have a detrimental effect on the Company in certain securities transactions and other contexts, any statement about the Company which I create, publish or post during my period of employment and for six (6) months thereafter, on any media accessible by the public, including but not limited to electronic bulletin boards and Internet-based chat rooms, must first be reviewed and approved by an officer of the Company before it is released in the public domain.

14. No Employment Obligation. I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will and therefore may be terminated by the Company or me at any time and for any reason, with or without cause.

15. Survival and Assignment by the Company. I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

16. Exit Interview. If and when I depart from the Company, I may be required to attend an exit interview and sign an "Employee Exit Acknowledgement" to reaffirm my acceptance and acknowledgement of the obligations set forth in this Agreement. For twelve (12) months following termination of my employment, I will notify the Company of any change in my address and of each subsequent employment or business activity, including the name and address of my employer or other post-Company employment plans and the nature of my activities.

17. Disclosure to Future Employers. I will provide a copy of this Agreement to any prospective employer, partner or coventurer prior to entering into an employment, partnership or other business relationship with such person or entity.

18. Severability. In case any provisions (or portions thereof) contained in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein. If, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

19. Entire Agreement. This Agreement constitutes the entire and only agreement between the Company and me respecting the subject matter hereof, and supersedes all prior agreements and understandings, oral or written, between us concerning such subject matter. No modification, amendment, waiver or termination of this Agreement or of any provision hereof will be binding unless made in writing and signed by an authorized officer of the Company. Failure of the Company to insist upon strict compliance with any of the terms, covenants or conditions hereof will not be deemed a waiver of such terms, covenants or conditions. In the event of any inconsistency between this Agreement and any other contract between the Company and me, the provisions of this Agreement will prevail.

20. Interpretation. This Agreement will be deemed to be made and entered into in the Commonwealth of Massachusetts, and will in all respects be interpreted, enforced and governed under the laws of the Commonwealth of Massachusetts. I hereby agree to consent to personal jurisdiction of the state and federal courts situated within Suffolk County, Massachusetts for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts. As used in this Agreement, "including" means "including but not limited to."

[*Remainder of Page Intentionally Left Blank*]

I UNDERSTAND THAT THIS AGREEMENT AFFECTS IMPORTANT RIGHTS. BY SIGNING BELOW, I CERTIFY THAT I HAVE READ IT CAREFULLY AND AM SATISFIED THAT I UNDERSTAND IT COMPLETELY.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument as of the date set forth below.

Signed: /s/ Patricia L Allen
(Employee's full name)

Type or print name: Patricia L Allen

Date: 8/29/13

EXHIBIT A

To: **Zafgen, Inc.**

From: Patricia L Allen

Date: **8/29/13**

SUBJECT: **Prior Inventions**

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

☒ No inventions or improvements

☐ See below:

_____

_____

_____

☐ Additional sheets attached

The following is a list of all patents and patent applications in which I have been named as an inventor:

☒ None

☐ See below:

_____

_____

_____

Exhibit 10.13

*****Text Omitted and Filed Separately with the Securities and Exchange Commission**

Confidential Treatment Requested Under 17 C.F.R. Sections 200.80(b)(4) and 230.406

EXCLUSIVE LICENSE AGREEMENT

BETWEEN

CHILDREN'S MEDICAL CENTER CORPORATION

AND

ZAFGEN, INC.

Confidential Treatment Requested

TABLE OF CONTENTS

EXCLUSIVE LICENSE AGREEMENT

This Agreement is made and entered into as of the date last written below (the " **Effective Date**"), by and between CHILDREN'S MEDICAL CENTER CORPORATION, a charitable corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 300 Longwood Avenue, Boston, Massachusetts 02115, U.S.A. (hereinafter referred to as "**CMCC**"), and Zafgen, Inc., a business corporation organized and existing under the laws of the State of Delaware and having its principal office at One Broadway, 14 th Floor, Cambridge MA 02142 (hereinafter referred to as "**Licensee**").

WHEREAS, CMCC is the co-owner with the Massachusetts Institute of Technology ("**M.I.T**.") of certain Patent Rights (as that term shall be defined hereafter) and has the right to grant exclusive licenses under the Patent Rights on its own behalf and on behalf of M.I.T. through an Inter-Institutional Agreement (attached as Appendix 1 to this Agreement), subject only to a royalty-free, nonexclusive license granted to the United States Government for those inventions and ensuing patents developed with U.S. Government funding, and certain laws and regulations relating to Federally- funded projects and institutions;

WHEREAS, in furtherance of its charitable and research missions and those laws and regulations, CMCC desires to have the Patent Rights utilized to promote the public interest and to further that goal is willing to grant a license to Licensee on the terms and conditions described herein;

WHEREAS, Licensee desires to obtain an exclusive license, within a designated territory and for a prescribed field of use, relating to certain Licensed Products (as that term is defined below) and/or Licensed Processes (as that term is defined below) under the scope of the Patent Rights, subject to the terms and conditions of this Agreement;

WHEREAS, Licensee has represented to CMCC that Licensee desires to develop the technology, which is the subject of this Agreement; that it is ready, willing and able to engage in the research, development, and production, manufacture, marketing and sale of Licensed Products and/or the use of Licensed Processes and that it will undertake research and development as described in this Agreement and otherwise consistent with its prudent business judgment.

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained herein, the parties hereto agree as follows:

ARTICLE I
DEFINITIONS

For the purpose of this Agreement, the following words and phrases shall have the meanings set forth below:

A. "**Affiliate**" shall mean any company or other legal entity actually controlling, controlled by or under common control with Licensee. For purposes of the definition of "Affiliate" the term "**control**" shall mean: (i) in the case of a corporate entity, the ability to effect

the election of directors, or in the case of a for-profit entity direct or indirect ownership of at least a majority of the stock or participating shares entitled to vote for the election of directors of that entity, in any case coupled with active managerial involvement and accountability for directing the business and affairs of that entity; (ii) in the case of a partnership, the power customarily held by a managing partner to direct the management and policies of such partnership, provided that such power is actively exercised; or (iii) in the case of a joint venture, whether in corporate, partnership or other legal form, a prevailing joint economic interest coupled with a managerial role entailing active direction, control and accountability with respect to the business and affairs of the entity.

B. "**Combination Product(s) or Combination Process(es)**" shall mean a product or process that includes a Licensed Product sold or performed in combination with another component(s) the manufacture, use or sale of which by itself would not infringe the Patent Rights licensed in this Agreement.

C. "**Fair Market Value**" shall mean the cash price that would be paid in an arm's length transaction between two unrelated parties. The fair market value shall be fairly determined by Licensee's' Board of Directors and CMCC shall be notified thereof in writing together with a sufficiently detailed explanation of the determination and summary of the underlying data (if any) and assumptions to allow CMCC to evaluate the fairness of the determination.

D. "**Field of Use**" shall mean obesity and overweight.

E. "**First Commercial Sale**" shall mean, with respect to each country: the first commercial sale of any Licensed Product by Licensee, its Affiliate or any Sublicensee to an end user, (i) following receipt of marketing approval for such Licensed Product by the appropriate governmental agency, if required, for the country in which the sale is made; or (ii) if governmental approval is not required in order to market such Licensed Product in a country, the first commercial sale in that country of the Licensed Product to an end user.

F. "**Know-How**" shall mean any unpatented manufacturing information, technical information, testing and analytic methods, processes, procedures, and specifications in the Field of Use which CMCC owns or has rights to prior to the Effective Date, arising from the activities of […***…] at CMCC and relating to the Field of Use of the Patent Rights.

G. "**Licensed Product**" shall mean any product or part thereof in the Field of Use:

1. The manufacture, use or sale of which would infringe a Valid Claim in any country within the Territory; or

2. The manufacture or use of which uses a "Licensed Process" as that term shall be defined hereafter; or

3. Is a Licensed Process.

H. "**Licensed Process**" shall mean any process that would infringe a Valid Claim in the Field of Use in any country in the Territory.

I. "**Licensee**" shall mean Licensee, and successors and assignees permitted by this Agreement (including Affiliates where they are assignees permitted by this Agreement).

J. "**Net Sales**" shall mean the gross sales price received for sales, leases, use, or other transfers of Licensed Products by and/or for Licensee, its Affiliates, or its Sublicensees for any Licensed Products to a final customer who will be an end user of the Licensed Product and is not an Affiliate or Sublicensee, less (to the extent appropriately documented) the following amounts:

(a) credits and allowances for price adjustment, rejection, or return of Licensed Products previously sold;

(b) rebates, quantity and cash discounts to purchasers allowed and taken;

(c) amounts for third party transportation, insurance, handling or shipping charges to purchasers;

(d) taxes, duties and other governmental charges levied on or measured by the sale of Licensed Products, whether absorbed by Licensee or paid by the purchaser so long as Licensee's price is reduced thereby, but not franchise or income taxes of any kind whatsoever;

(e) for any sale in which the United States government, on the basis of its royalty-free license pursuant to 35 USC Sec. 202(c) to any Patent Right, requires that the gross sales price of any Licensed Product subject to such Patent Right, be reduced by the amount of such royalty owed CMCC, the amount of such royalty.

Net Sales also includes the Fair Market Value of any non-cash consideration received by Licensee or any Sublicensee for the sale, lease, or transfer of Licensed Products. Transfer of a Licensed Product within Licensee or between Licensee and an Affiliate or between Licensee and Sublicensee for sale by the transferee shall not be considered a Net Sale for purposes of ascertaining royalties. In such circumstances, the gross sales price and resulting Net Sales price shall be based upon the sale of the Licensed Product by the transferee.

In the event that a Licensed Product includes both component(s) covered by a claim of a Patent Right (" **Patented Component**") and a component which is diagnostically useable or therapeutically active alone or in a combination which does not require the Patented Component, and such component is not covered by a claim of a Patent Right ("**Unpatented Component**"), then Net Sales of the Combination Product or Combination Process shall be calculated using one of the following methods:

By multiplying the Net Sales of the Combination Product or Combination Process during the applicable accounting period by a fraction, the numerator of which is the aggregate gross selling price of the Patented Component(s) contained in the Combination Product or Combination Process if sold separately, and the denominator of which is the sum of the gross selling price of both the Patented Component(s) and the Unpatented Component(s) contained in the Combination Product or Combination Process if sold separately; or

In the event that no such separate sales are made of the Patented Component(s) or the Unpatented Components during the applicable accounting period, Net Sales for purposes of determining royalties payable hereunder shall be calculated by multiplying the Net Sales of the Combination Product or Combination Process by a fraction, the numerator of which is the fully allocated production cost of the Patented Component(s) and the denominator of which is the sum of the fully allocated production costs of the Patented Component(s) and the Unpatented Component(s) contained in the Combination Product or Combination Process. Such fully allocated costs shall be determined by using Licensee's standard accounting procedures, which procedures must conform to standard cost accounting procedures.

K. "**New Chemical Entity**" shall mean a drug candidate that has a composition of matter or active moiety that is different from previous drug candidate IND applications filed by Licensee for the Field of Use.

L. "**Patent Rights**" shall mean all of the following intellectual property which CMCC and M.l.T. owns or has rights to during the Term of this Agreement as hereafter defined, excluding however any rights to inventions, improvements, derivatives or modifications discovered or invented after the Effective Date:

1. The United States and foreign patents and/or patent applications listed in Appendix 2 attached hereto and incorporated herein by reference and divisionals and continuations thereof.

2. The United States and foreign patents issued from the applications listed in Appendix 2 and from divisionals and continuations of those applications.

3. Claims of United States and foreign continuation-in-part applications, and of the resulting patents, which are directed to the subject matter specifically described in the United States and foreign patent applications described in Appendix 2.

4. Claims of all later filed foreign patent applications, and of the resulting patents, which are directed to the subject matter specifically described in the United States patent and/or patent applications described in subparagraphs 1, 2 or 3 of this Article I, Paragraph L.

5. Any reissues, divisions, amendments or extensions of the United States or foreign patents described in subparagraphs 1, 2, 3 or 4 of this Article I, Paragraph L.

M. "**Reasonably Diligent Efforts**" shall mean diligent efforts and resources consistent with practices commonly used in the research-based pharmaceutical industry for a company in a similar position as Licensee at such time for a product using such company's strategic core technology at a similar state in its development or product life, as applicable, of similar market potential, taking into account efficacy, safety, the competitiveness of alternative products in the marketplace, the patent and other proprietary position of the product, the likelihood of regulatory approval, and maintaining the first priority of rapid and effective development of the Licensed Products in Licensee's corporate strategy.

N. "**Sublicensee**" shall mean a person or entity that is not an Affiliate of Licensee to whom Licensee has granted a sublicense under Licensee's rights under this Agreement in an arm's length transaction.

O. "**Territory**" shall mean worldwide.

P. "**Term**" shall have the meaning stated in Paragraph A of Article XIII.

Q. "**Valid Claim**" means (i) any claim of an issued and unexpired patent included under the Patent Rights that has not been revoked or held unenforceable by a decision of a court or other governmental entity of competent jurisdiction or unappealed within the time allowable for appeal, and (ii) any claim of a pending application included under the Patent Rights being prosecuted in good faith that has not been abandoned or finally rejected.

ARTICLE II
GRANT

A. Subject to the terms of this Agreement; and conditioned on the faithful performance by Licensee of its obligations CMCC hereby grants to Licensee an exclusive, worldwide right and license to develop, have developed, make, have made, use, have used, lease, offer to sell, and sell the Licensed Products, and to practice the Licensed Processes, in the Territory in the Field of Use during the Term, unless sooner terminated as provided in this Agreement. Subject to the same conditions, CMCC hereby also grants for the Term of this Agreement a non-exclusive license to use Know-How directly in connection with Licensee's research, development and commercialization of Licensed Products; *provided* that such license shall not include the right to sublicense or transfer such Know-How except to contractors of Licensee and Licensee's bona fide collaborators (only for purposes of the collaboration), for the purpose of carrying out the Development Plan. Licensee may extend the license granted herein to its Affiliates.

B. Notwithstanding anything above to the contrary, CMCC shall retain a royalty-free, non-exclusive, right to practice and use, and to license only to other academic nonprofit organizations to practice and/or use the Patent Rights, for non-commercial research, educational, clinical and/or charitable purposes only. Any such license shall specifically exclude and prohibit commercialization of the Patent Rights unless the Licensee enters into an agreement with the Licensee on terms consistent with this Agreement.

C. Notwithstanding any other provision of this Agreement, the license and any sublicense shall be subject to the rights of the United States government, if any, under Public Law 96-517, 97-226, and 98-620, codified at 35 U.S.C. sec. 200-212 and any regulations promulgated thereunder; the obligations of CMCC under applicable laws and regulations; and Licensee's warranty to comply with all applicable laws and regulations.

D. Licensee agrees that Licensed Products leased or sold in the United States shall be manufactured substantially in the United States unless a waiver has been obtained for such requirement as applicable. Upon the First Commercial Sale and thereafter, Licensee's annual report to CMCC shall substantiate Licensee's compliance with this provision.

E. To support exclusivity for Licensee consistent with this Agreement, CMCC hereby agrees that it shall not, without Licensee's prior written consent, grant to any other commercial party a license to develop, make, have made, use, lease and/or sell Licensed Products in the Field of Use, during the Term, except if required by laws affecting the rights of the United States Government.

F. The license granted hereunder shall not be construed to confer any rights upon Licensee by implication, estoppel or otherwise as to any inventions, discoveries, know-how, technology or other intellectual property not described in Paragraph A of this Article.

G. As a condition of the license granted hereunder, Licensee hereby irrevocably covenants and agrees that it will not, directly or indirectly, in any respect, use non-public information it has acquired in the course of prosecution of the Patent Rights from CMCC and/or patent counsel prosecuting the Patent Rights, or non-public information Licensee has provided, or recommendations made by Licensee that have been implemented in whole or in part with respect to prosecution of the Patent Rights, to challenge the Patent Rights or CMCC's ownership of such rights. Any assignment or sublicense granted by Licensee in which assignee or Sublicensee shall participate in the patent prosecution of the remaining pending patent applications shall contain an identical commitment by the assignee or sublicensee.

H. Nothing in this Agreement shall be construed to limit or constrain CMCC, or any officer, director, employee, or member of its medical staff or of any CMCC Affiliate, from continuing to engage in related research; or from the development of related or unrelated inventions, discoveries, rights or technology, and from practicing, licensing or sublicensing related or unrelated intellectual property rights arising from inventions occurring after the Effective Date of this Agreement; or from academic publication related thereto; or from entering into agreements and other relationships with other persons or organizations related to matters not directly and expressly within the scope of this Agreement; or from exercising any rights whatsoever consistent with this Agreement with respect to the Know-How.

I. Licensee shall have the right to enter into sublicensing agreements with respect to any of the rights, privileges, and licenses granted hereunder, subject to the terms and conditions of this Agreement.

CMCC agrees that, in the event CMCC terminates this Agreement for any permitted reason provided hereafter, CMCC shall provide written notice to known Sublicensees, no less than thirty (30) days prior to the effective date of said termination and sent to the address specified by Licensee in the notice provided to CMCC under Paragraph J of this Article II. If the Sublicensee, during that thirty (30) day period, provides to CMCC authorized and written notice that the Sublicensee: (i) reaffirms the terms and conditions of this Agreement as it relates to the rights the Sublicensee has been granted under the sublicense; (ii) agrees to abide by all of the

terms and conditions of this Agreement applicable to Sublicensees and to discharge directly all pertinent obligations of Licensee which Licensee is obligated hereunder to discharge; (iii) acknowledges that CMCC shall have no obligations to the Sublicensee other than its obligations set forth in this Agreement with regard to Licensee, and (iv) is not in breach of the terms of the sublicense agreement, then, provided that Sublicensee's notice is satisfactory to CMCC, the sublicense agreement will survive the termination of this Agreement or, at CMCC's request, Sublicensee will enter into a new agreement with CMCC on the same terms and conditions as this Agreement.

J. In any event, Licensee agrees that any sublicense granted by it shall provide that the obligations to CMCC of Articles II (Grant), V (Reports, Records and Related Matters), VII (Infringement), VIII (Insurance and Indemnification), IX (Compliance with Laws; Export Controls), X (Non-Use of Names), XI (Assignment), XII (Dispute Resolution and Arbitration), XIII (Term and Termination) and XV (General Provisions) of this Agreement shall be binding upon the Sublicensee, for the benefit of CMCC, as if it were a party to this Agreement. In addition, every sublicense shall contain applicable requirements for Reasonably Diligent Efforts in developing or exploiting the Patent Rights, or selling Licensed Products, shall obligate Licensee to enforce those provisions consistent with achieving Licensee's obligations pursuant to this Agreement, and shall make CMCC a third-party beneficiary of the sublicense, with the right, but not the obligation, to enforce Licensee's rights in the event Licensee fails to, provided that CMCC has provided Licensee thirty (30) days' written notice to Licensee of CMCC's intention to do so. Licensee agrees to provide to CMCC notice of any sublicense granted hereunder and to forward to CMCC a copy of any and all fully executed sublicense agreements and sublicensee contact information within thirty (30) days of execution, which may be redacted except for those provisions directly relevant to obligations , under this Agreement. Licensee further agrees to forward to CMCC annually a copy of such reports received by Licensee from its Sublicensees during the preceding twelve (12) month period as shall be pertinent to a royalty accounting under the applicable sublicense and compliance with the other terms of this Agreement.

K. Licensee shall advise CMCC in writing of any consideration received from Sublicensees. Licensee shall not accept from any Sublicensee anything of value in lieu of cash payments to discharge Sublicensee's payment obligations under any sublicense granted under this Agreement, without the express written permission of CMCC, which permission shall not be unreasonably withheld but may take into account a reasonable valuation for purposes of Licensee's payment obligations to CMCC.

ARTICLE III
DUE DILIGENCE AND RELATED MATTERS

A. Licensee, upon execution of this Agreement, on its own behalf or through its Affiliates or Sublicensees, shall use Reasonably Diligent Efforts in good faith to develop the Patent Rights and to bring one or more Licensed Products to market as soon as practicable. Licensee shall use Reasonably Diligent Efforts to obtain all necessary government approvals for the manufacture, use, sale and distribution of Licensed Products. Thereafter, Licensee agrees that until expiration or termination of this Agreement, Licensee shall continue active and diligent efforts to keep Licensed Products reasonably available to the public. In the event Licensee

decides not to exploit a licensed Patent Right, or Field of Use, in a given portion of the Territory, it shall promptly inform CMCC in writing and shall surrender to CMCC its license to that Patent Right or Field of Use in that portion of the Territory.

B. The parties acknowledge that Licensee has provided to CMCC prior to the date of execution of this Agreement an initial written development plan ("**Development Plan**") setting forth overall objectives and the initial indications and markets for Licensed Products, including (i) time-delimited target dates for clinical candidate selection and development, (ii) time-delimited target dates for pre-clinical development, clinical trials, regulatory approval, manufacturing and marketing that represent Reasonably Diligent Efforts to bring Licensed Products to the marketplace. Licensee will submit an updated Development Plan periodically, and in any event within twelve (12) months after the Effective Date and annually thereafter in conjunction with an Annual Status Report as described in Article V (due January 31 each year) until launch of the first Licensed Product. The initial Development Plan is attached hereto as Appendix 3 and is hereby incorporated herein by reference.

C. For the first three (3) years Licensee shall be deemed to have used Reasonably Diligent Efforts under this Article III as follows: (1) during the one (1) year period after the Effective Date if, during that period, Licensee shall have raised in connection with the Patent Rights and allocated for expenditure for efforts under the requirements of this Article III(A) a cumulative total of investment capital and/or research and development funds of at least […***…] ($[…***…]) dollars and applied to activities under the Development Plan; (2) during the three (3) year period after the Effective Date, during that period, Licensee shall have raised and expended aggregate funding of at least […***…] ($[…***…]) dollars to implement the Development Plan; and (3) conduct activities described in the initial Development Plan attached to this Agreement as Appendix 3 as provided by Licensee. After the Effective Date Licensee will include in an Annual Status Report (as defined in Article V of this Agreement) of activities conducted under the Development Plan a commercialization plan of activities that it has planned, including designated milestones and associated timelines for the clinical trials, regulatory approval and launch of the first product in the United States and European territories. At the time of filing the Investigational New Drug Application (" **IND**") with the U.S. Food and Drug Administration ("**FDA**") or equivalent with the European Medicines Evaluation Agency (" **EMEA**"), whichever occurs first for the first Licensed Product, the Licensee will submit a revised plan for commercialization.

D. In the event Licensee wishes to amend the overall objectives set forth in the initial Development Plan attached as Appendix 3 to this Agreement, Licensee will notify CMCC in writing and will include with such notice a reasonably detailed explanation of the circumstances supporting such amendment. Promptly after receipt of such notice, CMCC will notify Licensee in writing whether it approves of such amendment, which approval will not be unreasonably withheld. In the event CMCC does not approve the amendment to objectives in the Development Plan, and CMCC and Licensee are unable to reach resolution on this matter within a reasonable period of time, the matter will be handled in accordance with the dispute resolution terms set forth in Article XII of this Agreement. No rights of either party under this Agreement will be affected pending the outcome of proceedings in accordance with such Article XII.

E. In the event that, through the Annual Status Report, Licensee fails to demonstrate that it has achieved the diligence requirements of this Article Ml, CMCC will notify Licensee in writing of any alleged deficiency and the basis for CMCC's determination of same. Licensee will have […***…] days following such notification to establish that the required diligence has been achieved or to cure such deficiency or to provide an explanation for any delay to CMCC's reasonable satisfaction. If Licensee fails to do any of the above within such […***…]-day period, and subject to the dispute resolution terms set forth in Article XII of this Agreement, CMCC will have the right to convert the license granted under this Agreement from exclusive to non-exclusive on financial terms and conditions to be mutually agreed to by CMCC and Licensee. No rights of either party under this Agreement will be affected pending the outcome of proceedings in accordance with such Article XII. Notwithstanding the foregoing, Licensee may extend the due date for achievement of any funding thresholds set out in Paragraph C of this Article III […***…] only by […***…] by making a payment to CMCC of […***…] dollars ($[…***…]) on or before the date(s) specified.

F. If, during the course of this Agreement, Licensee makes any patentable discovery or invention within the Field of Use that is not within the scope of the Patent Rights but would not have been made but for the Patent Rights and/or the Licensed Products licensed hereunder. Licensee shall, as a condition of this License, confidentially disclose such patentable discovery or invention to the Intellectual Property Office of CMCC, on usual and customary terms necessary to protect its patentability or its confidentiality as a trade secret. CMCC shall have the right to review in advance of filing any related patent application by or on behalf of Licensee or any assignee of Licensee, for purposes of evaluating the relatedness to the Patent Rights. Recognizing that CMCC enters into this Agreement in furtherance of its charitable academic research mission, Licensee shall enter into with CMCC a non-exclusive license or permit, as applicable, including no more than a nominal fee, for […***…] and/or anyone within her laboratory, to practice such invention for which patent application has been filed, solely for CMCC internal and academic research purposes; *provided, however*, that in the event that a patented invention arises from such CMCC use, CMCC shall grant to Licensee a fully paid-up non-exclusive license for internal research purposes, and at Licensee's discretion either a non-exclusive or exclusive commercialization license to practice the invention, subject to mutually agreeable terms.

ARTICLE IV
ROYALTIES AND OTHER PAYMENTS

A. For the rights, privileges and exclusive license granted hereunder, Licensee shall pay to CMCC the amounts hereinafter provided. Unless expressly stated otherwise in this Agreement, periodic payment obligations listed below shall endure through the Term of this Agreement, unless this Agreement shall be sooner terminated as hereinafter provided:

1. A license issue fee of $[…***…], of which $[…***…] shall be due after the full execution of this Agreement and prior to February 1, 2007, and $[…***…] of which shall be due upon the one (1) year anniversary of the Effective Date.

2. Payments for accrued and continuing patent prosecution costs as stated in Article VI hereof;

3. Licensee shall make the following payments to CMCC upon the occurrence of the following events achieved by Licensee for the first Licensed Product, as applicable, to achieve the relevant event ("**Milestone Event**"):

(a) $[…***…] upon […***…];

(b) $[…***…] upon […***…];

(c) $[…***…] upon […***…];

(d) $[…***…] upon […***…];

(e) $[…***…] upon […***…].

4. Subject to Paragraph C of this Article IV, Licensee will pay running royalties equal to […***…] percent ([…***…]%) of Net Sales of Licensed Products.

5. After approval of the first Licensed Product, for each Licensed Product that is a "New Chemical Entity" covered by the Patent Rights, Licensee will make a payment to CMCC:

(a) equal to $[…***…] upon […***…] and

(b) equal to $[…***…] upon […***…].

The payments described in this Paragraph A.5 of Article IV of this Agreement will be due within […***…] days of receipt of the relevant approval.

6. In any year in which there is no sponsored research agreement in effect or royalties from Net Sales are not payable under this Agreement, an annual license maintenance fee shall be due as set forth below, which shall be payable on the anniversary date of the Effective Date for each subsequent year thereafter as set forth below during the exclusive license period of this Agreement:

(a) $[…***…] upon the second anniversary of the Effective Date

(b) $[…***…] upon the third anniversary of the Effective Date

(c) $[…***…] upon the fourth anniversary of the Effective Date

(d) $[…***…] upon the fifth anniversary of the Effective Date

Such maintenance fees shall be creditable against royalty rates due CMCC but in no year shall the credit be greater than […***…] percent of the royalty due CMCC.

7. In the event Licensee has granted sublicenses under this Agreement:

(a) […***…] percent ([…***…]%) of any and all payments, excluding royalties on Net Sales which will be governed as described in Paragraph A.4 of this Article IV, received by Licensee from said Sublicensees directly in consideration of granting of the sublicense under Licensee's rights under this Agreement, including but not limited to sublicense issue fees, maintenance fees, lump sum payments and milestone payments (it being understood that the milestone payments set forth in Paragraph A, Section 3 of this Article IV shall not apply). For purposes of calculating consideration for the grant of a sublicense under this Paragraph 7, the following will be excluded: royalties received by Licensee or its Affiliates for Net Sales; payment for fully loaded research and development expenses (including FTE costs), reimbursement of patent expenses, and equity investments equal to Fair Market Value made by Sublicensee(s) in the Licensee.

(b) Notwithstanding subparagraph (a) above, Licensee agrees to pay to CMCC […***…] percent ([…***…]%) of all consideration received from a Sublicensee directly for the grant of a sublicense under Licensee's rights in this Agreement if such sublicense is granted (1) within […***…] of the Effective Date, and (2) no rights to additional intellectual property are granted to such Sublicensee other than under the Patent Rights and other rights in-licensed by Licensee under the agreement dated August 4, 2006 between Licensee and […***…].

B. No multiple royalties shall be payable because any Licensed Product, its manufacture, use, lease or sale are or shall be covered by more than one patent or patent application under the Patent Rights of this Agreement.

C. To the extent that Licensee is necessarily required to obtain, subsequent to the Effective Date of this Agreement licenses to third party patents or other intellectual property that dominates or is dominated by the Patent Rights in order to practice the Patent Rights or to produce or sell Licensed Products in a particular country and avoid infringing such third-party intellectual property, Licensee may deduct from the running royalty due to CMCC for that country […***…] percent ([…***…]%) of the royalties due on such third party patents or intellectual property up to an amount equal to […***…] percent ([…***…]%) of royalties due hereunder, provided that such deduction reflects a pro rata or other fair apportionment among other parties due royalties from Licensee for such third party patents or other intellectual property and in no event will royalties be reduced lower than one and […***…] percent ([…***…]%) based on such deduction. Licensee will document such deductions in royalty reports to CMCC under this Agreement.

Notwithstanding anything in this Agreement to the contrary, in respect of licenses to third party patents or other intellectual property that cover the active pharmaceutical ingredient of a Licensed Product that Licensee has or obtains in order to practice the Patent Rights or to make, use and sell the Licensed Products in a particular country and avoid infringing such third-party intellectual property, Licensee may deduct from the running royalty due to CMCC for that country […***…] percent ([…***…]%) of the royalties due on such third party patents or intellectual property up to an amount equal to […***…] percent ([…***…]%) of royalties due

hereunder, provided that such deduction reflects a pro rata or other fair apportionment among other parties due royalties from Licensee for such third party patents or other intellectual property and in no event will royalties be reduced lower than one and […***…] percent ([…***…]%) based on such deduction; and provided further that in the case of intellectual property covered by the agreement between Licensee and […***…] dated August 4, 2006, royalties on Licensed Products may not be reduced lower than […***…] percent ([…***…]%) based on such deduction.

D. Royalty payments shall be paid in United States dollars in Boston, Massachusetts, or at such other place as CMCC may reasonably designate consistent with the laws and regulations controlling in any foreign country. If the currency conversion shall be required in connection with the payments of royalties or other amounts hereunder, the conversion shall be made by using the exchange rate prevailing in the east coast edition of the Wall Street Journal on the last business day of the calendar quarter of the applicable reporting period to which such royalty payments relate.

E. Payment of royalties specified in this Article shall be made by Licensee to CMCC within […***…] days after March 31, June 30, September 30 and December 31 each year during the Term of this Agreement covering the quantity of Licensed Products sold by Licensee during the preceding calendar quarter. The royalty payments set forth in this Agreement shall, if overdue, bear interest until payment at a per annum rate of […***…] percent ([…***…]%) above the prime rate in effect at Bank of America, on the due date. The payment of such interest shall not foreclose CMCC from exercising any other rights it may have as a consequence of the lateness of any payment.

ARTICLE V
REPORTS, RECORDS AND RELATED MATTERS

A. Licensee shall keep, and shall require its Affiliates and Sublicensees to keep, full, true and accurate books and records, including books of account in accordance with generally accepted accounting principles, in sufficient detail to enable CMCC to determine Licensee's compliance with this Agreement, including diligence with respect to the development as described in Article III, and the royalty and other amounts payable to CMCC under this Agreement. Said books and records, including books of account, shall be kept at Licensee's principal place of business or the principal place of business of the appropriate division of Licensee to which this Agreement relates. Said books and the supporting data shall be retained for at least six (6) years following the end of the calendar year to which they pertain.

B. CMCC shall have the right to inspect, copy and audit, on fifteen (15) days advance written notice, the books described above from time to time to verify the reports provided for herein or compliance in other respects with this Agreement. CMCC or its agents shall perform such activities at CMCC's own expense during Licensee's regular business hours and for no other purpose. Inspectors will be obligated to enter into a written obligation of confidentiality with Licensee and/or any applicable Sublicensee.

C. Until the later of First Commercial Sale of a Licensed Product or the last development milestone, and for such later periods as CMCC shall by written request from time to time require, Licensee shall provide to CMCC, at least annually, status reports with reasonable detail regarding the activities of Licensee and Licensee's Affiliates and Sublicensees relative to achieving the objectives set forth in the Development Plan, (" **Annual Status Report**"), in a timely manner, including but not limited to (i) a summary explanation of research and development progress towards the milestones described in the Development Plan, (ii) expenditure of financial resources relevant to demonstrate where good faith efforts and adequate resources have been applied to achieve the goals of the then current Development Plan consistent with Reasonably Diligent Efforts, (iii) any changes to dates included in the immediately prior version of the Development Plan (*e.g.*, technical difficulties or delays in the development, preclinical or clinical studies, or regulatory process and means of addressing such difficulties or delays, including application of suitable resources), (iv) actions of all Sublicensees, strategic alliances, and Affiliates directed towards achievement of the Development Plan, (v) the progress of obtaining regulatory approvals, and (vi) an updated Development Plan.

D. After the First Commercial Sale, within […***…] days after the end of each calendar quarter, Licensee shall deliver to CMCC, at Licensee's expense, true and accurate reports for the said preceding quarter, giving such particulars of the business conducted by Licensee, its Affiliates and its Sublicensees under this Agreement as shall be pertinent to CMCC determining compliance with this Agreement of royalties due under this Agreement. Reports shall include at least the following:

1. Number of Licensed Products manufactured and sold.

2. Total Net Sales for Licensed Products sold, by country.

3. Accounting for all Licensed Products sold.

4. Applicable deductions.

5. Total royalties payable to CMCC.

6. Names and addresses of all Sublicensees of Licensee.

7. Payments received by Licensee from Affiliates and Sublicensees relevant for Licensee, obligations under Article IV, Paragraph A.

8. Licensed Products manufactured and sold to the U.S. Government. No royalty obligations shall arise from sales or use by, for or on behalf of the U.S. Government in view of a royalty-free, nonexclusive license that may heretofore have been granted to the U.S. Government.

9. Royalties and Fees received from Sublicensees.

10. A listing, with brief descriptions, of any intellectual property arising from or related to Licensee's or any Sublicensee's practice of the Patent Rights.

E. On or before the […***…] day following the close of Licensee's fiscal year, Licensee shall provide CMCC financial statements for the preceding fiscal year, including without limitation all statements reflecting profits and losses from operations, cash balances, and any management letter as described in a statement made to Licensee's shareholders.

F. Licensee acknowledges that policies of CMCC, Harvard Medical School and affiliated organizations, relating to, *inter alia*, conflicts of interest and intellectual property, may affect certain direct and indirect arrangements between inventors named on patents or patent applications under the Patent Rights and Licensee or related organizations. During the Term of this Agreement, Licensee shall notify CMCC in writing at least 30 days before Licensee, or any affiliate of Licensee, or any organization owned or controlled by an officer or director of Licensee, enters into any agreement other than this License with or involving the inventor(s) of the Invention, or members of their laboratories known to Licensee to be employees of CMCC, or Children's Hospital Boston, or their supporting organizations, whether relating to sponsored research, consulting, board membership, securities, or otherwise. Licensee's notice to CMCC shall include a detailed description of all proposed terms and conditions. Licensee shall not enter into such an agreement if it would violate such policies unless the terms and conditions of the agreement have been duly approved pursuant to such policies. Licensee agrees to respond to reasonable inquiries from CMCC concerning specific individuals identified by CMCC and whether such individuals are party to any agreement with Licensee pertaining to the Patent Rights.

ARTICLE VI
PATENT PROSECUTION

A. CMCC shall apply for, seek prompt issuance of, and maintain during the term of this Agreement the Patent Rights set forth in Appendix 2. The specifications of any such patent application and any patent issuing thereon shall state, to the extent applicable, "This invention was made with government support under [contract] awarded by [Federal agency]. The government has certain rights in this invention." The prosecution, filing and maintenance of all Patent Rights applications and patents shall be the primary responsibility of CMCC in its sole discretion, except that Licensee shall have reasonable opportunities to advise CMCC and shall cooperate with CMCC in the preparation, filing, prosecution and maintenance of the Patent Rights. CMCC reserves the sole right to make all final decisions with respect to the preparation, filing, prosecution and maintenance of such patent applications and patents.

B. Licensee shall reimburse CMCC for all out-of-pocket patent costs, past, present and future incurred by CMCC for the preparation, filing, prosecution and maintenance of patents underlying the Patent Rights provided CMCC has not granted a license under Patent Rights to any third party. In the event CMCC grants a license under Patent Rights to a third party, Licensee's obligation to pay on-going patent costs under this Agreement will be reduced in proportion to the number of additional licensees. CMCC will notify Licensee promptly in writing when it grants a license under Patent Rights to any third party. CMCC will notify

Licensee of CMCC's determination of the amount of reduction of a payment due under this Paragraph B. Patent costs are currently approximately $[…***…]. Licensee shall pay such current costs after the Effective Date of this Agreement and prior to February 1, 2007. Upon request of CMCC, and only upon such CMCC request, Licensee agrees to have CMCC's patent counsel directly bill Licensee and Licensee shall directly pay such invoices in compliance with such counsel's customary business terms, but in any event within […***…] days. If Licensee elects to no longer pay the expenses of a patent application or issued patent included within Patent Rights in a given portion of the Territory, Licensee shall notify CMCC not less than […***…] days prior to such action and shall thereby surrender its rights under such patent application, or issued patent to that Field of Use in that portion of the Territory. Thereafter, Licensee will have no further financial obligations with respect to patent expenses for such patent application or issued patent and the license granted under Patent Rights in this Agreement will not include such patent applications or issued patent. Such notice shall not relieve Licensee from responsibility to reimburse CMCC for patent-related expenses incurred prior to the expiration of the […***…]-day notice period (or such longer period specified in Licensee's notice). CMCC shall then be free to license its rights to that patent or patent application to any other party on any other terms.

C. In the event CMCC elects, in its sole discretion, not to pursue, maintain or retain a particular Patent Right licensed to Licensee hereunder, then CMCC shall so notify Licensee and, subject to the rights of the United States government and any other contractual obligations to research sponsors, CMCC may, in its sole discretion, and on such terms if any that the parties may negotiate, authorize Licensee to assume the filing, prosecution and/or maintenance of such application or patent at Licensee's expense. In such event, CMCC shall provide to Licensee any authorization necessary to permit Licensee to pursue and/or maintain such Patent Right, on such economic and other terms as the parties shall mutually agree.

ARTICLE VII
INFRINGEMENT

A. Licensee and CMCC shall each inform the other promptly in writing of any alleged infringement by a third party of the Patent Rights in the Field of Use within the scope of this Agreement and of any available evidence thereof.

B. During the Term of this Agreement, CMCC shall have the right, but shall not be obligated, to prosecute at its own expense any infringement of the Patent Rights and, in furtherance of such right, Licensee hereby agrees that CMCC may include Licensee as a party plaintiff in any such suit, without expense to Licensee. The total cost of any such infringement action commenced or defended solely by CMCC shall be borne by CMCC. Any recovery of damages by CMCC for such suit shall be applied first in satisfaction of any unreimbursed expenses and legal fees of CMCC hereunder. CMCC shall keep any recovery or damages for past infringement derived therefrom, except recovery that is awarded with respect to lost sales of Licensed Products, which amount of recovery will be paid to Licensee, less any amount of royalty that would have been due to CMCC if such amount were Net Sales made by Licensee, its Affiliates or Sublicensees. CMCC agrees not to enter into any settlement, consent judgment or other voluntary final disposition of the suit referenced above without first consulting Licensee.

C. If within three (3) months after having been notified of any alleged infringement, CMCC shall have been unsuccessful in persuading the alleged infringer to desist and shall not have brought and shall not be diligently prosecuting an infringement action, or if CMCC shall notify Licensee of its intention not to bring suit against any alleged infringer then, Licensee shall have the right, but shall not be obligated, to prosecute at its own expense any infringement of the Patent Rights, provided, however, that such right to bring such an infringement action shall remain in effect only for so long as the license granted hereunder remains exclusive. No settlement, consent judgment or other voluntary final disposition of the suit may be entered into without the consent of CMCC, which consent shall not be unreasonably withheld. Licensee shall indemnify CMCC and M.l.T. against any order for costs that may be made against CMCC in such proceedings.

D. In the event Licensee shall undertake the enforcement and/or defense of the Patent Rights by litigation pursuant to Paragraph C of this Article VII, Licensee may withhold up to […***…] percent ([…***…]%) of the payments otherwise thereafter due to CMCC under Article IV above and apply the same toward reimbursement of up to […***…] percent ([…***…]%) of Licensee's expenses, including reasonable attorney's fees, in connection therewith. Any recovery of damages by Licensee for each such suit shall be applied first in satisfaction of any unreimbursed expenses and legal fees of CMCC and Licensee relating to such suit and next toward reimbursement of CMCC for any payments under Article IV past due or withheld and applied pursuant to this Article VII. The balance remaining from any such recovery will be kept by Licensee, provided that such amount will be treated as Net Sales for purposes of calculating royalties due to CMCC under this Agreement.

E. In the event that a declaratory judgment action alleging invalidity or noninfringement of any of the Patent Rights shall be brought against Licensee, CMCC, at its option, shall have the right, within thirty (30) days after commencement of such action, to intervene and participate in the defense of the action at its own expense.

F. In any infringement suit which either party may institute to enforce the Patent Rights pursuant to this Agreement, the other party hereto shall cooperate in all reasonable respects and, to the extent reasonably possible, have its employees testify when requested and make available relevant records, papers, information, samples, specimens, and the like.

G. Licensee shall during the exclusive period of this Agreement have the sole right subject to the terms and conditions hereof to sublicense any alleged infringer for future use of the Patent Rights to the extent licensed by this Agreement. Any upfront fees paid to Licensee as part of such a sublicense shall be shared between Licensee and CMCC in accordance with Article IVA.7.

ARTICLE VIII
UNIFORM INDEMNIFICATION AND INSURANCE PROVISIONS

A. Licensee shall indemnify, defend and hold harmless CMCC and M.I.T., its corporate affiliates, current or future directors, trustees, officers, faculty, medical and professional staff, employees, students and agents and their respective successors, heirs and

assigns (the "**Indemnitees**"), against any claim, liability, cost, damage, deficiency, loss, expense or obligation of any kind or nature (including without limitation reasonable attorneys' fees and other costs and expenses of litigation) incurred by or imposed upon the Indemnitees or any one of them in connection with any claims, suits, actions, demands or judgments arising out of any theory of product liability (including, but not limited to, actions in the form of tort, warranty, or strict liability) concerning any product, process or service made, used or sold pursuant to any right or license granted under this Agreement, except to the extent arising from the negligence or willful misconduct of an Indemnitee.

B. Licensee agrees, at its own expense, to provide attorneys reasonably acceptable to CMCC to defend against any actions brought or filed against any party indemnified hereunder with respect to the subject of indemnity contained herein, whether or not such actions are rightfully brought.

C. Beginning at the time as any such product, process or service is being commercially distributed or sold (other than for the purpose of obtaining regulatory approvals) by Licensee or by a sublicensee, Affiliate or agent of Licensee, Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in amounts not less than $[…***…] per incident and $[…***…] annual aggregate and naming the Indemnitees as additional insureds. Such commercial general liability insurance shall provide (i) product liability coverage when applicable and (ii) contractual liability coverage for Licensee's indemnification under Article VIII, Paragraphs A through C of this Agreement. If Licensee elects to self-insure all or part of the limits described above (including deductibles or retentions which are in excess of $[…***…] annual aggregate), such self-insurance program must be acceptable to CMCC and the Risk Management Foundation of the Harvard Medical Institutions, Inc. The minimum amount of insurance coverage required under this Article VIII, Paragraph D, shall not be construed to create a limit of Licensee's liability with respect to its indemnification under Article VIII, Paragraphs A through C of this Agreement.

D. Licensee shall provide CMCC with written evidence of such insurance upon request of CMCC. Licensee shall provide CMCC with written notice at least […***…] days prior to the cancellation, non-renewal or material change in such insurance. Notwithstanding any other term of this Agreement, if Licensee does not obtain replacement insurance providing comparable coverage within such […***…] day period prior to the effective date of cancellation, CMCC shall have the right to terminate this Agreement effective at the end of such […***…] day period without written notice of any additional waiting periods.

E. Licensee shall maintain such commercial general liability insurance during (i) the period that any such product, process or service is being commercially distributed or sold (other than for the purpose of obtaining regulatory approvals) by Licensee or by a sublicensee, Affiliate or agent of Licensee and (ii) a reasonable period after the period referred to above, which in no event shall be less than […***…] years.

F. The provisions of this Article VIII shall survive expiration or termination of this Agreement.

G. CMCC represents and warrants that it has the full authority to enter into this Agreement, and to the best knowledge of the Intellectual Property Office, it has the full authority to grant the rights under Patent Rights and other intellectual property as set forth in this Agreement.

H. EXCEPT AS EXPLICITLY PROVIDED HEREIN, CMCC MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OF NON-INFRINGEMENT, WITH RESPECT TO ANY MATTER WITHIN THE SCOPE OF THIS AGREEMENT, INCLUDING WITHOUT LIMITATION ANY WARRANTY WITH RESPECT TO THE PATENT RIGHTS, LICENSED PRODUCTS, OR ANY PATENT, TRADEMARK, SOFTWARE, TRADE SECRET, TANGIBLE RESEARCH PROPERTY, INFORMATION OR DATA LICENSED OR OTHERWISE PROVIDED TO LICENSEE HEREUNDER, AND HEREBY DISCLAIMS THE SAME.

I. NEITHER PARTY WILL BE LIABLE UNDER THIS AGREEMENT FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES. EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

ARTICLE IX
COMPLIANCE WITH LAWS; EXPORT CONTROLS

Licensee shall comply with all applicable laws and regulations, including, without limitation, statutes and regulations affecting drug testing, development, marketing and distribution; laws and implementing regulations of the Department of Commerce governing intellectual property in federally-funded inventions; and Export Administration Regulations of the United States Department of Commerce issued pursuant to the Export Administration Act of 1979 (50 App. U.S.C. § 2401 *et seq.*). Licensee understands and acknowledges that transfer of certain technical data, computer software, laboratory prototypes and other commodities is subject to United States laws and regulations controlling their export, some of which prohibit or require a license for the export of certain types of technical data, to certain specified countries. CMCC neither represents that a license shall not be required, nor that if required, it shall be issued. Licensee hereby agrees and gives written assurance that it will comply with all United States laws and regulations, and any applicable similar laws and regulations of any other country, controlling the export of commodities and technical data, that it will be solely responsible for any violation of such by Licensee and/or its Affiliates and/or Sublicensees, and that it will defend and hold CMCC and M.I.T., its affiliates and their officers, directors, employees, agents, and medical staff harmless in the event of any legal action of any nature occasioned by such violation, and any action by any governmental agency or authority, or any other party, relating to any asserted illegality or regulatory violation in the development, production, approval, marketing, sale, storage, manufacture, distribution, export or commercialization of Licensed Products.

ARTICLE X
NON-USE OF NAMES

Licensee represents and agrees that it will not use the name, names, logos or trademarks of the CMCC and M.I.T. or any of its corporate affiliates, nor the name or photograph or other depiction of any employee or member of the staff of CMCC and M.I.T. or such affiliates, nor any adaptation of any of the foregoing, in any advertising, promotional, or sales literature without, in each case, prior written consent from CMCC and M.I.T. and from the individual staff member, employee, or student if such individual's name, photograph or depiction is used. Notwithstanding the above, Licensee may state that it is licensed by CMCC under one or more patents and/or applications consistent with this Agreement, and Licensee may comply with disclosure requirements of all applicable laws relating to its business, including United States and state security laws. In addition, Licensee may refer to publications by employees of CMCC in the scientific literature.

ARTICLE XI
ASSIGNMENT

CMCC may assign this Agreement to Children's Hospital Boston or another Affiliate at any time without the prior written consent of Licensee. Except as otherwise provided herein, this Agreement is not assignable or delegable, in whole or in part, by Licensee without the prior written consent of CMCC acting through an authorized designee, and any purported assignment otherwise shall be void and of no effect.

Notwithstanding the foregoing, in the event Licensee merges with another entity, is acquired by another entity, or sells all or substantially all of its assets to which this Agreement relates to another entity, Licensee may assign its rights and obligations hereunder to the surviving or acquiring entity if: (i) Licensee is not then in breach of this Agreement; (ii) the proposed assignee demonstrates that it has a net worth at least equivalent to the net worth Licensee had as of the date of this Agreement; (iii) the proposed assignee demonstrates that it has or will have sufficient available resources, including liquid financial resources, management experience, and sufficient scientific, business and other expertise comparable or superior to Licensee, that will be committed in order to satisfy its obligations hereunder; (iv) Licensee provides written notice of the assignment to CMCC, together with documentation satisfactory to CMCC sufficient to demonstrate the requirements set forth in subparagraphs (i) through (iii) above, at least thirty (30) days prior to the effective date of the assignment; and (v) CMCC receives from the assignee, in writing, at least thirty (30) days prior to the effective date of the assignment: (a) reaffirmation of the terms of this Agreement; (b) an agreement to be bound by the terms of this Agreement; and (c) an agreement to perform the obligations of Licensee under this Agreement.

ARTICLE XII
DISPUTE RESOLUTION AND ARBITRATION

A. Any and all claims, disputes or controversies arising under, out of, or in connection with this Agreement, which have not been resolved by good faith negotiations

between the parties shall be resolved by final and binding arbitration in Boston, Massachusetts, in accordance with the rules then obtaining applicable to the appointment of a single arbitrator of the American Health Lawyers Association, or in the event such arbitration is not then available under those rules, the rules of the American Arbitration Association ("**AAA**"). All expenses and costs of the arbitrators and the arbitration in connection therewith will be shared equally, except that each party will bear the costs of its prosecution and defense, including without limitation attorneys fees and the production of witnesses and other evidence. Any award rendered in such arbitration shall be final and may be enforced by either party.

B. Notwithstanding the foregoing, nothing in this Agreement shall be construed to waive any rights or timely performance of any obligations existing under this Agreement, including without limitation Licensee's obligations to make royalty and other payments, and also, unless CMCC has terminated the License, Licensee's obligation to continue due diligence and development obligations. Notwithstanding any other provision of this Agreement, Licensee agrees that it shall not withhold or offset such payments, and agrees that Licensee's sole remedy for alleged breaches by CMCC is pursuant to this Article XII.

ARTICLE XIII
TERM AND TERMINATION

A. The Term of this Agreement shall be fifteen (15) years or the life of the last expiring Patent Right, whichever period is the longer term.

B. Notwithstanding Article XII of this Agreement, CMCC may terminate this Agreement immediately upon (i) the bankruptcy, insolvency, liquidation, dissolution or cessation of operations of Licensee; or (ii) the filing of any voluntary petition for bankruptcy, dissolution, liquidation or winding-up of the affairs of Licensee; or (iii) any assignment by Licensee for the benefit of creditors; or (iv) the filing of any involuntary petition for bankruptcy, dissolution, liquidation or winding-up of the affairs of Licensee which is not dismissed within ninety (90) days of the date on which it is filed or commenced; or (v) upon any final judicial or administrative determination that this Agreement violates, or if continued would violate, in a substantial manner, any provision of the Federal Internal Revenue Code, applicable rights of the United States or obligations of CMCC under Title 15 of the United States Code, or other Federal or State laws applicable to CMCC

C. CMCC may terminate this Agreement upon thirty (30) days' prior written notice in the event of Licensee's failure to pay to CMCC royalties due and payable hereunder in a timely manner, unless Licensee shall make all such payments to CMCC within said thirty (30) day period. Notwithstanding Article XII of this Agreement, upon the expiration of the thirty (30) day period, if Licensee shall not have made all such payments to CMCC, the rights, privileges and licenses granted hereunder shall terminate without further action by CMCC. Licensee may pay amount due under protest and the ultimate amount due determined under dispute resolution.

D. Except as otherwise provided in Paragraphs B and C above, and notwithstanding Article XII of this Agreement, in the event that Licensee shall default in the performance of any material obligations under this Agreement, and the default has not been remedied to CMCC's

satisfaction within sixty days (60) after the date of notice in writing of such default, CMCC may by written notice to Licensee terminate this Agreement effective immediately or upon such date as CMCC, in its sole discretion, shall designate in such notice.

E. Licensee shall have the right to terminate this Agreement at any time upon four (4) months' prior written notice to CMCC.

F. Upon termination of this Agreement for any reason, nothing herein shall be construed to release either party from any obligation that matured prior to the effective date of such termination.

ARTICLE XIV
PAYMENTS, NOTICES, AND OTHER COMMUNICATIONS

All notices, reports and/or other communications made in accordance with this Agreement shall be sufficiently made or given if delivered by hand, delivered by facsimile (with mechanical confirmation of transmission), or sent by overnight receipted mail, postage prepaid, or by reasonable, customary and reliable commercial overnight carrier in general usage, and addressed as follows:

In the case of CMCC:

Chief Intellectual Property Officer
Intellectual Property Office
Children's Hospital Boston
300 Longwood Avenue
Boston, MA 02115

Payments shall be transmitted by reliable means to the same addressee, payable to Children's Hospital Boston and annotated with "CMCC Agreement # 6232" as well as written correspondence of what the payment is for.

In the case of Licensee:

Peter Barrett
Chairman, Zafgen
Senior Partner, Atlas Venture
890 Winter Street, Suite 320
Waltham, MA 02451

and

Zafgen, Inc.
One Broadway, 16th Floor
Cambridge, MA 02142

or such other address as either party shall notify the other in writing. NOTICE SHALL BE EFFECTIVE UPON RECEIPT.

ARTICLE XV
GENERAL PROVISIONS

A. All rights and remedies hereunder will be cumulative and not alternative. This Agreement shall be construed and governed by the laws of the Commonwealth of Massachusetts.

B. This Agreement may be amended only by written agreement signed by the parties.

C. It is expressly agreed by the parties hereto that CMCC and Licensee are independent contractors and nothing in this Agreement is intended to create an employer relationship, joint venture, or partnership between the parties. No party has the authority to bind the other.

D. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all proposals, representations, negotiations, agreements and other communications between the parties, whether written or oral, with respect to the subject matter hereof. Where inconsistent with the terms of any contemporaneous related agreements (such as sponsored research agreements), terms in this Agreement shall control.

E. If any provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be impaired thereby.

F. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original as against the party whose signature appears thereon, but all of which taken together shall constitute but one and the same instrument.

G. The failure of either party to assert a right to which it is entitled, or to insist upon compliance with any term or condition of this Agreement, shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.

H. Licensee agrees to mark any Licensed Products sold in the United States with all applicable United States patent numbers. All Licensed Products shipped to or sold in other countries shall be marked in such a manner as to conform with the patent laws and practices of the country of manufacture or sale.

I. Each party hereto agrees to execute, acknowledge and deliver such further instruments as may be necessary or appropriate to carry out the purposes and intent of this Agreement.

J. The paragraph headings contained in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

K. The signatories below are duly authorized to execute this Agreement.

L. The parties agree that during the course of this Agreement, each may come into possession of confidential and/or proprietary materials or information through intentional or accidental disclosure by the other. The parties agree to preserve the confidentiality of all such information known to be confidential or proprietary, unless the disclosing party consents in writing, or unless the confidentiality of the material is lost through other parties not under obligations to preserve its confidentiality.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date last written below.

CHILDREN'S MEDICAL CENTER CORPORATION

By: /s/ Brenda Manning, Ph.D.
Brenda Manning, Ph.D.
Director, Intellectual Property Officer

Date: January 4, 2007

LICENSEE (ZAFGEN, INC.)

By: /s/ Peter Barrett
Peter Barrett
Chairman

Date: January 4, 2007

Confidential Treatment Requested

APPENDIX 1

Inter-Institutional Agreement

Confidential Treatment Requested

INVENTION ADMINISTRATION AGREEMENT

(CMCC #624/MIT #7760)

This Agreement, effective the third day of August, 2004 (the " **Effective Date**"), is by and between Children's Medical Center Corporation (" **CMCC**") a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts with offices at 300 Longwood Avenue, Boston, MA 02115, USA and the Massachusetts Institute of Technology ("**MIT**") a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts with offices at 77 Massachusetts Avenue, Cambridge, MA 02139, USA. The Institutions shall hereinafter also be referred to collectively as the **Parties**.

I BACKGROUND

1.1 […***…] who assigns her patent rights jointly to CMCC and MIT, […***…] who assigns his patent rights to CMCC and […***…] who assigns his patent rights to MIT are joint inventors of "[…***…]" (" **Invention**"), further described in the issued patents and patent applications listed in Appendix A.

1.2 The Parties desire that CMCC administer their respective undivided interests in the Invention.

1.3 The Parties desire that the Invention be successfully and diligently commercially developed and used for the good of mankind.

1.4 The Parties have determined that the cooperation and commercial development contemplated by this Agreement are consistent with their missions of research, education, teaching, and clinical care and with their status as not for-profit institutions.

1.5 Parties agree that MIT has declined to continue paying for all foreign application counterparts of the Patent Rights and will receive none of the Licensing Income generated from a license to the foreign patent rights, except as is necessary to reimburse MIT for any remaining Sunk Costs.

II. DEFINITIONS

2.1 "**Inventors(s)**" shall mean […***…] either collectively or individually.

2.2 "**Patent Rights**" shall mean any U.S. patent application (including Provisional Applications) which has or might be filed on the Invention, any continuations, divisions, claims of U.S. continuations-in-part that name any Inventor that are directed to the subject matter specifically described in such applications and any patents which issue on said application including patents of addition, reissue, or re-examination, as well as any foreign counterparts and any patents which issue thereon. Without limiting the foregoing, Patent Rights shall include applications and patents listed in Appendix A.

2.3 "**Licensing Income**" shall mean gross proceeds received by CMCC from licensing or optioning Patent Rights, including but not limited to equity, license issue and maintenance fees, minimum royalties, earned royalties, milestone payments and the like, but shall not include payments received for reimbursement of Patent Prosecution Expenses or funds received for research support.

2.4 "**Patent Prosecution Expenses**" shall mean all out-of-pocket expenses incurred by CMCC for the preparation, filing, prosecution, maintenance, and defense or enforcement of Patent Rights, as well as any patent expenses incurred by MIT for the prosecution of Patent Rights prior to the Effective Date of this agreement.

2.5 "**Licensing Expenses**" shall mean any expenses incurred by CMCC in the marketing and licensing of Patent Rights.

2.6 "**Administrative Fee**" shall mean […***…] percent ([…***…]%) of the remaining balance of Licensing Income after deduction of Patent Prosecution Expenses not reimbursed by a licensee, which shall be retained by CMCC in consideration of its administration of Invention.

2.7 "**Net Income**" shall mean Licensing Income less any unreimbursed Patent Prosecution Expenses and less the Administrative Fee.

III. ASSIGNMENT, TILING, PROSECUTION, MAINTENANCE AND DEFENSE/ENFORCEMENT OF PATENT RIGHTS

3.1 Upon the Effective Date, CMCC shall assume sole responsibility for filing, prosecution, maintenance and defense/enforcement of Patent Rights. All patent applications within Patent Rights shall be assigned jointly to the Parties, if such applications are jointly owned, each of which shall have an undivided interest therein. CMCC shall provide or request legal counsel to provide MIT with all serial numbers and filing dates, as well as copies of patent applications, office actions and other Patent Office correspondence, including copies of all issued patents. Copies of the above material shall be provided promptly so that MIT shall have an opportunity to comment.

3.2 The Parties shall share U.S. Patent Prosecution Expenses: 50% to CMCC and 50% to MIT. CMCC shall be responsible for 100% of Licensing Expenses, but will not receive any income in consideration for any Licensing Expenses incurred except as included within the Administrative Fee.

3.3 Foreign Patent Prosecution Expenses incurred after the effective date of this agreement (a) shall be paid 100% by CMCC, and (b) shall not be the responsibility of MIT. By so doing (a) subject to the rights of any Inventor, CMCC may proceed with foreign filings at its own expense and licensing of resulting rights without consulting MIT, and (b) MIT relinquishes any right to Licensing Income resulting from foreign filings, except as is necessary to reimburse MIT for any remaining Sunk Costs.

3.4 CMCC shall not abandon the prosecution of any U.S. patent application (except in favor of a continuation or continuation-in-part application, and except filings MIT has declined to participate in under Section 3.3) without notifying MIT at least thirty (30) days in advance of any applicable deadline and allowing MIT the opportunity to prosecute such patent application.

3.5 The Parties shall cooperate fully regarding all patent filing, prosecution, maintenance, and defense/enforcement.

3.6 The Parties shall each assume responsibility for reporting the Invention to government and other sponsors as may be required. MIT shall provide CMCC with copies of reports to sponsors of the research.

3.7 On and after the effective date of this agreement, CMCC shall submit to MIT itemized invoices for fifty percent (50%) of the U.S. Patent Prosecution Expenses on a quarterly basis. MIT shall reimburse CMCC within sixty (60) days of the invoice date. It is understood that as of the Effective Date, the Parties have incurred Patent Prosecution Expenses and received income as detailed in Appendix B. Should any License Agreement entered into by CMCC on behalf of MIT not obtain full reimbursement for CMCC's Sunk Costs (as defined in Appendix B), and MIT Sunk Costs (as defined in Appendix B), Licensing Income shall first be used to pay the unreimbursed portion of MIT Sunk Costs and CMCC Sunk Costs. Any remaining and future Licensing Income shall be distributed according to Section 5.1.

3.8 The technology transfer office of each Party agrees that it will keep confidential, and shall not disclose to any third party, any information or data of any confidential nature contained in any patent application claiming the Invention until such patent application has been filed. The Parties shall use reasonable efforts to keep each other, and the relevant patent attorneys, informed of any proposed publications or oral presentations to be made by its employees or staff disclosing the Invention, and to provide the other Party with a copy of such proposed manuscript or presentation prior to the publication or presentation.

IV. LICENSING

4.1 CMCC shall have sole responsibility for licensing Patent Rights. CMCC hereby agrees to use reasonable efforts to license Patent Rights in a commercially reasonable manner and in furtherance of the public interest. The mere failure of CMCC to consummate a licensing arrangement(s) shall not be deemed a breach of CMCC's obligations hereunder.

4.2 CMCC shall keep MIT reasonably informed of its licensing efforts and shall provide MIT with an opportunity to review a substantially complete draft of any license or option agreement(s) at least fifteen (l5) days prior to execution thereof.

4.3 CMCC shall provide MIT with copies of all signed license and option agreements and all extensions thereof and amendments thereto.

4.4 CMCC shall be responsible for administering all license and option agreements and shall keep MIT reasonably informed of licensee progress, and shall promptly respond to-any requests for information.

V. REPORTS, PAYMENTS AND ACCOUNTING

5.1 Licensing Income received from licensing Patent Rights as well as any tangible material associated therewith shall be distributed as follows:

a) First, any Patent Prosecution Expenses not being reimbursed by the licensee shall be deducted, commencing pro rata with each party's Sunk Costs (as defined in Exhibit B). Both CMCC and MIT shall be reimbursed to the extent of each Party's obligations and right to reimbursement under Section 3.2.

b) Second, in consideration of its efforts to administer and license Patent Rights, CMCC shall receive […***…] percent ([…***…]%) of the balance of Licensing Income as an Administrative Fee.

c) Third, CMCC will distribute to all the inventors (including MIT inventors) according to CMCC internal policy.

d) Fourth, the remaining balance shall be divided into income based on U.S. patents and income based on foreign patents, and of the income based on U.S. patents, CMCC shall receive 50% and MIT shall receive 50%, offset however by any unsatisfied obligation under Section 3.2.

e) Each Institution shall be solely responsible for any asserted claim of its own Inventor(s), and hereby agrees to indemnify and hold harmless the other Institution(s) against any Inventor's claims so asserted, including claims arising from the Institution's default on meeting any obligations under this Agreement.

(f) The parties recognize that Licensing Income in the form of licensee equity, whether as securities, warrants or otherwise, may be subject to special restrictions arising from its unregistered status, federal and state laws and regulations, and the provisions of shareholder agreements. CMCC may negotiate for direct issuance of such equity to MIT, and MIT's direct participation in shareholder agreements with legal terms substantially identical to those governing the participation of CMCC, and relative financial terms corresponding to the distribution ratio stated in section 3.2. MIT will not withhold its consent to such agreements unless they would violate policies or common practices of MIT or applicable laws or regulations. The deductions set out in paragraph 5.1(b) shall be addressed by adjusting the number of shares issued to or for the benefit of each institution; and the provisions of paragraphs (d) and (e) of this Section 5.1 shall apply to all issuances and distributions of equity, as well as any distribution of cash proceeds.

5.2 If reimbursement is received from a third party for Patent Prosecution Expenses that have already been partially reimbursed by MIT or CMCC, CMCC and MIT shall both be reimbursed in a manner consistent with the Parties' obligations under Section 3.2.

5.3 CMCC shall keep complete and accurate accounts of all Patent Prosecution Expenses and of all Licensing Income received from licenses and shall permit MIT to engage a certified public accounting firm, reasonably acceptable to CMCC, to examine its records in order to verify the payments due or owing under this Agreement. MIT shall similarly cooperate in providing such documentation with respect to Patent Prosecution Expenses previously incurred by it, in particular but not solely in connection with due diligence by prospective or potential licensees.

5.4 CMCC shall distribute Net Income to MIT concurrently with the distributions it makes for its own inventions, but in any case no later than June 30 for the preceding calendar year. With such distribution, CMCC shall provide a financial accounting showing gross revenue received during the preceding calendar year and all deductions therefrom.

5.5 Upon request from MIT, CMCC shall provide a report, no more often than annually, setting forth the status of patent prosecution, licensing and commercial development.

VI. TERMINATION

6.1 This Agreement shall terminate upon the last to expire patent included within Patent Rights, or upon the abandonment of all Patent Rights, or upon the termination of all license agreements relating to the Invention, whichever event shall last occur.

6.2 At any time beginning three years after the Effective Date hereof, any Party may terminate this Agreement upon sixty (60) days' written notice to the other Party, provided however, that, no such termination shall be valid during an option or license period. In the event of termination, each Party shall still be responsible for its portion of Patent Prosecution and Licensing Expenses incurred prior to the effective date of termination, and the terminating party shall pay its outstanding portion of expenses by the end of the sixty (60) days. Upon termination according to this clause, each Party shall have all of the rights to which it was entitled prior to execution of the Agreement, including the right to license its rights to the Invention and the right to practice the Invention and Patent Rights for its internal research, scholarly, clinical and educational purposes.

VII. MISCELLANEOUS

7.1 This Agreement may not be assigned by either Party without the written consent of the other Party.

7.2 This Agreement contains the entire understanding of the Parties with respect to the Invention and Patent Rights and may be amended only by mutual written agreement by the Parties.

7.3 This Agreement shall be interpreted in and according to the laws of the Commonwealth of Massachusetts.

7.4 The provisions of this Agreement are separable and in the event that any of its provisions are determined to be invalid or unenforceable by a court of competent jurisdiction, such invalidity or unenforceability shall not in any way affect the validity or enforceability of the remaining provisions.

7.5 No waiver by either Party hereto of any breach or default of any of this Agreement's terms shall be deemed a waiver as to any subsequent and/or similar breach or default. Should either Party be in material breach of this Agreement and that breach is not corrected within sixty (60) days (or thirty (30) days as provided in Article 3.7), the non-breaching Party may take such breach as termination by the breaching Party as provided in Article VI.

7.6 Any notice to be given under this Agreement shall be in writing and shall be given by United States registered or certified mail, return receipt requested, addressed as follows:

If to CMCC:
Chief Intellectual Property Officer
Intellectual Property Office
Children's Hospital Boston
300 Longwood Avenue
Boston, MA 02115
Agreement # 5255

If to MIT:
Technology Licensing Office
Massachusetts Institute of Technology
5 Cambridge Center, Kendall Square
Room NE25-230
Cambridge, MA 02142
Attn: Director
M.I.T. Case # 7760

The Parties shall meet, negotiate in good faith, and attempt to resolve amicably, without litigation, any controversy or any disputed claim by any party against any other party arising under or related to this Agreement. If the Parties are unable to resolve the matter themselves, prior to resort to litigation or arbitration they shall confer in good faith with respect to the possibility of resolving the matter through mediation with a mutually acceptable third party.

Neither Party shall use the name of the other Party or of any staff member, officer, employee or student of the other Party or any adaptation thereof in any advertising, promotional or sales literature, publicity or in any document employed to obtain funds without the prior written approval of the Party or individual whose name is to be used.

7.9 The Technology Licensing Office of MIT covenants to CMCC that, to its reasonable knowledge, the TLO has not entered into any other agreement licensing the Patent Rights. The Intellectual Property Office of CMCC covenants to MIT that, to its reasonable knowledge, CMCC has not entered into any other agreement licensing the Patent Rights. Each Party covenants with the other that, to the best of its knowledge, it has full right and authority to enter into this Agreement and perform its obligations hereunder.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized officers or representatives.

CMCC

By: /s/ Donald P. Lombardi
Donald P. Lombardi
Chief Intellectual Property Officer

Date: September 8, 2004

MIT

By: /s/ Lita L. Nelsen
Lita L. Nelsen
Director, Technology Licensing Office

Date: September 3, 2004

Confidential Treatment Requested

APPENDIX A

Patent Rights

Country	Serial Number	Filing date	Patent/Pub No	Issue date
[…***…]	[…***…]	[…***…]		
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	
[…***…]	[…***…]	[…***…]		
[…***…]	[…***…]	[…***…]		
[…***…]	[…***…]	[…***…]		

Entitled: "[…***…]"
by: […***…].

APPENDIX B

Expenses incurred and income received by
the Parties as of the Effective Date of this Agreement

I. Patent prosecution expenses and income received by MIT :

A. Expenses:

As of the Effective Date of this Agreement, MIT has incurred the following patent prosecution expenses:

a. $[…***…] paid to CMCC in reimbursement of patent prosecution expenses incurred by CMCC. Of this amount, $[…***…] was spent on foreign filings.

b. $[…***…] paid directly to the attorneys in charge of patent prosecution.

In total MIT incurred $[…***…] in patent prosecution expenses

B. Income:

MIT had previously and on behalf of MIT and CMCC exclusively licensed the Patent Rights to […***…], and in consideration for such license and per Section 4.1 (a) of the license agreement effective February 16, 2001 ([…***…] License Agreement) MIT received from […***…] $[…***…], for reimbursement of patent prosecution expenses which was applied by MIT toward reimbursement of its own patent prosecution expenses. As a result of this partial reimbursement, the patent prosecution expenses incurred by MIT have reached to date a total of $[…***…] in sunk costs (MIT Sunk Costs).

In addition, MIT received from […***…] a $[…***…] License Fee. MIT deducted a […***…]% administrative fee ($[…***…]) from the $[…***…] License Fee it received from […***…], leaving $[…***…]. The parties agree that upon reimbursement of all MIT Sunk Costs, MIT will distribute the $[…***…], as stated in Section 3 of the […***…], entered into and effective as of July 31, 2000.

II. Patent prosecution expenses and Income received by CMCC .

A. Expenses:

As of the Effective Date of this Agreement, CMCC has incurred $[…***…] in patent prosecution expenses.

B. Income:

As of the Effective Date of this Agreement, CMCC has received $[…***…] from MIT in reimbursement of MIT share of patent prosecution expenses.

Therefore, and to date, CMCC has incurred $[…***…] in patent prosecution expenses (CMCC Sunk Costs).

APPENDIX 2

[…*…]**

Inventors: […***…]

Assignees: Children's Medical Center Corporation and Massachusetts Institute of Technology

1. Patent Rights

Country	Serial Number	Filing Date	Patent Number	Status/ Issue Date
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]		[…***…]
[…***…]	[…***…]	[…***…]		[…***…]
[…***…]	[…***…]	[…***…]		[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]
[…***…]	[…***…]	[…***…]	[…***…]	[…***…]

APPENDIX 3

Development Plan

Confidential Treatment Requested

Zafgen, Inc.

Development Plan

December 2006

Confidential

Confidential Treatment Requested

LONG TERM DEVELOPMENT PLAN 2006-2016

Objective: […***…]

[…***…]

Confidential Treatment Requested

NEAR TERM DEVELOPMENT PLAN 2006-2007

Objective: […***…]

[…***…]

NEAR TERM DEVELOPMENT PLAN 2008-2009

Objective: […***…]

[…***…]

Confidential Treatment Requested

AMENDMENT TO EXCLUSIVE LICENSE AGREEMENT

This Amendment, effective January 15, 2007, is made between Zafgen, Inc., ("Licensee") having an office located at 824 Winter St Waltham, Massachusetts 02451 zip code and Children's Medical Center Corporation ("CMCC") having an office located at 300 Longwood Avenue, Boston, MA 02115.

WHEREAS the parties have previously executed an exclusive license dated January 4, 2007 (the "Exclusive License Agreement");

WHEREAS the Parties agree that they would like to amend the Exclusive License Agreement;

NOW THEREFORE the parties hereby agree to amend the Exclusive License Agreement as follows:

1. Paragraph B. of Article VI (Patent Prosecution) shall be replaced in its entirety with the following new paragraph B.:

B. Licensee shall reimburse CMCC for all out-of-pocket patent costs, past, present and future incurred by CMCC for the preparation, filing, prosecution and maintenance of patents underlying the Patent Rights provided CMCC has not granted a license under Patent Rights to any third party. In the event CMCC grants a license under Patent Rights to a third party, Licensee's obligation to pay on-going patent costs under this Agreement will be reduced in proportion to the number of additional licensees. CMCC will notify Licensee promptly in writing when it grants a license under Patent Rights to any third party. CMCC will notify Licensee of CMCC's determination of the amount of reduction of a payment due under this Paragraph B. Patent costs are currently approximately $ […***…]. Licensee shall pay $[…***…] of such current costs after the Effective Date of this Agreement and prior to February 1, 2007. Licensee shall pay the remaining amount of $[…***…] upon the one (1) year anniversary of the Effective Date. Upon request of CMCC, and only upon such CMCC request, Licensee agrees to have CMCC's patent counsel directly bill Licensee and Licensee shall directly pay such invoices in compliance with such counsel's customary business terms, but in any event within […***…] days. If Licensee elects to no longer pay the expenses of a patent application or issued patent included within Patent Rights in a given portion of the Territory, Licensee shall notify CMCC not less than […***…] days prior to such action and shall thereby surrender its rights under such patent application, or issued patent to that Field of Use in that portion of the Territory. Thereafter, Licensee will have no further financial obligations with respect to patent expenses for such patent application or issued patent and the license granted under Patent Rights in this Agreement will not include such patent applications or issued patent. Such notice shall not relieve Licensee from responsibility to reimburse CMCC for patent-related expenses incurred prior to the expiration of the […***…]-day notice period (or such longer period specified in Licensee's notice). CMCC shall then be free to license its rights to that patent or patent application to any other party on any other terms.

2. Except as specifically amended hereby, all terms of the Exclusive License Agreement shall remain in full force and effect. In the event of any conflicts between the Exclusive License Agreement and this Amendment, the provisions of this Amendment shall prevail.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CHILDREN'S MEDICAL CENTER CORPORATION

By: /s/ Brenda Manning, Ph.D.
Brenda Manning, Ph.D.
Director, Intellectual Property Officer

Date: January 15, 2007

LICENSEE (ZAFGEN, INC.)

By: /s/ Peter Barrett
Peter Barrett
Chairman

Date: January 19, 2007

Confidential Treatment Requested

Exhibit 21.1

SUBSIDIARIES

	Subsidiary	Jurisdiction of Incorporation
1	Zafgen Securities Corporation	Massachusetts
2	Zafgen Australia Pty Limited	Australia
3	Zafgen Animal Health, LLC	Delaware

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of Zafgen, Inc. of our report dated March 14, 2014 relating to the consolidated financial statements of Zafgen, Inc., which appears in such Registration Statement. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
April 18, 2014