Filed Pursuant to Rule 424(b)(5)
Registration No. 333-268312

PROSPECTUS SUPPLEMENT
(To Prospectus dated November 21, 2022)

17,162,472 Shares of Common Stock

We are offering 17,162,472 shares of our common stock.

Deerfield Management Company, L.P., which we refer to as Deerfield Management, our largest stockholder, and/or certain of its affiliates, which we refer to collectively with Deerfield Management as the Deerfield Funds, have agreed to purchase an aggregate of 4,290,617 shares of our common stock offered pursuant to this prospectus supplement in this offering at the public offering price.

Our common stock is listed on The Nasdaq Global Market under the symbol "LRMR." On February 13, 2024, the last reported sale price of our common stock was $8.74 per share.

Investing in our securities involves risks. See the "Risk Factors" beginning on page S-8 of this prospectus supplement, as well as in the documents incorporated or deemed to be incorporated by reference into this prospectus supplement and the accompanying prospectus.

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

	Per Share	Total
Public offering price	$ 8.7400	$ 150,000,005
Underwriting discounts and commissions(1)	$ 0.5244	$ 9,000,000
Proceeds to us, before expenses	$ 8.2156	$ 141,000,005

(1) See "Underwriting" beginning on page S-24 of this prospectus supplement for additional information regarding underwriting compensation.

We have granted the underwriters an option for a period of up to 30 days from the date of this prospectus supplement to purchase up to an additional 2,574,370 shares of our common stock at the public offering price, less the underwriting discounts and commissions.

Delivery of the securities is expected to be made on or about February 16, 2024.

Joint Bookrunning Managers

Leerink Partners **Citigroup** **Guggenheim Securities**

Lead Manager

LifeSci Capital

Prospectus Supplement dated February 14, 2024

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus form part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. This document contains two parts. The first part consists of this prospectus supplement, which provides you with specific information about this offering. The second part, the accompanying prospectus, provides more general information, some of which may not apply to this offering. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference herein or therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference herein and therein. You should read this prospectus supplement and the accompanying prospectus, including the information incorporated by reference herein and therein, and any related free writing prospectus that we have authorized for use in connection with this offering.

You should rely only on the information that we have included or incorporated by reference in this prospectus supplement, the accompanying prospectus and any related free writing prospectus that we may authorize to be provided to you. We have not, and the underwriters have not, authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any related free writing prospectus that we may authorize to be provided to you. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any related free writing prospectus. This prospectus supplement, the accompanying prospectus and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus supplement, the accompanying prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus supplement, the accompanying prospectus or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference herein or therein is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus supplement, the accompanying prospectus or any related free writing prospectus is delivered, or securities are sold, on a later date.

This prospectus supplement contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been or will be filed or have been or will be incorporated by reference as exhibits to the registration statement of which this prospectus supplement forms a part, and you may obtain copies of those documents as described in this prospectus supplement under the heading "Where You Can Find More Information."

When we refer to "Larimar," "we," "our," "us" and the "Company" in this prospectus supplement, we mean Larimar Therapeutics, Inc., and its subsidiary unless otherwise specified. When we refer to "you," we mean the potential holders of the applicable series of securities.

Larimar® and our logo are some of our trademarks used in this prospectus supplement. This prospectus supplement may also include trademarks, tradenames, and service marks that are the property of other organizations. Solely for convenience, our trademarks and tradenames referred to in this prospectus supplement and the accompanying prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

PROSPECTUS SUPPLEMENT SUMMARY

This summary description about us, our business and this offering highlights selected information contained elsewhere in this prospectus supplement and the accompanying prospectus or incorporated in this prospectus supplement and the accompanying prospectus by reference. This summary does not contain all of the information you should consider before deciding to invest in our securities. You should carefully read this entire prospectus supplement, the accompanying prospectus and any free writing prospectus with respect to this offering filed by us with the SEC, including each of the documents incorporated herein or therein by reference, before making an investment decision. Investors should carefully consider the information set forth under "Risk Factors" on page S-8 and in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.

COMPANY OVERVIEW

We are a clinical-stage biotechnology company focused on developing treatments for patients suffering from complex rare diseases using our novel cell penetrating peptide, or CPP, technology platform. Our lead product candidate, nomlabofusp (nomlabofusp is the new International Nonproprietary Name and the United States Adopted Name for CTI-1601), is a subcutaneously administered, recombinant fusion protein intended to deliver frataxin, or FXN, an essential protein, to the mitochondria of patients with Friedreich's ataxia. Friedreich's ataxia is a rare, progressive, and fatal disease in which patients are unable to produce sufficient FXN due to a genetic abnormality. Currently, there are no treatment options that address the core deficit of Friedreich's ataxia, low levels of FXN. Nomlabofusp represents the first potential therapy designed to increase FXN levels in patients with Friedreich's ataxia.

We have completed two Phase 1 clinical trials and, following the decision by the U.S. Food and Drug Administration, or FDA, to lift its previously imposed full clinical hold on the nomlabofusp clinical development program and impose a partial hold, the 25 mg and 50 mg cohorts of the four-week, placebo-controlled, Phase 2 dose exploration trial in patients with Friedreich's ataxia. The dose exploration trial is designed to further characterize nomlabofusp's safety, pharmacodynamics, or PD, and pharmacokinetics, or PK, profiles to provide information about the preferred long-term dose and dose regimen. Data from the 25 mg cohort of the Phase 2 trial indicated nomlabofusp was generally well tolerated and showed increases in FXN levels from baseline compared to placebo in all evaluated tissues (skin and buccal cells) at day 14.

In January 2024, we initiated the open label extension, or OLE, trial evaluating daily subcutaneous injections of 25 mg of nomlabofusp, which will start dosing in the first quarter of 2024. Participants who complete treatment in the Phase 2 dose exploration trial, or who previously completed a prior clinical trial of nomlabofusp are potentially eligible for the OLE. Further dose expansion in the OLE trial will be considered based on safety, pharmacokinetics, and tissue FXN levels from the 25 mg dose of nomlabofusp. We expect initial data from the OLE trial in the fourth quarter of 2024.

We have received an orphan drug designation, fast track designation and rare pediatric disease designation, from the FDA for nomlabofusp. In addition, we received orphan designation for nomlabofusp from the European Commission and a Priority Medicines designation from the European Medicines Agency, or EMA. The receipt of such designations or positive opinions may not result in a faster development process, review or approval compared to products considered for approval under conventional FDA or EMA procedures and does not assure ultimate approval by the FDA or EMA.

We believe that our CPP platform, which enables a therapeutic molecule to cross a cell membrane in order to reach intracellular targets, has the potential to enable the treatment of other rare and orphan diseases. We intend to use our proprietary platform to target additional orphan indications characterized by deficiencies in or alterations of intracellular content or activity.

Since our inception, we have devoted substantially all of our resources to developing nomlabofusp, building our intellectual property portfolio, developing third-party manufacturing capabilities, business planning, raising capital, and providing general and administrative support for such operations.

RECENT DEVELOPMENTS

Top-Line Data from Phase 2 Trial at 50 mg Dose Level

On February 12, 2024, we announced positive top-line data and successful completion of our four-week, placebo-controlled Phase 2 dose exploration study of nomlabofusp in participants with Friedreich's ataxia. Nomlabofusp was generally well tolerated and demonstrated dose dependent increases in FXN levels in all evaluated tissues (skin and buccal cells) after daily dosing of 14 days followed by every other day dosing until day 28 in the 25 mg and 50 mg cohorts. Participants in the 25 mg (n=13) and 50 mg (n=15) cohorts were randomized 2:1 to receive subcutaneous injections of nomlabofusp or placebo.

Key Phase 2 Results

- Median **changes in FXN levels** from baseline for the 25 mg and 50 mg cohorts of nomlabofusp
  - Skin cells: 2.81 pg/µg for the 25 mg cohort and 5.57 pg/µg for the 50 mg cohort
  - Buccal cells: 0.56 pg/µg for the 25 mg cohort and 0.72 pg/µg for the 50 mg cohort
- As seen in our multiple ascending dose (MAD) study, when dosing is switched to every other day, FXN levels decline from the levels achieved with daily dosing but remain above baseline.
- All treated patients demonstrated increases in FXN levels in skin cells and the majority of patients also demonstrated increases in FXN levels in buccal cells.
- At Day 14, all patients with quantifiable levels at baseline and Day 14 treated with 50 mg of nomlabofusp achieved FXN levels in skin cells greater than 33% of the average level found in healthy volunteers, and 3 of the patients achieved levels greater than 50% of the average healthy volunteer level.
- While FXN levels measured in buccal cells show a high degree of correlation with FXN levels measured in skin cells, higher variability in FXN levels was seen in buccal cells compared to skin cells in both the multiple ascending dose study and the Phase 2 dose exploration study. Skin cells have a lower turnover rate and skin is a more stable tissue. The collection method for skin cells is also well-established and standardized, which provides a more reliable and reproducible measure of changes in FXN levels with treatment compared to buccal cells.

Median baseline tissue FXN levels in skin cells were 3.70 pg/µg and 2.12 pg/µg for the 25 mg and 50 mg cohorts, respectively, and in buccal cells were 1.78 pg/µg and 1.61 pg/µg for the 25 mg and 50 mg cohorts, respectively. Changes in FXN levels after nomlabofusp administration in the Phase 2 trial at day 14 (QD: once daily for 14 days) and day 28 (QOD: every other day after day 14) are:

Median Change from Baseline in FXN Levels (pg FXN/ µg total protein)
(25th, 75th percentile)

	Placebo *N= 9*	**25 mg Nomlabofusp** *N= 9*	**50 mg Nomlabofusp** *N = 10*
Skin Biopsies*			
Day 14 QD	**-0.53** *(-0.96, 0.57)*	**2.81** *(2.16, 3.32)*	**5.57** *(4.25, 6.55)*
Day 28 QOD	**-0.34** *(-0.74, 0.31)*	**2.28** *(-0.03, 2.71)*	**3.14** *(2.50, 3.64)*
Buccal Cells**			
Day 14 QD	**-0.35** *(-0.75, 0.04)*	**0.56** *(-0.28, 0.64)*	**0.72** *(0.05, 1.06)*
Day 28 QOD	**-0.52** *(-1.07, 0.01)*	**0.03** *(-0.66, 0.86)*	**0.48** *(-0.16, 0.76)*

* Subjects *who had one or more FXN measurements below quantifiable levels are excluded from the above analysis.* For the placebo group, one participant had skin cell FXN levels below quantifiable levels on day 14 and day 28. For the 25 mg group, Day 14 and 28 skin biopsies were not collected from one nomlabofusp treated participant who discontinued treatment and one nomlabofusp treated participant had FXN levels below quantifiable levels at day 14 and day 28. For the 50 mg group, one participant had skin cell FXN levels below quantifiable levels at baseline.

** Subjects *who had one or more FXN measurements below quantifiable levels are excluded from the above analysis*. For the placebo group, one participant had buccal cell FXN levels below quantifiable levels at baseline and four participants had buccal cell FXN levels below quantifiable levels at day 14 and day 28. For 25 mg group, day 28 buccal FXN were not collected from one participant who discontinued treatment and two participants had buccal FXN levels below quantifiable levels at baseline. For the 50 mg, one participant had buccal cell FXN levels below quantifiable levels at baseline, day 14 and day 28, and two participants had buccal FXN levels below quantifiable levels at day 14 and day 28.

Key Phase 2 Pharmacokinetic and Safety Data for 25 mg and 50 mg Cohorts of Nomlabofusp

- Quick absorption after subcutaneous administration of nomlabofusp with dose proportional increases in exposure were observed with increasing doses.
- Generally well tolerated with no serious adverse events reported.
- No severe adverse events in the 50 mg cohort. One severe adverse event for an allergic reaction to the study drug was reported in the 25 mg cohort and was resolved with standard treatment.
- 18 of the 19 participants dosed with nomlabofusp completed the trial, with one participant in the 25 mg cohort withdrawing due to the aforementioned allergic reaction that resolved with standard treatment.
- Most common adverse events were mild and moderate injection site reactions.

Certain Unaudited Preliminary Financial Information

We estimate that our cash, cash equivalents and marketable securities were approximately $86.8 million as of December 31, 2023. This amount is unaudited and preliminary and is subject to completion of financial closing

procedures, including the completion of management's reviews. As a result, this amount reflects our preliminary estimate with respect to such information, based on information currently available for management, and may vary from our actual financial position as of December 31, 2023. Further, this preliminary estimate is not a comprehensive statement or estimate of our financial data or financial condition as of December 31, 2023. The unaudited preliminary financial data included in this prospectus supplement have been prepared by, and are the responsibility of, our management team. PricewaterhouseCoopers LLP, our independent registered public accounting firm, has not audited, reviewed, examined, compiled, nor applied agreed-upon procedures with respect to the unaudited preliminary financial data. Accordingly, PricewaterhouseCoopers LLP does not express an opinion or any other form of assurance with respect thereto. It is possible that we may identify items that require us to make adjustments to the financial information set forth above. This preliminary estimate should not be viewed as a substitute for financial statements prepared in accordance with generally accepted accounting principles in the United States and it is not necessarily indicative of the balance to be achieved in any future period. Additional information and disclosure would be required for a more complete understanding of our financial position and results of operations as of December 31, 2023. Accordingly, you should not place undue reliance on this preliminary estimate. This preliminary estimate should be read together with the sections titled "Risk Factors" and "Cautionary Note Regarding Forward-looking Statements," and under similar headings included in this prospectus supplement, the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement and in the accompanying prospectus as well as our financial statements, related notes and other financial information incorporated by reference in this prospectus supplement and in the accompanying prospectus. We expect to complete our financial statements for the year ended December 31, 2023 subsequent to the completion of this offering, and consequently such financial statements will not be available to you prior to investing in this offering.

COMPANY INFORMATION

We were founded in 2005 as a Delaware corporation under the name Zafgen, Inc. Our principal executive offices are located at Three Bala Plaza East, Suite 506, Bala Cynwyd, PA 19004, and our telephone number is (844) 511-9056. Our website address is *www.larimartx.com*. The information on, or that can be accessed through, our website is not part of this prospectus supplement or the accompanying prospectus and is not incorporated by reference herein. We have included our website address as an inactive textual reference only.

In May 2020, we completed our business combination with Chondrial Therapeutics, Inc., or Chondrial, and changed our name from "Zafgen, Inc." to "Larimar Therapeutics, Inc." Chondrial was determined to be the accounting acquirer for financial reporting purposes, our historical financials are those of Chondrial and the business conducted by Chondrial became our business.

THE OFFERING

Common stock offered by us	17,162,472 of shares of our common stock.
Underwriters' option to purchase additional shares of our common stock from us	We have granted the underwriters an option for a period of up to 30 days from the date of this prospectus supplement to purchase up to an additional 2,574,370 shares of our common stock at the public offering price, less the underwriting discount and commissions.
Common stock to be outstanding immediately following this offering	61,068,375 shares of our common stock (or 63,642,745 shares, if the underwriters exercise their option to purchase additional shares in full).
Use of Proceeds	We intend to use the net proceeds from this offering, together with our existing cash, cash equivalents and marketable securities, to support the development of nomlabofusp and other pipeline candidates, and for working capital and general corporate purposes, including research and development expenses. See "Use of Proceeds" for a more detailed discussion of our expected use of proceeds.
Indications of Interest	Deerfield Management, our largest stockholder, and/or certain of its affiliates have agreed to purchase an aggregate of 4,290,617 shares of our common stock offered pursuant to this prospectus supplement in this offering at the public offering price.
Risk Factors	Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page S-8 of this prospectus supplement and page 7 of the accompanying prospectus and other information included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in our securities.
Nasdaq Global Market symbol	Our common stock is listed on The Nasdaq Global Market under the symbol "LRMR."

The number of shares of our common stock that will be outstanding after this offering is based on 43,905,903 shares of our common stock outstanding as of September 30, 2023, and excludes the following:

- 4,485,997 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2023 at a weighted-average exercise price of $9.33 per share;
- 1,531,975 shares of our common stock issuable upon the exercise of stock options that were granted after September 30, 2023 at a weighted-average exercise price of $4.17 per share;
- 615,000 shares of our common stock issuable upon the vesting and settlement of restricted stock units outstanding as of September 30, 2023;
- 243,363 shares of our common stock issuable upon the vesting and settlement of restricted stock units that were granted after September 30, 2023;

- 1,106,459 shares of our common stock available for future issuance as of September 30, 2023 under our 2020 Equity Incentive Plan; and
- 1,756,363 shares of our common stock added to shares available for future issuance on January 1, 2024 as permitted under our 2020 Equity Incentive Plan.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the outstanding options described above and no exercise by the underwriters of their option to purchase additional shares.

RISK FACTORS

An investment in our securities involves a high degree of risk. Our business, financial condition and results of operations could be materially and adversely affected by any of these risks. If any of these risks occur, the value of our common stock may decline and you may lose all or part of your investment. Before investing in our securities, you should consider carefully the risk factors set forth in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering, along with the risk factors described in our most recent Annual Report on Form 10-K, our subsequent Quarterly Reports on Form 10-Q, and any subsequent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q or Current Reports on Form 8-K we file after the date of this prospectus supplement, as well as other information contained or incorporated by reference into this prospectus supplement and the accompanying prospectus, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Risks Related to Our Financial Position and Need for Additional Capital

We have a history of losses and expect to incur substantial future losses. If the offering is not completed prior to the filing of our 2023 Annual Report or if we do not raise sufficient funds by other means, the opinion from our independent registered public accounting firm will express substantial doubt about our ability to continue as a going concern.

As of December 31, 2023, we estimate that we had cash, cash equivalents and marketable securities of $86.8 million. We have incurred significant net losses since inception and also expect to incur substantial losses in future periods. Our continuation as a going concern is dependent on our ability to generate sufficient cash flows from operations and/or obtain additional capital through equity or debt financings, partnerships, collaborations, or other sources. Based upon our current operating plan, our current cash, cash equivalents and marketable securities will be sufficient to fund our operations into the first quarter of 2025.

If this offering is not completed prior to the filing of our Annual Report on Form 10-K for the year ended December 31 2023, or the 2023 Annual Report, or if we do not raise sufficient funds through other means, then we expect that we will disclose in such filing that we would have substantial doubt about our ability to fund our operations for more than one year beyond the filing date of the 2023 Annual Report. We would also expect that the opinion from our independent registered public accounting firm on such annual financial statements contained in our 2023 Annual Report would contain an explanatory paragraph about such substantial doubt about our ability to continue as a going concern. There is no assurance that we will be successful in obtaining sufficient funding on acceptable terms, if at all. If we are unable to obtain sufficient funding when needed and/or on acceptable terms, we may be required to significantly curtail, delay or discontinue one or more of our research and development programs, the manufacture of clinical and commercial supplies, product portfolio expansion or pre commercialization efforts, which could adversely affect our business prospects, or we may be unable to continue operations.

The substantial doubt about our ability to continue as a going concern may adversely affect our stock price and our ability to raise capital. If we are unable to obtain additional capital, we may not be able to continue our operations on the scope or scale as currently conducted, and that could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to This Offering

Management will have broad discretion over the use of proceeds from this offering, and may not use the proceeds effectively.

Our management will have broad discretion with respect to the use of proceeds of this offering, including for any of the purposes described in the section of this prospectus supplement entitled “Use of Proceeds.” You will have limited information concerning our management’s specific intentions regarding the use of the proceeds of this

offering and be relying on the judgment of our management regarding the application of the proceeds of this offering. Because of the number and variability of factors that will determine our use of our existing cash, cash equivalents, marketable securities and the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The results and effectiveness of the use of proceeds are uncertain, and we could spend the proceeds in ways that you do not agree with or that do not improve our results of operations or enhance the value of our common stock. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. Our failure to apply these funds effectively could harm our business, delay the development of our pipeline product candidates and cause the price of our common stock to decline. See "Use of Proceeds" for a more detailed discussion of our expected use of proceeds.

You will experience immediate and substantial dilution in the net tangible book value per share of the common stock purchased in this offering.

Since the price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. The exercise of outstanding stock options and vesting and settlement of restricted stock units may result in further dilution of your investment. See "Dilution" for a more detailed discussion of the dilution you will incur if you purchase shares of our common stock in this offering.

Issuances of shares of our common stock or securities convertible into or exercisable for shares of our common stock following this offering, as well as the exercise of existing options, will dilute your ownership interests and may adversely affect the future market price of our common stock.

As a development-stage company, we will need additional capital to fund the development and commercialization of our product candidates. We may seek additional capital through a combination of private and public equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements at prices and in a manner we determine from time to time, which may cause your ownership interest to be diluted. As of September 30, 2023, there were options to purchase 4,485,997 shares of our common stock outstanding at a weighted average exercise price of $9.33. If these securities are exercised, you may incur further dilution. Moreover, to the extent that we issue additional shares of our common stock, options to purchase, or securities convertible into or exchangeable for, shares of our common stock in the future and those options or other securities are exercised, converted or exchanged, stockholders may experience further dilution. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering.

A substantial number of shares may be sold in the market following this offering, which may depress the market price for our common stock.

Sales of a substantial number of shares of our common stock in the public market following this offering, or the perception by the market that those sales could occur, could cause the market price of our common stock to decline. We are unable to predict the effect that such sales may have on the prevailing market price of our common stock. Immediately after this offering, we will have 61,068,375 outstanding shares of our common stock (or 63,642,745 shares if the underwriters exercise their option to purchase additional shares of our common stock in full), based on the number of shares of our common stock outstanding as of September 30, 2023. This includes the shares of our common stock that we are selling in this offering, which may be resold in the public market immediately without restriction, unless purchased by our directors, officers or affiliates. Of the remaining shares, approximately 17,645,245 are restricted from sale as a result of 90-day lock-up agreements (which may be waived, with or without notice, by the representatives of the underwriters) but will be able to be sold beginning 90 days after this offering, unless held by one of our affiliates, in which case the resale of those securities will be subject to volume limitations under Rule 144 of the Securities Act of 1933, as amended, or the Securities Act. In

addition, we have also registered the shares of our common stock that we may issue under our equity incentive plans. As a result, these shares can be freely sold in the public market upon issuance, subject to restrictions under securities laws.

The market price and trading volume of our stock may be volatile.

The market price of our common stock could be subject to significant fluctuations. Market prices for securities of early-stage pharmaceutical, biotechnology, and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of our common stock to fluctuate include:

- our ability to obtain regulatory approvals for product candidates, and delays or failures to obtain such approvals;
- the results of, and delays in, current, and any future, non-clinical or clinical trials of nomlabofusp or any of our future product candidates, including any potential delays related to public health crises;
- the failure of nomlabofusp or any of our future product candidates, if approved for marketing and commercialization, to achieve commercial success;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- the entry into, or termination of, key agreements, including key licensing or collaboration agreements;
- issues in manufacturing our approved products, if any, or product candidates;
- the initiation of material developments in, or conclusion of, disputes or litigation to enforce or defend any of our intellectual property rights or defend against the intellectual property rights of others;
- announcements by us or our commercial partners or competitors of new commercial products, clinical progress (or the lack thereof), significant contracts, commercial relationships, or capital commitments;
- adverse publicity relating to our markets, including with respect to other products and potential products in such markets;
- the introduction of technological innovations or new therapies competing with our potential products;
- the recruitment or departure of key personnel;
- our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future;
- general and industry-specific economic conditions potentially affecting our research and development expenditures;
- general economic conditions in the United States and abroad, including disruptions to the financial markets;
- changes in the structure of health care payment systems;
- adverse regulatory decisions;
- trading volume of our common stock;
- period-to-period fluctuations in our financial results; and
- the other factors described in this “Risk Factors” section and in Part I, Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 and Quarterly Report on Form 10-Q for the period ended June 30, 2023.

Moreover, the capital markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies or the biotechnology sector. These broad market fluctuations may also adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management's attention and resources, which could significantly impact our profitability and reputation.

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

We do not currently intend to pay any cash dividends on our common stock for the foreseeable future. Therefore, investors who purchase shares in this offering are not likely to receive any dividends on common stock for the foreseeable future. Since we do not intend to pay dividends, investors' ability to receive a return on their investment will depend on any future appreciation in the market value of our common stock. There is no guarantee that our common stock will appreciate or even maintain the price at which investors have purchased it.

Risks Related to Our Product Development and Regulatory Approvals

If we determine that we need to explore doses higher than 50 mg or higher than 25 mg for long-term dosing and the FDA determines not to allow further dose escalation in the Phase 2 dose exploration study and OLE trials, our development timelines and our business may be adversely affected and our stock price may decline.

In February 2024, we announced positive top-line data and successful completion of our four-week, placebo-controlled Phase 2 dose exploration study of nomlabofusp in participants with Friedreich's ataxia. Nomlabofusp was generally well tolerated and demonstrated dose dependent increases in FXN levels in all evaluated tissues (skin and buccal cells) after daily dosing of 14 days followed by every other day dosing until day 28 in the 25 mg and 50 mg cohorts. Participants in the 25 mg (n=13) and 50 mg (n=15) cohorts were randomized 2:1 to receive subcutaneous injections of nomlabofusp or placebo. Further dose expansion in the Phase 2 dose exploration study and the initiation of additional U.S. clinical trials evaluating nomlabofusp are contingent on FDA review of results from the Phase 2 trial's 50 mg cohort in accordance with a partial clinical hold. In January 2024, we initiated the OLE trial evaluating daily subcutaneous injections of 25 mg of nomlabofusp, which will start dosing in the first quarter of 2024. Further dose expansion in the OLE trial will be considered based on safety, pharmacokinetics, and tissue FXN levels from the 25 mg dose of nomlabofusp. We expect initial data from the OLE trial in the fourth quarter of 2024.

If we are unable to reach agreement with the FDA to lift the partial clinical hold and we determine that we need to explore doses higher than 50 mg or higher than 25 mg for long-term dosing, we would be unable to complete our nomlabofusp clinical trials without delays in our clinical development plans and anticipated data milestones and additional clinical development costs, any of which could impair our ability, cost or timeline to obtain U.S. regulatory approval for nomlabofusp.

We cannot be certain whether or when the FDA will lift the partial clinical hold and/or permit us to conduct clinical trials with doses higher than 50 mg or long-term doses higher than 25 mg. If the FDA does not lift the partial clinical hold in a timely manner, or at all, our development timelines and our business may be adversely affected and our stock price may decline. Further, even if the FDA lifts the partial clinical hold, or if the FDA or other regulatory agencies continue to express safety concerns after the partial clinical hold is lifted, additional nomlabofusp non-clinical or clinical studies may be required and future preclinical or clinical studies involving nomlabofusp may be more burdensome or include additional preclinical or clinical endpoints that are difficult to meet. In such instances, our progress in the development of nomlabofusp may be significantly slowed and the associated costs may be significantly increased, which could adversely affect our business, impair our ability to ultimately obtain FDA approval for nomlabofusp and cause our stock price to decline.

We intend to pursue accelerated approval for nomlabofusp for the treatment of Friedreich's ataxia, however this may not lead to a faster development or regulatory review or approval process and does not increase the likelihood that we will receive marketing approval. If we are unable to obtain approval under an accelerated pathway, we may be required to conduct additional clinical trials beyond those that we contemplate, which could increase the expense of obtaining, reduce the likelihood of obtaining, and/or delay the timing of obtaining, necessary marketing approvals.

We intend to pursue an accelerated approval for nomlabofusp for the treatment of Friedreich's ataxia using FXN levels, supportive pharmacodynamic and clinical information and safety data from the open label extension study, along with additional nonclinical pharmacology information needed to support our surrogate biomarker approach. Under the FDA's accelerated approval program, the FDA may approve a drug or biologic for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. Although we have initiated discussions with FDA concerning our surrogate biomarker approach, there can be no assurance that data we intend to generate will be successful in establishing, among other things, that dose-dependent FXN levels demonstrate clinical benefit. For example, buccal cells have higher FXN variability.

Approval of other therapies for the treatment Friedreich's ataxia, including the approval of omaveloxolone for the treatment of Friedreich's ataxia, could negatively impact our ability to demonstrate a benefit over existing treatments and therefore utilize the accelerated approval pathway. For drugs or biologics granted accelerated approval, post-marketing confirmatory trials are required to describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. These confirmatory trials must be completed with due diligence and, in some cases, the FDA may require that the trial be designed, initiated and/or fully enrolled prior to approval.

Moreover, the FDA may withdraw approval of any product candidate approved under the accelerated approval pathway if, for example:

- the trial or trials required to verify the predicted clinical benefit of the product candidate fails to verify such benefit or do not demonstrate sufficient clinical benefit to justify the risks associated with such product;
- other evidence demonstrates that the product candidate is not shown to be safe or effective under the conditions of use;
- we fail to conduct any required post-approval trial of our product candidate with due diligence; or
- we disseminate false or misleading promotional materials relating to the relevant product candidate.

In addition, the FDA may terminate the accelerated approval program or change the standards under which accelerated approvals are considered and granted in response to public pressure or other concerns regarding the accelerated approval program. Changes to or termination of the accelerated approval program could prevent or limit our ability to obtain accelerated approval of any of our clinical development programs. Recently, the accelerated approval pathway has come under scrutiny within the FDA and by Congress. The FDA has put increased focus on ensuring that confirmatory studies are conducted with diligence and, ultimately, that such studies confirm the benefit. In addition, the Food and Drug Omnibus Reform Act, or FDORA, included provisions related to the accelerated approval pathway. Pursuant to FDORA, the FDA is authorized to require a post-approval study to be underway prior to approval or within a specified time period following approval. FDORA also requires the FDA to specify conditions of any required post-approval study and requires sponsors to submit progress reports for required post-approval studies and any conditions required by the FDA. FDORA enables the FDA to initiate enforcement action for the failure to conduct with due diligence a required post-approval study, including a failure to meet any required conditions specified by the FDA or to submit timely reports.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein may contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act about us and our subsidiary. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking terminology such as "believes," "expects," "may," "will," "could," "should," "projects," "plans," "goal," "targets," "potential," "estimates," "pro forma," "seeks," "intends" or "anticipates" or the negative thereof or comparable terminology, although not all forward-looking statement contain these identifying words.

The forward-looking statements in this prospectus supplement, the accompanying prospectus and the documents incorporated herein by reference include, among other things, statements about:

- uncertainties in obtaining successful non-clinical or clinical results that reliably and meaningfully demonstrate safety, tolerability and efficacy profiles that are satisfactory to the FDA, European Medicines Agency and other comparable regulatory authorities for marketing approval for nomlabofusp or any other product candidate that we may develop in the future and unexpected costs that may result therefrom;
- delays in patient recruitment for our clinical trials (including as a result of the impact of FDA approval of competitive products for the treatment of Friedreich's ataxia, and/or the impact of other clinical trials of competitive products), delays as a result of clinical and non-clinical results and/or FDA's request for additional information or studies (whether clinical or non-clinical), changes in clinical protocols, regulatory restrictions, including additional clinical holds, and milestones for nomlabofusp;
- our ability to successfully complete our open label extension trial;
- uncertainties associated with the clinical development and regulatory approval for nomlabofusp or any other product candidate that we may develop in the future, including potential delays in the commencement, enrollment and completion of clinical trials;
- the difficulties and expenses associated with obtaining and maintaining regulatory approval for nomlabofusp or any other product candidate we may develop in the future, and the indication and labeling under any such approval;
- how long we can continue to fund our operations with our existing cash, cash equivalents and marketable securities and our estimates regarding future results of operations, financial position, research and development costs, capital requirements and our access and needs for additional financing;
- our ability, and the ability of third-party manufacturers we engage, to optimize and scale nomlabofusp or any other product candidate's manufacturing process and to manufacture sufficient quantities of clinical supplies, and, if approved, commercial supplies of nomlabofusp or any other product candidate that we may develop in the future and our ability to maintain our relationships, and contracts with our key vendors and to identify and contract with alternate or secondary key vendors;
- our ability to realize any value from nomlabofusp and/or any other product candidate we may develop in the future in light of inherent risks and difficulties involved in successfully bringing product candidates to market and the risk that the product candidates, if approved, will not achieve broad market acceptance;
- our ability to comply with regulatory requirements applicable to our business and other regulatory developments in the United States and other countries;

- the size and growth of the potential markets for nomlabofusp, if approved, or any other product candidate that we may develop in the future, the rate and degree of market acceptance of nomlabofusp or any other product candidate, if approved, that we may develop in the future and our ability to serve those markets;
- given competing therapies and products for the treatment of Friedreich's ataxia, our ability to obtain and maintain designations or eligibility for expedited regulatory programs, and to commercialize current and future candidates, if approved, (including the impact of potential barriers to entry if a competitor is able to establish a strong market position before we are able to commercialize our products);
- our ability to obtain and maintain patent protection and defend our intellectual property rights against third-parties;
- the performance and compliance with the rules and regulations of the FDA (and all other regulatory authorities) of third parties upon which we depend, including third-party contract research organizations, consultants, and third-party suppliers, manufacturers, distributors, and logistics providers;
- our ability to recruit and retain key scientific, technical, commercial, and management personnel and to retain our executive officers;
- our ability to maintain proper functionality and security of our internal computer and information systems and prevent or avoid cyber-attacks, malicious intrusion, breakdown, destruction, loss of data privacy or other significant disruption;
- the extent to which geopolitical tensions including regional conflicts around the world, adverse macroeconomic events, including those due to inflationary pressures, rising interest rates, banking instability, economic slowdowns or recessions, health epidemics, unforeseen emergencies and other outbreaks of communicable diseases could disrupt our operations, the operations of third parties on which we rely or the operations of regulatory agencies we interact with in the development of nomlabofusp;
- our ability to continue as a going concern; and
- the potential impact of healthcare reform in the United States, including the Inflation Reduction Act of 2022, and measures being taken worldwide designed to reduce healthcare costs and limit the overall level of government expenditures.

You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we currently expect. Our business and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors discussed under the heading "Risk Factors" contained in this prospectus supplement, the accompany prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement and the accompanying prospectus.

You should assume that the information appearing in this prospectus supplement, the accompanying prospectus or related free writing prospectus and any document incorporated herein by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or

combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus supplement or to reflect the occurrence of unanticipated events.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of shares of our common stock will be approximately $140.7 million (or approximately $161.8 million if the underwriters exercise their option to purchase additional shares of our common stock in full) after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We estimate that our cash, cash equivalents and marketable securities were approximately $86.8 million as of December 31, 2023. This estimate is unaudited and preliminary and is subject to completion of financial closing procedures, including the completion of management's reviews.

PricewaterhouseCoopers LLP, our independent registered public accounting firm, has not audited, reviewed, examined, compiled, nor applied agreed-upon procedures with respect to the preliminary financial results. Accordingly, PricewaterhouseCoopers LLP does not express an opinion or any other form of assurance with respect thereto.

We intend to use the net proceeds of the proposed offering, together with our existing cash, cash equivalents and marketable securities, to support the development of nomlabofusp and other pipeline candidates, and for working capital and general corporate purposes, including research and development expenses.

Based on our current operating plan, we estimate that our existing cash, cash equivalents and marketable securities, together with the anticipated net proceeds from this offering, will be sufficient to fund our operating expenses and capital expenditure requirements into 2026.

This expected use of the net proceeds from this offering represents our intentions based on our current plans and business conditions, which could change in the future as our plans and business conditions evolve. Our management will have broad discretion over the use of the net proceeds from this offering and our investors will be relying on the judgment of our management regarding the application of the proceeds of this offering. Because of the number and variability of factors that will determine our use of our existing cash, cash equivalents, marketable securities and the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use.

Pending our use of the net proceeds as described above, we intend to invest the net proceeds from this offering in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing securities.

DILUTION

If you invest in our securities in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the as adjusted net tangible book value per share of our common stock immediately after the closing of this offering. As of September 30, 2023, our net tangible book value was $89.8 million, or $2.05 per share. Net tangible book value per share represents our total tangible assets (excluding operating lease right-of-use assets) less our total liabilities, divided by the number of shares outstanding. After giving effect to the sale of 17,162,472 shares of our common stock in this offering at the public offering price of $8.74 per share, and after deducting underwriting discounts and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2023 would have been $230.5 million, or $3.77 per share. This amount would represent an immediate increase in net tangible book value of $1.72 per share to existing stockholders and an immediate dilution in net tangible book value of $4.97 per share to new investors participating in this offering. We determine dilution by subtracting the assumed as adjusted net tangible book value per share after this offering from the assumed price per share paid by an investor in this offering.

The following table illustrates this dilution on a per share basis:

Public offering price per share		$8.74
Net tangible book value per share as of September 30, 2023	$2.05	
Increase in net tangible book value per share attributable to new investors purchasing shares in this offering	1.72	
As adjusted net tangible book value after this offering		3.77
Dilution per share to new investors in this offering		$4.97

To the extent that outstanding options are exercised, investors purchasing shares of our common stock in this offering could 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 equity-based securities, the issuance of these securities could result in further dilution to our stockholders.

If the underwriters exercise their option to purchase an additional 2,574,370 shares of our common stock in full at the public offering price of $8.74 per share, our as adjusted net tangible book value as of September 30, 2023 would have been $251.6 million, or $3.95 per share. This amount would represent an immediate increase in net tangible book value of $1.90 per share to existing stockholders and an immediate dilution in net tangible book value of $4.79 per share to new investors purchasing common stock in this offering.

The foregoing table and calculations (other than the historical net tangible book value calculation) are based on 43,905,903 shares of our common stock outstanding as of September 30, 2023, and excludes the following:

- 4,485,997 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2023 at a weighted-average exercise price of $9.33 per share;
- 1,531,975 shares of our common stock issuable upon the exercise of stock options that were granted after September 30, 2023 at a weighted-average exercise price of $4.17 per share;
- 615,000 shares of our common stock issuable upon the vesting and settlement of restricted stock units outstanding as of September 30, 2023;

- 243,363 shares of our common stock issuable upon the vesting and settlement of restricted stock units that were granted after September 30, 2023;
- 1,106,459 shares of our common stock available for future issuance as of September 30, 2023 under our 2020 Equity Incentive Plan; and
- 1,756,363 shares of our common stock added to shares available for future issuance on January 1, 2024 as permitted under our 2020 Equity Incentive Plan.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the outstanding options described above, and no exercise by the underwriters of their option to purchase additional shares.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay dividends on our common stock will be made at the discretion of our Board of Directors, or our Board, and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects, anticipated cash needs, plans for expansion and any other factors deemed relevant by our Board.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of certain material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, the Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non- U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income, the special tax accounting rules under Section 451(b) of the Code and the alternative minimum tax. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies and other financial institutions;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans;
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and
- persons that own, or have owned, actually or constructively, more than 5% of our common stock.

If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

A non-U.S. holder is a beneficial owner of our common stock that is not an entity or arrangement treated as a partnership for U.S. federal income tax purposes and not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (1) the administration of which is subject to the primary supervision of a U.S. court and that has one or more U.S. persons with the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Distributions

As described in the section titled "Dividend Policy," we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. However, if we make distributions of cash or property on our common stock, such distributions 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. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under "Sale or Other Taxable Disposition."

Subject to the discussions below on effectively connected income, backup withholding and FATCA (as defined below), dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment or fixed base in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends generally will be subject to U.S. federal income tax on a net income basis at the regular U.S. federal income tax rates as if the Non-U.S. Holder were a resident of the United States. A Non-U.S. Holder that is a corporation also generally will be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits attributable to such dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

Subject to the discussions below regarding backup withholding and FATCA, a Non-U.S. Holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment or fixed base in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the Non-U.S. Holder's holding period for our common stock.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular U.S. federal income tax rates in the same manner as if the Non-U.S. Holder were a resident of the United States. A Non-U.S. Holder that is a corporation also generally will be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits attributable to such gain, as adjusted for certain items.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on gain realized upon the sale or other taxable disposition of our common stock, which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period. If we are a USRPHC and either our common stock is not regularly traded on an established securities market or a Non-U.S. Holder holds more than 5% of our common stock, actually or constructively, during the applicable testing period, such Non-U.S. Holder will generally be taxed on any gain 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 generally will not apply.

Non-U.S. Holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in

connection with any distributions on our common stock paid to the Non-U.S. Holder, regardless of whether such distributions constitute dividends or whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker that does not have certain enumerated relationships with the United States generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS also may be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established. Non-U.S. Holders should consult their tax advisors regarding the possibility of and procedure for obtaining a refund or a credit against their U.S. federal income tax liability, if any.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under proposed Treasury Regulations, FATCA withholding on payments of gross proceeds has been eliminated. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE, AND LOCAL AND NON-U.S. INCOME AND NON-INCOME TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP, AND DISPOSITION OF OUR COMMON STOCK IN THEIR PARTICULAR CIRCUMSTANCES, INCLUDING INFORMATION REPORTING REQUIREMENTS, THE IMPACT OF ANY APPLICABLE TAX TREATIES, AND THE IMPACT OF ANY POTENTIAL CHANGE IN APPLICABLE LAW.

UNDERWRITING

Leerink Partners LLC, Citigroup Global Markets Inc. and Guggenheim Securities, LLC are acting as representatives of each of the underwriters named below and as joint bookrunning managers for this offering. Subject to the terms and conditions set forth in the underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
Leerink Partners LLC	6,521,739
Citigroup Global Markets Inc.	4,462,243
Guggenheim Securities, LLC	4,462,243
LifeSci Capital LLC	1,716,247
Total	17,162,472

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of the shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and subject to other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officers' certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Discounts and Commissions

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the initial public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of $0.31464 per share. After the initial offering of the shares, the public offering price, concession or any other term of this offering may be changed by the representatives.

The following table shows the initial public offering price, underwriting discounts and commissions and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares of our common stock.

	Per Share	Total Without Option Exercise	Total With Full Option Exercise
Initial public offering price	$ 8.7400	$ 150,000,005	$ 172,499,999
Underwriting discounts and commissions	$ 0.5244	$ 9,000,000	$ 10,350,000
Proceeds, before expenses, to us	$ 8.2156	$ 141,000,005	$ 162,149,999

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $390,000. We also have agreed to reimburse the underwriters for up to $50,000 for their FINRA counsel fee. In accordance with FINRA Rule 5110, this reimbursed fee is deemed underwriting compensation for this offering.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus supplement, to purchase up to 2,574,370 additional shares at the initial public offering price, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to the conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

Our executive officers and directors and certain of our other existing security holders have agreed not to sell or transfer any of our common stock or securities convertible into or exchangeable or exercisable for our common stock, for 90 days after the date of this prospectus supplement without first obtaining the written consent of Leerink Partners LLC, Citigroup Global Markets Inc. and Guggenheim Securities, LLC on behalf of the underwriters. We have agreed not to sell or transfer any of our common stock or securities convertible into or exchangeable or exercisable for our common stock, for 60 days after the date of this prospectus supplement without first obtaining the written consent of Leerink Partners LLC, Citigroup Global Markets Inc. and Guggenheim Securities, LLC on behalf of the underwriters. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

- offer, pledge, sell or contract to sell any of our common stock;
- solicit offers to purchase or for us and effect any short sale of any of our common stock;
- sell any option or contract to purchase any of our common stock;
- purchase any option or contract to sell any of our common stock;
- grant any option, right or warrant for the sale of any of our common stock;
- otherwise dispose of or transfer any of our common stock;
- request or demand that we submit or file a registration statement related to our common stock;
- enter into any swap, hedge, derivative or other agreement or any transaction that transfers, in whole or in part, the economic consequence of ownership of any of our common stock, whether any such swap, agreement or transaction is to be settled by delivery of shares or other securities, in cash or otherwise; or
- publicly announce any intention to do any of the foregoing.

The lock-up provisions apply to our common stock and to securities convertible into or exchangeable or exercisable for our common stock. They also apply to our common stock owned now or acquired later by the person executing the lock-up agreement or for which the person executing the lock-up agreement later acquires the power of disposition.

The lock-up provisions that apply to our executive officers, directors and certain of our existing securityholders are subject to certain exceptions, including: (i) the transfer of securities as gifts, by will or intestate succession, to family members, to a trust for the benefit of the securityholder or its family members, by operation of law, to a charitable trust or if the securityholder is a trust, to the beneficiary of such trust; (ii) transfers to us in to satisfy tax withholding obligations in connection with the vesting or exercise of equity awards, pursuant to the net exercise or cashless exercise of equity awards or upon the death, disability or termination of an executive officer; (iii) distributions to limited partners, members or stockholders, transactions relating to securities acquired in the offering or in the open market after the closing of the offering; (iv) transactions relating to securities acquired in this offering or in open market transactions after the closing of this offering; (v) the transfer pursuant to a change of control of us; (vi) the transfer to a business entity wholly owned by the securityholder and/or its family members, to affiliates or investment fund or manager controlling or under common control with the securityholder; and (vii) in

the case of one of our existing securityholders, pledges of securities as collateral pursuant to a bona fide margin loan (including any subsequent transfer upon foreclosure under any such pledge); provided that, in the case of transfers or distributions pursuant to clauses (i), (ii), (iii), (iv) or (vi), no public disclosure or filing is required or voluntarily made (other than in certain cases where reports under Section 13 or 16 of the Exchange Act may be permitted if the report clearly indicates in footnotes or otherwise discloses the nature of the transfer, as applicable); and provided further that, in the case of clauses (i), (iii), (vi) and (vii) (solely in the case of subsequent transfer upon foreclosure under any such pledge) that, each resulting transferee of securities agrees to be bound by the same lock-up restrictions.

Nasdaq Global Market Listing

Our common stock is listed on the Nasdaq Global Market under the symbol “LRMR.”

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the common stock is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of our common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with this offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares granted to them under the underwriting agreement described above. “Naked” short sales are sales in excess of such option to purchase additional shares. The underwriters must close out any naked short position by purchasing shares in the open market. 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 our common stock in the open market after pricing that could adversely affect investors who purchase in this offering. Stabilizing transactions consist of various bids for or purchases of shares of our common stock made by the underwriters in the open market prior to the closing of this offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with this offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Some of the underwriters and certain of their affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us and our affiliates, for which they may in the future receive customary fees, commissions and expenses.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each, a "Relevant State"), no shares of our common stock have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that the shares of our common stock may be offered to the public in that Relevant State at any time:

A. to any legal entity which is a qualified investor as defined under Article 2 of the Prospectus Regulation;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

C. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of the shares shall require us or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an "offer to the public" in relation to the shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129, as amended.

Notice to Prospective Investors in the United Kingdom

No shares of our common stock have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the shares which has been approved by the

Financial Conduct Authority, except that the shares of our common stock may be offered to the public in the United Kingdom at any time:

A. to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

C. in any other circumstances falling within Section 86 of the Financial Services and Markets Act 2000 (the "FMSA"),

provided that no such offer of the shares shall require us or any representative to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation. For the purposes of this provision, the expression an "offer to the public" in relation to the shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares and the expression "UK Prospectus Regulation" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

Notice to Prospective Investors in Canada

The shares of our common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the securities being offered in this prospectus supplement will be passed upon for us by Goodwin Procter LLP. Certain legal matters will be passed upon for the underwriters by Cooley LLP.

EXPERTS

The financial statements incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2022 have been so incorporated 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

This prospectus supplement and the accompanying prospectus form part of a registration statement on Form S-3 filed with the SEC under the Securities Act. This prospectus supplement and the accompanying prospectus do not contain all the information set forth in the registration statement and the exhibits to the registration statement or the documents incorporated by reference herein and therein. For further information with respect to us and the securities that we are offering under this prospectus supplement and accompanying prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement and the documents incorporated by reference herein and therein.

We are currently subject to the reporting requirements of the Exchange Act, and in accordance therewith file periodic reports, proxy statements and other information with the SEC. Our SEC filings are available to you on the SEC's website at http://www.sec.gov and in the "Investors" section of our website at www.larimartx.com. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This prospectus supplement and the accompanying prospectus are part of a registration statement filed with the SEC. The SEC allows us to "incorporate by reference" into this prospectus supplement and the accompanying prospectus information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement. Information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement, while information that we file later with the SEC will automatically update and supersede the information in this prospectus supplement. We incorporate by reference into this prospectus supplement and the registration statement of which this prospectus supplement is a part the information or documents listed below that we have filed with the SEC:

- Our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 14, 2023;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023 and September 30, 2023, filed with the SEC on May 15, 2023, August 10, 2023 and November 14, 2023;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2022 from our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 11, 2023;

- Our Current Reports on Form 8-K, filed with the SEC on January 9, 2023, February 7, 2023, March 14, 2023, April 6, 2023, May 12, 2023, May 15, 2023, June 1, 2023, July 17, 2023, July 25, 2023, August 14, 2023, October 3, 2023, November 14, 2023, February 12, 2024 and February 14, 2024 (in each case other than any portions thereof deemed furnished and not filed); and
- The description of our common stock contained in our registration statement on Form 8-A (File No. 001-36510), filed with the SEC on June 18, 2014, under the Exchange Act, including any amendment or report filed for the purpose of updating such description, including Exhibit 4.2 to our Annual Report on Form 10-K for the year ended December 31, 2022.

In addition, all documents that we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and before the termination of the offering of our securities shall be deemed incorporated by reference into this prospectus supplement and accompanying prospectus and to be a part of this prospectus supplement and the accompanying prospectus from the respective dates of filing such documents. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed "filed" with the SEC, including any information furnished pursuant to items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

Any statement contained in a document incorporated by reference in this prospectus supplement and the accompanying prospectus shall be deemed to be modified or superseded for purposes of this prospectus supplement and the accompanying prospectus to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document that also is or is deemed to be incorporated by reference in this prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement or the accompanying prospectus.

You may obtain copies of any of these filings by contacting us at the address and telephone number indicated below. Documents incorporated by reference are available from us without charge, excluding all exhibits unless an exhibit has been specifically incorporated by reference into this prospectus supplement and the accompanying prospectus, by requesting them in writing or by telephone at:

Larimar Therapeutics, Inc.
Three Bala Plaza East, Suite 506
Bala Cynwyd, PA 19004
(844) 511-9056
Attention: Chief Financial Officer

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PROSPECTUS

$200,000,000

Common Stock
Preferred Stock
Debt Securities
Warrants
Units
Subscription Rights

We may offer and sell up to $200,000,000 in the aggregate of the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The prospectus supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "RISK FACTORS" ON PAGE 7 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Global Market under the symbol "LRMR." On November 9, 2022, the last reported sale price of our common stock on the Nasdaq Global Market was $2.96 per share.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is November 21, 2022.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, using a "shelf" registration process. By using a shelf registration statement, we may, from time to time, offer and sell, either individually or in combination, in one or more offerings, up to a total dollar amount of $200,000,000 of any combination of the securities described in this prospectus.

This prospectus provides you only with a general description of the securities that we may offer. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained or incorporated by reference in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading "Where You Can Find More Information."

We have not authorized anyone to provide you with any information or to make any representations other than those contained in, or incorporated by reference in, this prospectus, any applicable prospectus supplement or any free writing prospectuses 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 will not make 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 and the applicable prospectus supplement is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates.

When we refer to "Larimar," "we," "our," "us" and the "Company" in this prospectus, we mean Larimar Therapeutics, Inc., and its subsidiary unless otherwise specified. When we refer to "you," we mean the potential holders of the applicable series of securities.

Solely for convenience, tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these tradenames.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 filed with the SEC under the Securities Act of 1933, as amended, or the Securities Act, and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated herein by reference for a copy of such contract, agreement or other document.

We are currently subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and in accordance therewith file periodic reports, proxy statements and other information with the SEC. Our SEC filings are available to you on the SEC's website at http://www.sec.gov and in the "Investors" section of our website at www.larimartx.com. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC:

- Our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 25, 2022;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2022, June 30, 2022 and September 30, 2022, filed with the SEC on May 12, 2022, August 11, 2022 and November 10, 2022, respectively;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2021 from our Definitive Proxy Statement on Schedule 14A, filed on April 12, 2022;
- Our Current Reports on Form 8-K filed with the SEC on February 14, 2022, February 28, 2022, March 25, 2022, April 11, 2022, May 12, 2022 (both filings), August 11, 2022, September 14, 2022 (both filings), October 20, 2022 and November 10, 2022 (in each case other than any portions thereof deemed furnished and not filed); and
- The description of our common stock contained in our registration statement on Form 8-A (File No. 001-36510) filed with the SEC on June 18, 2014, under the Exchange Act, including any amendment or report filed for the purpose of updating such description, including Exhibit 4.2 to our Annual Report on Form 10-K for the year ended December 31, 2021.

We also incorporate by reference any future filings (other than any filings or portions of such reports that are not deemed "filed" under the Exchange Act in accordance with the Exchange Act and applicable SEC rules, including current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to the effectiveness of the registration statement, until we file a post-effective amendment that indicates the termination of the offering of

the securities made by this prospectus, and will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents by writing or telephoning us at the following address or phone number below. You may also access this information on our website at www.larimartx.com by viewing the "Financials & Filings" subsection of the "Investors" menu. No additional information is deemed to be part of or incorporated by reference into this prospectus.

Larimar Therapeutics, Inc.
Three Bala Plaza East, Suite 506
Bala Cynwyd, PA 19004
(844) 511-9056
Attention: Chief Financial Officer

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents incorporated by reference may contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act about us and our subsidiary. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking terminology such as "believes," "expects," "may," "will," "could," "should," "projects," "plans," "goal," "targets," "potential," "estimates," "pro forma," "seeks," "intends" or "anticipates" or the negative thereof or comparable terminology, although not all forward-looking statements contain these identifying words. Forward-looking statements include, but are not limited to, statements concerning:

- our ability to successfully engage with, and satisfactorily respond to, requests from the U.S. Food and Drug Administration, or FDA, for further information and data regarding the CTI-1601 clinical trial, including the FDA's review of data from cohort 1 of the Phase 2 dose exploration trial, and the FDA's agreement to allow us to perform additional cohorts and/or initiate other clinical trials for CTI-1601 and the timing and outcomes of such interactions;
- uncertainties in obtaining successful non-clinical or clinical results that reliably and meaningfully demonstrate safety, tolerability and efficacy profiles that are satisfactory to the FDA, European Medicines Agency, or EMA, and other comparable regulatory authorities for marketing approval for CTI-1601 or any other product candidate that we may develop in the future and unexpected costs that may result therefrom;
- delays in patient recruitment (including the impact of other clinical trials of competitive products), delays as a result of clinical and non-clinical results and FDA's request for additional studies, changes in clinical protocols, regulatory restrictions, including additional clinical holds, and milestones for CTI-1601, including those associated with COVID-19 and the efforts to mitigate it;
- uncertainties associated with the clinical development and regulatory approval for CTI-1601 or any other product candidate that we may develop in the future, including potential delays in the commencement, enrollment and completion of clinical trials;
- the difficulties and expenses associated with obtaining and maintaining regulatory approval for CTI-1601 or any other product candidate we may develop in the future, and the indication and labeling under any such approval;
- our estimates regarding future results of operations, financial position, research and development costs, capital requirements and our needs for additional financing;
- how long we can continue to fund our operations with our existing cash, cash equivalents and marketable debt securities;
- our ability, and the ability of third-party manufacturers we engage, to optimize and scale CTI-1601 or any other product candidate's manufacturing process and to manufacture sufficient quantities of clinical supplies, and, if approved, commercial supplies of CTI-1601;
- our ability to realize any value from CTI-1601 and any other product candidate we may develop in the future in light of inherent risks and difficulties involved in successfully bringing product candidates to market and the risk that the product candidates, if approved, will not achieve broad market acceptance;
- our ability to comply with regulatory requirements applicable to our business and other regulatory developments in the United States and other countries;
- the size and growth of the potential markets for CTI-1601 or any other product candidate that we may develop in the future, the rate and degree of market acceptance of CTI-1601 or any other product candidate, if approved, that we may develop in the future and our ability to serve those markets;

- competing therapies and products including those that are currently in clinical development which become available via marketing authorizations or compassionate use and their impact on our ability to recruit and retain clinical trial patients, to obtain and maintain potential expedited regulatory pathways, and to commercialize current and future product candidates, if approved, (including the impact of potential barriers to entry if a competitor is able to establish a strong market position before we are able to commercialize our products);
- our ability to obtain and maintain patent protection and defend our intellectual property rights against third-parties;
- the performance of third parties upon which we depend, including third-party contract research organizations and third-party suppliers, manufacturers, distributors, and logistics providers;
- our ability to maintain our relationships, and contracts with our key vendors and to identify and contract with alternate or secondary key vendors;
- our ability to recruit and retain key scientific, technical, commercial, and management personnel and to retain our executive officers;
- our ability to maintain proper functionality and security of our internal computer and information systems and prevent or avoid cyber-attacks, malicious intrusion, breakdown, destruction, loss of data privacy or other significant disruption;
- the extent to which health epidemics, unforeseen emergencies and other outbreaks of communicable diseases, including the ongoing COVID-19 pandemic and the efforts to mitigate it, and geopolitical turmoil could disrupt our operations, the operations of third parties on which we rely or the operations of regulatory agencies we interact with in the development of CTI-1601; and
- the potential impact of healthcare reform in the United States, including the Inflation Reduction Act of 2022, and measures being taken worldwide designed to reduce healthcare costs and limit the overall level of government expenditures.

You should read this prospectus and the documents incorporated by reference completely and with the understanding that our actual future results may be materially different from what we currently expect. Our business and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors discussed under the heading “Risk Factors” contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

You should assume that the information appearing in this prospectus, any accompanying prospectus supplement or related free writing prospectus and any document incorporated herein by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

ABOUT LARIMAR

Overview

We are a clinical-stage biotechnology company focused on developing treatments for patients suffering from complex rare diseases using our novel cell penetrating peptide technology platform. Our lead product candidate, CTI-1601, is a subcutaneously administered, recombinant fusion protein intended to deliver human frataxin, or FXN, an essential protein, to the mitochondria of patients with Friedreich's ataxia. Friedreich's ataxia is a rare, progressive and fatal disease in which patients are unable to produce enough FXN due to a genetic abnormality. There is currently no effective therapy for Friedreich's ataxia.

We have completed two Phase 1 clinical trials in patients with Friedreich's ataxia. We have received an orphan drug designation, fast track designation and rare pediatric disease designation, from the U.S. Food and Drug Administration, or FDA, for CTI-1601. In addition, we received orphan drug designation for CTI-1601 from the European Commission and a Priority Medicines designation from the European Medicines Agency, or EMA. The receipt of such designations or positive opinions may not result in a faster development process, review or approval compared to products considered for approval under conventional FDA or EMA procedures and does not assure ultimate approval by the FDA or EMA.

Our cell penetrating peptide technology platform, which enables a therapeutic molecule to cross a cell membrane to reach intracellular targets, has the potential to enable the treatment of other rare and orphan diseases. We intend to use our proprietary platform to target additional orphan indications characterized by deficiencies in or alterations of intracellular content or activity.

Since our inception, we have devoted substantially all of our resources to developing CTI-1601, building our intellectual property portfolio, developing third-party manufacturing capabilities, business planning, raising capital, and providing general and administrative support for such operations.

We have assembled an experienced management team, each member of which has over 20 years of pharmaceutical industry experience. Our management team and consultants have significant expertise in discovery, nonclinical and clinical development, regulatory affairs and the development of manufacturing processes utilizing good manufacturing practices for biologics and small molecules. We believe that our management team's diverse mix of skills provides for the implementation of effective approaches to drug and biologic development.

Corporate Information

We were founded in 2005 as a Delaware corporation under the name Zafgen, Inc. Our principal executive offices are located at Three Bala Plaza East, Suite 506, Bala Cynwyd, PA 19004, and our telephone number is (844) 511-9056. Our website address is *www.larimartx.com*. The information on, or that can be accessed through, our website is not part of this prospectus and is not incorporated by reference herein. We have included our website address as an inactive textual reference only. References in this prospectus to "we," "us," "our," "our company" or "Larimar" refer to Larimar Therapeutics, Inc. and its subsidiary.

In May 2020, we completed our business combination with Chondrial Therapeutics, Inc., or Chondrial, and changed our name from "Zafgen, Inc." to "Larimar Therapeutics, Inc." Chondrial was determined to be the accounting acquirer for financial reporting purposes, our historical financials are those of Chondrial and the business conducted by Chondrial became our business.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors included in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q filed with the SEC, as such risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC, including subsequent Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, and the risk factors described under the caption "Risk Factors" in any applicable prospectus supplement. See "Where You Can Find More Information" and "Incorporation of Certain Information by Reference." If any of these risks actually occurs, our business, results of operations and financial condition could suffer. In that case, the trading price of our securities could decline, and you could lose all or part of your investment. Additional risks and uncertainties not currently known to us, or that we currently believe are immaterial, may also adversely affect our business, operating results and financial condition and the value of an investment in our securities. In addition, past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our certificate of incorporation, which has been publicly filed with the SEC. See "Where You Can Find More Information." For a complete description, you should refer to our ninth amended and restated certificate of incorporation, as amended, or the Charter, and our amended and restated bylaws, or the Bylaws, copies of which are incorporated by reference as exhibits to the registration statement of which this prospectus is a part.

Common Stock

Authorized Capital Stock. Our authorized capital stock consists of (i) 115,000,000 shares of common stock, par value $0.001 per share, of which 43,269,200 shares have been issued and are outstanding as of November 9, 2022, referred to as the capitalization date, and (ii) 5,000,000 shares of preferred stock, par value $0.001 per share, of which no shares have been issued and there currently are no shares outstanding as of the capitalization date. We do not hold any shares of our capital stock in our treasury.

Voting Rights. Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders. The holders of our common stock do not have any cumulative voting rights.

Dividends. Holders of our common stock are entitled to receive ratably any dividends declared by our Board of Directors, or the Board, out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock.

No Preemptive or Similar Rights. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions. In the event of a liquidation, dissolution or winding up of us, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any preferred stock then outstanding.

Transfer Agent and Registrar. The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Listing. Our common stock is listed on the Nasdaq Global Market under the symbol "LRMR." On November 9, 2022, the last reported sale price of our common stock on the Nasdaq Global Market was $2.96 per share. As of November 9, 2022, we had approximately 24 stockholders of record.

Preferred Stock

Our Board currently has the authority, without further action by our stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock by us could adversely affect the voting power of holders of our common stock and the likelihood that such holders will receive dividend payments and payments upon a liquidation of us. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of us or other corporate action. No shares of preferred stock are outstanding, and we have no present plans to issue any shares of preferred stock.

Provisions of Our Charter and Bylaws and Delaware Anti-Takeover Law

Certain provisions of the Delaware General Corporation Law, or DGCL, and of our Charter and Bylaws 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. 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.

Board Composition and Filling Vacancies. Our Charter provides for the division of our Board into three classes serving staggered three-year terms, with one class being elected each year. Our Charter 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, 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 Charter 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.

Meetings of Stockholders. Our Charter and Bylaws provide that only a majority of the members of our Board 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 Bylaws 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 Bylaws 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 nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our Bylaws specify the requirements as to form and content of all stockholders' notices.

Amendment to Charter and Bylaws. As required by the DGCL, any amendment of our Charter must first be approved by a majority of our Board, and if required by law or our Charter, 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, board composition, limitation of liability and the amendment of our Charter 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 Bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the Bylaws; 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 our Board 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.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the DGCL. 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, the 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 the 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 or other disposition involving the interested stockholder of 10% or more of the assets of the corporation any conflicts or violations of each party's agreements as a result of the merger or the merger agreement;
- 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 interested stockholder; and
- 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.

Exclusive Jurisdiction of Certain Actions. Our Charter provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our Charter or our Bylaws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine. This provision does not apply to claims arising under the Exchange Act or the Securities Act. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar exclusive forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could rule that this provision in our Charter is inapplicable or unenforceable.

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a third party to be identified therein, as trustee. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement and you should read the indenture for provisions that may be important to you. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

As used in this section only, “Larimar,” “we,” “our” or “us” refer to Larimar Therapeutics, Inc., excluding our subsidiary, unless expressly stated or the context otherwise requires.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer’s certificate or by a supplemental indenture. The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be issued in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered, the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;

- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities and the period or periods within which, the price or prices at which and in the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of $1,000 and any integral multiple thereof;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- the designation of the currency, currencies or currency units in which payment of principal of, premium, if any, and interest on the debt securities will be made;
- if payments of principal of, premium, if any, or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
- any provisions relating to any security provided for the debt securities;
- any addition to, deletion of or change in the Events of Default (as defined below) described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
- the provisions, if any, relating to conversion or exchange of any debt securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;
- any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
- whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the United States federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, or the Depositary, or a nominee of the Depositary (we will refer to any debt security represented by a global debt security as a "book-entry debt security"), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a "certificated debt security") as set forth in the applicable prospectus supplement. Except as set forth under the heading "Global Debt Securities and Book-Entry System" below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities. You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange.

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depositary, and registered in the name of the Depositary or a nominee of the Depositary. Please see "Global Securities."

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a "successor person") unless:

- we are the surviving corporation or the successor person (if other than Larimar) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on the debt securities and under the indenture; and

- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us.

Events of Default

"Event of Default" means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or Larimar and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of Larimar; and
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiary outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof.

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall mail to each securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading “Consolidation, Merger and Sale of Assets”;
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or Events of Default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depositary;
- to make any change that does not adversely affect the rights of any holder of debt securities;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;

- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee;
- to conform the terms of the indenture (insofar as it applies to any series of debt securities issued under the indenture) or the terms of the debt securities of any series issued under the indenture to the description thereof contained in any prospectus, prospectus supplement or similar offering document used in connection with the initial offering and sale of such debt securities to investors in a public or private offering; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act.

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, premium or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may, on behalf of the holders of all debt securities of that series, waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series

(subject to certain exceptions). We will be so discharged upon the irrevocable deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders and beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred.

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described under the heading “Consolidation, Merger and Sale of Assets” and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement; and
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (“covenant defeasance”).

The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and
- delivering to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders and beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred.

No Personal Liability of Directors, Officers, Employees or Securityholders

None of our past, present or future directors, officers, employees or securityholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability.

This waiver and release is part of the consideration for the issue of the debt securities. However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the debt securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party's address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following summary of material provisions of the warrants and warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- United States federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled to:

- vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as our stockholders.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are

exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement;
- the price or prices at which such units will be issued;
- the applicable United States federal income tax considerations relating to the units;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- any other terms of the units and of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock,” “Description of Debt Securities” and “Description of Warrants” will apply to the securities included in each unit, to the extent relevant and as may be updated in any prospectus supplements.

DESCRIPTION OF OUR SUBSCRIPTION RIGHTS

As specified in any applicable prospectus supplement, we may issue subscription rights consisting of one or more debt securities, shares of preferred stock, shares of common stock or any combination of such securities.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depositary, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depositary to its nominee or by the nominee to the depositary, or by the depositary or its nominee to a successor depositary or to a nominee of the successor depositary.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a "banking organization" within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a "clearing corporation" within the meaning of the New York Uniform Commercial Code; and
- a "clearing agency" registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants' accounts, thereby eliminating the need for physical movement of securities certificates. "Direct participants" in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC's records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants' records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC's records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depositary with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depositary is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depositary for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depositary is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;
- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an Event of Default has occurred and is continuing with respect to such series of securities, we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities.

Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depositary directs. It is expected that these directions will be based upon directions received by the depositary from its participants with respect to ownership of beneficial interests in the global securities.

We have obtained the information in this section and elsewhere in this prospectus concerning DTC and DTC's book-entry system from sources that are believed to be reliable, but we take no responsibility for the accuracy of this information.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositaries, which in turn will hold such interests in customers' securities accounts in such depositaries' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositaries; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the

counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depositary to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositaries.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and/or Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, "at-the-market offerings," negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- in "at-the-market offerings" (as defined in Rule 415 under the Securities Act);
- at negotiated prices; or
- through any method permitted by applicable law and described in a prospectus supplement.

Each time that we sell securities covered by this prospectus, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us, if applicable.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock or preferred stock will be listed on the Nasdaq Global Market, but any other securities may or may not be listed on a national securities exchange.

To facilitate the offering of securities, and to the extent permitted by and in accordance with Regulation M under the Exchange Act, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities,

which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

To the extent permitted by and in accordance with Regulation M under the Exchange Act, any underwriters who are qualified market makers on Nasdaq may engage in passive market making transactions in the securities on Nasdaq during the business day prior to the pricing of an offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

If indicated in the applicable prospectus supplement, underwriters or other persons acting as agents may be authorized to solicit offers by institutions or other suitable purchasers to purchase the securities at the public offering price set forth in the prospectus supplement, pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in the prospectus supplement. These purchasers may include, among others, commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions. Delayed delivery contracts will be subject to the condition that the purchase of the securities covered by the delayed delivery contracts will not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject. The underwriters and agents will not have any responsibility with respect to the validity or performance of these contracts.

We may engage in "at-the-market offerings" into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

No securities may be sold under this prospectus without delivery, in paper format or in electronic format, or both, of the applicable prospectus supplement describing the method and terms of the offering.

LEGAL MATTERS

Troutman Pepper Hamilton Sanders LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Larimar Therapeutics, Inc. Additional legal matters may be passed upon for us or any underwriters, dealers or agents by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2021 have been so incorporated 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.

17,162,472 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Joint Bookrunning Managers

Leerink Partners **Citigroup** **Guggenheim Securities**

Lead Manager

LifeSci Capital

February 14, 2024