UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 14, 2023

Larimar Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**001-36510**	**20-3857670**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

Three Bala Plaza East **Bala Cynwyd, Pennsylvania**	**19004**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (844) 511-9056

N/A
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	LRMR	NASDAQ Global Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 2.02 Results of Operations and Financial Condition.

On March 14, 2023, Larimar Therapeutics, Inc. (the "Company") announced its financial results and operational highlights for the fourth quarter of 2022 and for the year ended December 31, 2022. A copy of the press release is being furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The information furnished pursuant to this Item 2.02, including Exhibit 99.1 attached hereto, is intended to be furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 8.01 Other Events.

On March 14, 2023, the Company posted on its website an updated slide presentation, which is attached as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated herein by reference. Representatives of the Company will use the presentation in various meetings with investors, analysts and other parties from time to time.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Below is a list of exhibits included with this Current Report on Form 8-K.

Exhibit No.	Document
99.1	Press Release issued by Larimar Therapeutics, Inc. on March 14, 2023*
99.2	Larimar Therapeutics, Inc. Corporate Presentation, dated March 14, 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Furnished herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Larimar Therapeutics, Inc.

Date: March 14, 2023

By: /s/ Carole S. Ben-Maimon, M.D.
Name: Carole S. Ben-Maimon, M.D.
Title: President and Chief Executive Officer

Larimar Therapeutics Reports Fourth Quarter and Full Year 2022 Operating and Financial Results

- *First cohort of Larimar's Phase 2 dose exploration trial of CTI-1601 in participants with Friedreich's ataxia (FA) is fully enrolled and proceeding as planned*
- *Larimar expects to provide an update on the next steps of the Phase 2 trial in Q2 2023, after the FDA and independent data monitoring committee review data from the first cohort and provide feedback to the Company*
- *Top-line safety, pharmacokinetic, and pharmacodynamic (e.g., frataxin level) data from both of the Phase 2 trial's planned cohorts expected in 2H 2023*
- *Cash and investments of $118.4 million at December 31, 2022 provides projected cash runway into 2H 2024*

Bala Cynwyd, PA, March 14, 2023 – Larimar Therapeutics, Inc. ("Larimar") (Nasdaq: LRMR), a clinical-stage biotechnology company focused on developing treatments for complex rare diseases, today reported its fourth quarter and full year 2022 operating and financial results.

"Our recent progress provides a strong foundation for growth as we work to develop CTI-1601 as the first FA therapy designed to potentially address frataxin deficiency, which is the underlying cause of the disease," said Carole Ben-Maimon, MD, President and Chief Executive Officer of Larimar. "The first cohort of our Phase 2 trial is fully enrolled, with an update that will outline the next steps for the trial anticipated in the second quarter. We also recently strengthened our balance sheet and leadership team with a financing and the appointment of long-time Johnson & Johnson veteran Dr. Gopi Shankar as our Chief Development Officer. Looking forward, we believe these accomplishments, together with our Phase 1 proof-of-concept data, leave us well positioned to build on our positive momentum as we seek to improve the therapeutic paradigm for patients with FA, who remain in need of a therapy that may address the root cause of the disease by increasing frataxin levels."

2022 and Subsequent Highlights

- Larimar recently completed enrollment in the 25 mg cohort of a Phase 2, four-week, placebo-controlled, dose exploration trial of CTI-1601 in participants with FA. The trial was cleared to begin enrollment in this first cohort in September 2022, when the U.S. Food and Drug Administration (FDA) lifted the full clinical hold previously placed on the CTI-1601 program and imposed a partial hold. The initiation of additional cohorts in the Phase 2 trial and/or the initiation of other clinical trials of CTI-1601 are contingent on a review of the Phase 2 trial's 25 mg cohort data by its independent data monitoring committee (IDMC) and the FDA. Larimar expects to provide an update on the next steps for the Phase 2 trial in Q2 2023, after it receives feedback from the FDA and IDMC on their review of data from the trial's 25 mg cohort. Top-line safety, pharmacokinetic, and pharmacodynamic (e.g., frataxin level) data from both cohorts of the Phase 2 trial are expected in 2H 2023.
- In September 2022, Larimar raised net proceeds of approximately $75.2 million through an underwritten offering of common stock, with Deerfield Management and other notable life science investors participating in the offering.
- In October 2022, Larimar announced the issuance of U.S. Patent No. 11,459,363, which provides composition of matter protection for CTI-1601 into at least July 2040.
- In February 2023, Larimar strengthened its leadership team with the appointment of Gopi Shankar, PhD, MBA, FAAPS, to the newly created position of Chief Development Officer. In this role, Dr. Shankar is responsible for the strategic development of Larimar's clinical and R&D programs. Dr. Shankar joined Larimar with more than 20 years of experience leading the development of novel biologics, most recently serving as Vice President and Global Head, Biologics Development Sciences at Janssen Research & Development (a pharmaceutical company of Johnson & Johnson, Inc.).

Fourth Quarter and Full Year 2022 Financial Results

As of December 31, 2022, the Company had cash, cash equivalents and marketable securities totaling $118.4 million.

The Company reported a net loss for the fourth quarter of 2022 of $9.4 million, or $0.21 per share, compared to a net loss of $9.1 million, or $0.50 per share, for the fourth quarter of 2021.

Research and development expenses for the fourth quarter of 2022 were $7.2 million compared to $6.3 million for the fourth quarter of 2021. The increase in research and development expenses compared to the prior year period was primarily driven by an increase of $1.8 million in clinical costs associated with the ongoing Phase 2 trial, an increase of $0.4 million in personnel expense, an increase of $0.3 million associated with the license milestone achievement in Q4 2022 and an increase of $0.1 million in non-cash, stock-based compensation expense associated with stock option grants made in 2022, partially offset by a decrease of $0.5 million in drug manufacturing costs, a decrease of $0.4 million in consulting expenditures, a decrease of $0.4 million in nonclinical development costs and a decrease of $0.3 million in internal lab costs.

General and administrative expenses for the fourth quarter of 2022 were $3.2 million compared to $2.8 million for the fourth quarter of 2021. The increase in general and administrative expense was primarily driven by an increase of $0.2 million in legal fees associated with the new ATM agreement and patent work performed during Q4 2022, an increase of $0.2 million in personnel expense primarily associated with an employee severance agreement, partially offset by a decrease of $0.2 million in operational costs primarily related to technology and recruiting services.

For the full year 2022, the Company reported a net loss of $35.4 million, or $1.37 per share, compared to a net loss of $50.6 million, or $2.95 per share for the same period in 2021.

Research and development expenses for the full year 2022 were $24.3 million compared to $38.4 million for the same period in 2021. The decrease in research and development expenses was primarily driven by a decrease of $9.5 million in drug manufacturing costs, a decrease of $3.7 million in nonclinical development costs, a decrease of $1.6 million in clinical expense, a decrease of $0.9 million in consulting expenditures, and a decrease of $0.7 million in internal lab costs. These decreases were partially offset by an increase of $1.2 million in personnel expense, an increase of $0.7 million in non-cash, stock-based compensation expense associated with stock option grants made in 2021 and 2022 and an increase of $0.3 million in royalty fees associated with the milestone achieved in 2022.

General and administrative expenses for the full year 2022 were $12.2 million compared to $12.1 million for the same period in 2021. The increase in general and administrative expense was primarily driven by an increase of $0.5 million in stock-based compensation expense associated with stock option grants made in 2021 and 2022 and an increase of $0.5 million in personnel expense, partially offset by a decrease of $0.6 million in operational costs primarily related to technology and recruiting services and a decrease of $0.2 million in professional fees primarily associated with legal and consulting expense.

About Larimar Therapeutics

Larimar Therapeutics, Inc. (Nasdaq: LRMR), is a clinical-stage biotechnology company focused on developing treatments for complex rare diseases. Larimar's lead compound, CTI-1601, is being developed as a potential treatment for Friedreich's ataxia. Larimar also plans to use its intracellular delivery platform to design other fusion proteins to target additional rare diseases characterized by deficiencies in intracellular bioactive compounds. For more information, please visit: https://larimartx.com.

Forward-Looking Statements

This press release contains forward-looking statements that are based on Larimar's management's beliefs and assumptions and on information currently available to management. All statements contained in this release other than statements of historical fact are forward-looking statements, including but not limited to Larimar's expectations regarding its ability to resolve the partial clinical hold imposed by the FDA related to

CTI-1601, Larimar's ability to develop and commercialize CTI-1601 and other planned product candidates, Larimar's planned research and development efforts, including the timing of its CTI-1601 clinical development plan and other matters regarding Larimar's business strategies, ability to raise capital, use of capital, results of operations and financial position, and plans and objectives for future operations.

In some cases, you can identify forward-looking statements by the words "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors include, among others, Larimar's ability to successfully engage with the FDA and satisfactorily respond to requests from the FDA for further information and data regarding the CTI-1601 clinical trial including the FDA review of data from cohort one from the Phase 2 dose exploration trial and FDA's agreement to escalate the dosing in cohort two, the timing and outcomes of Larimar's interactions with the FDA concerning the partial clinical hold, the success, cost and timing of Larimar's product development activities, nonclinical studies and clinical trials, including CTI-1601 clinical milestones; that preliminary clinical trial results may differ from final clinical trial results, that earlier non-clinical and clinical data and testing of CTI-1601 may not be predictive of the results or success of later clinical trials, and assessments; the ongoing impact of the COVID-19 pandemic on Larimar's future clinical trials, manufacturing, regulatory, nonclinical study timelines and operations, and general economic conditions; Larimar's ability and the ability of third-party manufacturers Larimar engages, to optimize and scale CTI-1601's manufacturing process; Larimar's ability to obtain regulatory approvals for CTI-1601 and future product candidates; Larimar's ability to develop sales and marketing capabilities, whether alone or with potential future collaborators, and to successfully commercialize any approved product candidates; Larimar's ability to raise the necessary capital to conduct its product development activities; and other risks described in the filings made by Larimar with the Securities and Exchange Commission (SEC), including but not limited to Larimar's periodic reports, including the annual report on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, filed with or furnished to the SEC and available at www.sec.gov. These forward-looking statements are based on a combination of facts and factors currently known by Larimar and its projections of the future, about which it cannot be certain. As a result, the forward-looking statements may not prove to be accurate. The forward-looking statements in this press release represent Larimar's management's views only as of the date hereof. Larimar undertakes no obligation to update any forward-looking statements for any reason, except as required by law.

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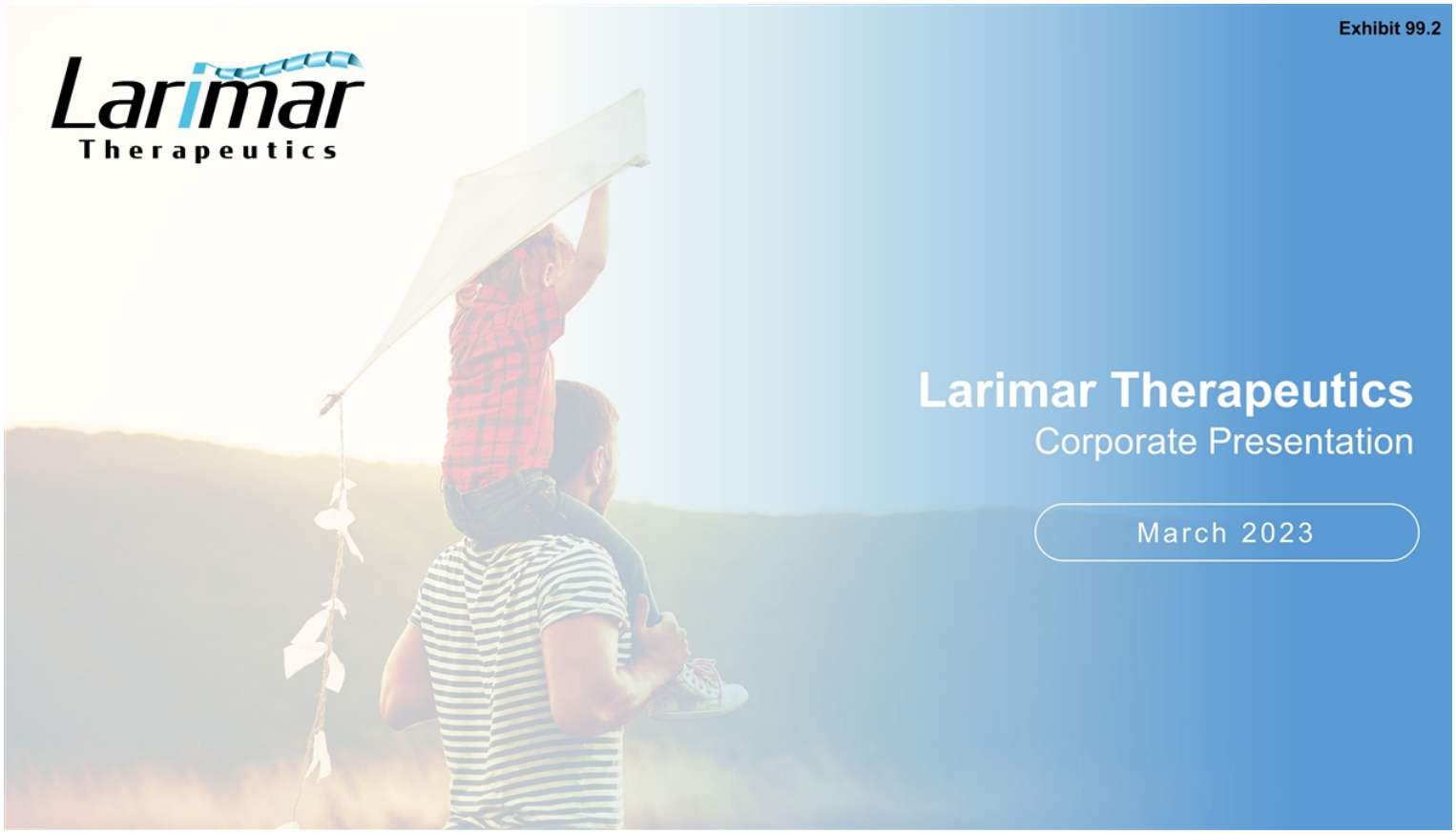
Larimar Therapeutics, Inc.
Consolidated Balance Sheet
(unaudited)

	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 26,825	$ 70,097
Marketable securities	91,603	—
Prepaid expenses and other current assets	2,311	2,107
Total current assets	120,739	72,204
Property and equipment, net	831	1,049
Operating lease right-of-use assets	2,858	3,406
Restricted cash	1,339	1,339
Other assets	638	669
Total assets	$ 126,405	$ 78,667
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 1,686	$ 1,660
Accrued expenses	8,408	6,592
Operating lease liabilities, current	611	594
Total current liabilities	10,705	8,846
Operating lease liabilities	4,797	5,408
Total liabilities	15,502	14,254
Commitments and contingencies (See Note 8)		
Stockholders' equity:		
Preferred stock; $0.001 par value per share; 5,000,000 shares authorized as of December 31, 2022 and December 31, 2021; no shares issued and outstanding as of December 31, 2022 and December 31, 2021	—	—
Common stock, $0.001 par value per share; 115,000,000 shares authorized as of December 31, 2022 and December 31, 2021; 43,269,200 and 17,710,450 shares issued and outstanding as of December 31, 2022 and December 31, 2021, respectively	43	18
Additional paid-in capital	262,496	180,645
Accumulated deficit	(151,605)	(116,250)
Accumulated other comprehensive loss	(31)	—
Total stockholders' equity	110,903	64,413
Total liabilities and stockholders' equity	$ 126,405	$ 78,667

Larimar Therapeutics, Inc.
Consolidated Statements of Operations
(In thousands, except share and per share data)
(unaudited)

	Three Months Ended December 31,		Year Ended December 31,	
	2022	2021	2022	2021
Operating expenses:				
Research and development	$ 7,218	$ 6,292	$ 24,250	$ 38,396
General and administrative	3,221	2,794	12,276	12,069
Total operating expenses	10,439	9,086	36,526	50,465
Loss from operations	(10,439)	(9,086)	(36,526)	(50,465)
Other income (expense), net	1,014	(48)	1,171	(171)
Net loss	$ (9,425)	$ (9,134)	$ (35,355)	$ (50,636)
Net loss per share, basic and diluted	$ (0.21)	$ (0.50)	$ (1.37)	$ (2.95)
Weighted average common shares outstanding, basic and diluted	43,897,603	18,338,853	25,761,394	17,164,284

Exhibit 99.2



Larimar Therapeutics

Corporate Presentation

March 2023

Forward-Looking Statements

This presentation contains forward-looking statements that are based on the beliefs and assumptions of Larimar Therapeutics, Inc. (“Company”) and on information currently available to management. All statements contained in this presentation other than statements of historical fact are forward-looking statements, including but not limited to statements regarding the expectations and assumptions regarding the future of the Company’s business, including the Company’s ability to develop and commercialize CTI-1601 and other planned product candidates, the Company’s planned research and development efforts, and other matters regarding the Company’s business strategies, use of capital, results of operations and financial position, and plans and objectives for future operations.

In some cases, you can identify forward-looking statements by the words “may,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “ongoing” or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors include, among others, the Company’s ability to successfully engage with the FDA and satisfactorily respond to requests from the FDA for further information and data regarding the CTI-1601 clinical trial including the FDA review of data from cohort one from the Phase 2 dose exploration trial and FDA ‘s agreement to escalate the dosing in cohort two , the timing and outcomes of the Company’s interactions with the FDA concerning the partial clinical hold, the success, cost and timing of the Company’s product development activities, nonclinical studies and clinical trials, including CTI-1601 clinical milestones; that preliminary clinical trial results may differ from final clinical trial results, that earlier non-clinical and clinical data and testing of CTI-1601 may not be predictive of the results or success of later clinical trials, and assessments; the ongoing impact of the COVID-19 pandemic on the Company’s future clinical trials, manufacturing, regulatory, nonclinical study timelines and operations, and the potential impact of the Russian invasion of Ukraine on the Company’s ability to raise additional capital and general economic conditions; the Company’s ability and the ability of third-party manufacturers the Company engages, to optimize and scale CTI-1601’s manufacturing process; the Company’s ability to obtain regulatory approvals for CTI-1601 and future product candidates; the Company’s ability to develop sales and marketing capabilities, whether alone or with potential future collaborators, and to successfully commercialize any approved product candidates; the Company’s ability to raise the necessary capital to conduct its product development activities; and other risks described in the filings made by the Company with the Securities and Exchange Commission (SEC), including but not limited to the Company’s periodic reports, including the annual report on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, filed with or furnished to the SEC and available at www.sec.gov. These forward-looking statements are based on a combination of facts and factors currently known by the Company and its projections of the future, about which it cannot be certain. As a result, the forward-looking statements may not prove to be accurate. These forward-looking statements are based on information currently available to us, and we assume no obligation to update any forward-looking statements, except as required by law.

Investment Highlights

Clinical-stage biotechnology company with a novel protein replacement therapy platform
Focused on addressing unmet needs in Friedreich's ataxia (FA) and potentially other complex rare diseases based on a platform technology backed by a strong intellectual property portfolio

Lead candidate: CTI-1601, a recombinant fusion protein designed to deliver frataxin to mitochondria
Orphan Drug (US & EU), Rare Pediatric Disease (US), Fast Track (US), & PRIME (EU) designations for FA

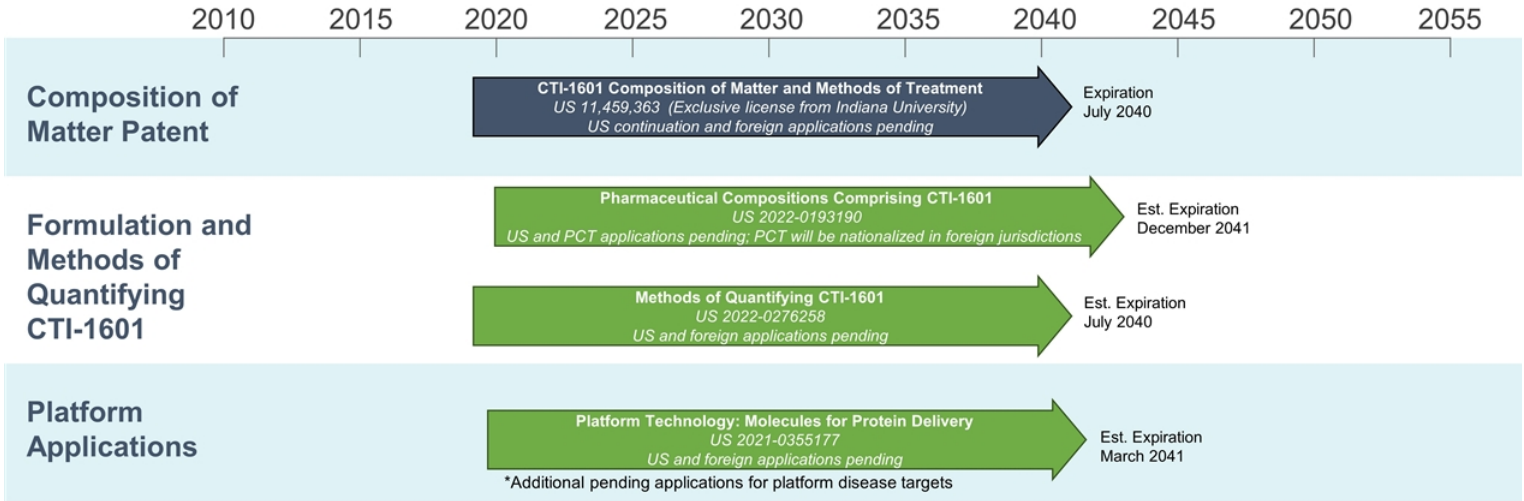
Double-blind, placebo-controlled Phase 1 proof-of-concept trials in FA patients complete
Data show dose dependent increases in frataxin (FXN) levels from baseline compared to placebo in all evaluated tissues with daily dosing & that CTI-1601 was generally well tolerated when dosed for up to 13 days

Placebo-controlled, Phase 2, 4-week dose exploration study in FA patients ongoing
Cohort 1 evaluates 25 mg dose; Due to partial clinical hold, dose escalation/further clinical studies contingent on FDA review of cohort 1 data; Plan to provide update in Q2 2023; Top-line data from trial expected in 2H 2023

Strong financial foundation with projected cash runway into 2H 2024
December 31, 2022 cash - $118.4M; September 2022 public offering raised $75.2M in net proceeds
High-quality institutional investor base includes founding investor Deerfield Management

Platform Technology is Supported by a Strong IP Portfolio

Granted CTI-1601 composition of matter patent extends into 2040



Additional CTI-1601 IP protection

- CTI-1601 pending applications cover key biomarkers and analytical tools
- CTI-1601 should be eligible for **12 years of market exclusivity** upon approval in the US (independent of patents) and at least **10 years of market exclusivity** upon approval in EU (independent of patents)

Larimar Therapeutics

Granted Pending

Friedreich's Ataxia (FA)

Rare and Progressive Disease

Caused by genetic defect resulting in low levels of frataxin

- Patients with FA only produce ~20-40% of normal frataxin levels depending on the tissue, sampling technique, and assay considered[1]
- Affects ~20,000 patients globally, with ~5,000 patients in the U.S. and majority of the remaining patients in the EU

Approximately 70% of patients present before age 14

- Initial symptoms may include unsteady posture, frequent falling and progressive difficulty in walking. By the time symptoms occur, heart damage may have already occurred. Progressive disease: symptoms worsen and patients are eventually confined to a wheelchair with speech becoming hesitant and jerky (often referred to as "scanning of speech")

Life expectancy of 30-50 years

- Early death usually caused by heart disease

No available therapies increase frataxin levels

- Only treatment approved for FA does not address frataxin deficiency

LRMR continues to have a strong relationship with Friedreich's Ataxia Research Alliance

- Dedicated FA patient advocacy group focused on treatments for FA

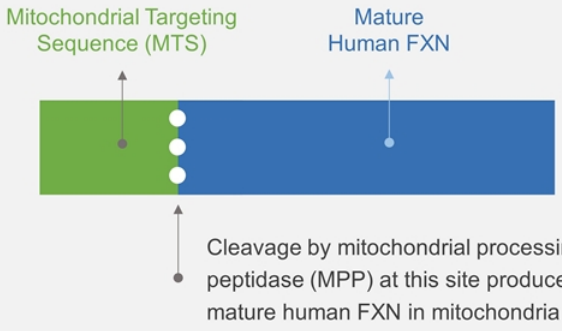
Larimar Therapeutics

1. E.C. Deutsch et al. Molecular Genetics and Metabolism 101 (2010) 238–245

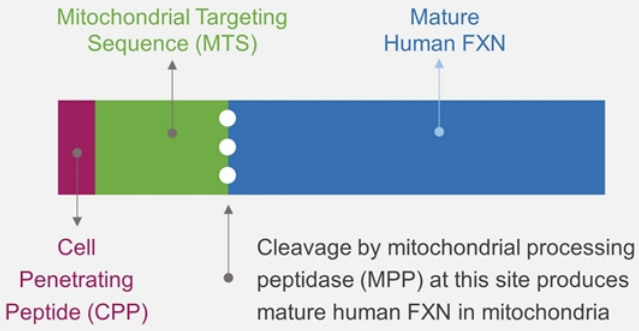
CTI-1601 is Designed to Deliver Additional Frataxin (FXN)

CTI-1601 maintains the cleavage site between the MTS and mature human FXN

STRUCTURE OF ENDOGENOUS FXN



STRUCTURE OF CTI-1601



The presence of the cleavage site allows the CPP and MTS to be removed by mitochondrial processing peptidase to produce mature human FXN in the mitochondria

Larimar Therapeutics

Ongoing Phase 2, Four-week Dose Exploration Study

Goal: Further characterize PK/PD and assess safety to inform long-term dose and dose regimen

Treatment Schedule

28-day Treatment Period

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

= Administration of CTI-1601 or placebo

= No Administration

Study Details

Population	Ambulatory and non-ambulatory Friedreich's ataxia patients ≥18 years of age. CTI-1601 treatment naïve or participated (if eligible) in a previous Larimar study.
Dose	**Cohort 1:** 25 mg **Cohort 2:** Dose escalation contingent on a review of Cohort 1 data by FDA and IDMC.
Key Endpoints	Frataxin levels in peripheral tissue, PK, PD, safety and tolerability. PD endpoints include lipid profiles and gene expression data.
Number of Patients	~12-15 patients in Cohort 1 randomized 2:1 to receive CTI-1601 or placebo.
Timing	Cohort 1 is fully enrolled and proceeding as planned; Expect to provide update on next steps of the trial in Q2 2023. Top-line data expected in 2H 2023.

Larimar Therapeutics

IDMC: Independent data monitoring committee

Overview of Phase 1 Data

Phase 1 Top-line Data Demonstrated POC for CTI-1601 in FA

Safety	CTI-1601 appears to be generally well tolerated at doses up to 100 mg administered daily for 13 days
Pharmacodynamics	Daily dosing of CTI-1601 resulted in dose-dependent increases in FXN levels from baseline compared to placebo controls in all evaluated tissues
Pharmacokinetics	Pharmacokinetic analyses support evaluating once-daily and every-other-day dosing regimens for CTI-1601
Conclusion	Daily subcutaneous (SC) administration of 50 mg and 100 mg doses of CTI-1601 resulted in FXN levels in buccal cells that are at, or in excess of, those we would expect to see in phenotypically normal heterozygous carriers (who have FXN levels of ~50% of unaffected persons)

Larimar Therapeutics

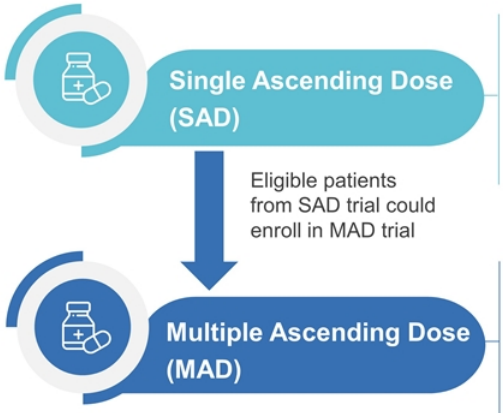
POC: Proof-of-concept

CTI-1601: Phase 1 Clinical Program in Patients with FA

Program consisted of double-blind, placebo controlled single- and multiple-ascending dose trials

Phase 1 Development Plan

- Two double-blind, placebo-controlled dosing trials in patients with FA
- Patient dosing began December 2019
- Safety Review Committee assessed all blinded data between each cohort to ensure patient safety



Number of subjects: 28
Dose levels: 25 mg, 50 mg, 75 mg and 100 mg (subcutaneous administration)
Treatment Duration: 1 day
1º Endpoint: Safety and tolerability
2º Endpoints: PK; PD; FXN levels; multiple exploratory
Status: Complete

Number of Subjects: 27
Dose Range: 25 mg, 50 mg, 100 mg (subcutaneous administration)
Treatment Regimen: Multiple increasing doses administered subcutaneously over 13 days
1º Endpoint: Safety and tolerability
2º Endpoints: PK; PD; FXN levels (buccal cells, platelets, optional skin biopsies); multiple exploratory
Status: Complete

Completed Multiple Ascending Dose Study

Treatment Schedules for Each Cohort

Cohort 1 (25 mg; n = 8)

13-day Treatment Period

1	2	3	4	5	6	7	8	9	10	11	12	13	14

= Administration of CTI-1601 or placebo

= No Administration

Cohort 2 (50 mg; n = 9)

13-day Treatment Period

1	2	3	4	5	6	7	8	9	10	11	12	13	14

= Administration of CTI-1601 or placebo

= No Administration

Cohort 3 (100 mg n = 10)

13-day Treatment Period

1	2	3	4	5	6	7	8	9	10	11	12	13	14

= Administration of CTI-1601 or placebo

= No Administration

FXN Level Sampling Days Presented for Each Cohort

Cohort 1 Sampling Days	
Buccal Cells	Baseline, Day 4, Day 13
Skin	Baseline, Day 13
Platelets	Baseline, Day 4, Day 13

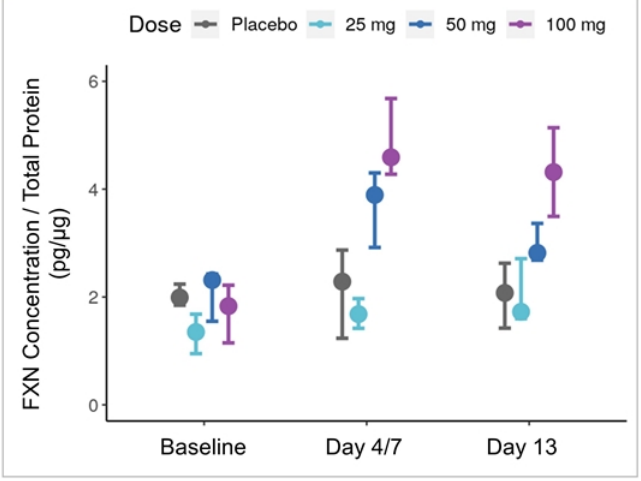
Cohort 2 Sampling Days	
Buccal Cells	Baseline, Day 7, Day 13
Skin	Baseline, Day 13
Platelets	Baseline, Day 7, Day 13

Cohort 3 Sampling Days	
Buccal Cells	Baseline, Day 7, Day 13
Skin	Baseline, Day 13
Platelets	Baseline, Day 7, Day 13

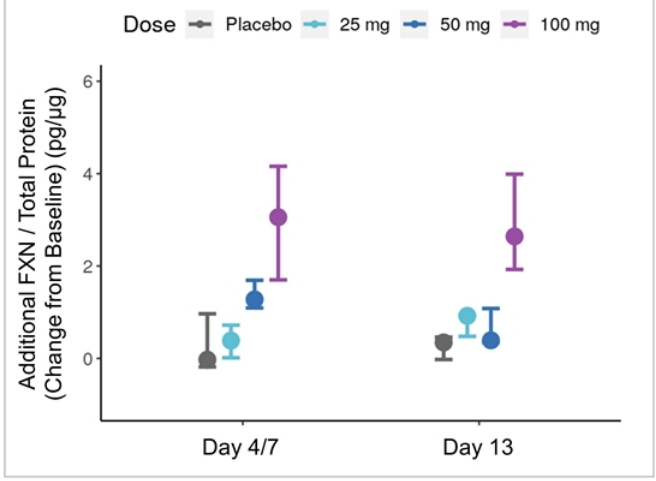
Larimar Therapeutics

Dose Dependent Increases in FXN Levels Observed in Buccal Cells

FXN* Levels By Dose Group (Buccal Cells)



FXN* Change from Baseline By Dose Group (Buccal Cells)



*FXN levels measured via detection of peptide derived from mature FXN; Data represent median and 25th and 75th percentiles; FXN levels from baseline, Day 4, & Day 13 measurements are shown for data derived from the 25 mg cohort; FXN levels from baseline, Day 7 & Day 13 measurements are shown for data derived from the 50 & 100 mg cohorts; Sample collection days varied in each cohort per the trial protocol

Data Compare Favorably to FXN Levels Expected in Heterozygous Carriers

Achieved median FXN levels that were >60% of the median FXN levels observed in healthy controls

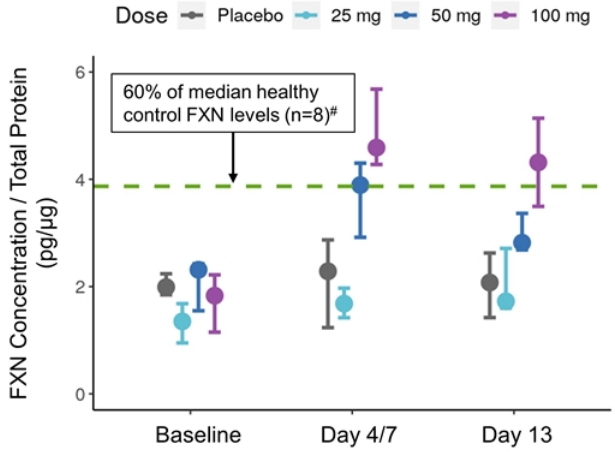
Benchmarking Clinical Relevance

- FXN levels in buccal cells and blood have been shown to correlate with neurological function in FA patients[1]
- Patients with FA only produce ~20-40% of normal frataxin levels depending on the tissue considered[2]
- Heterozygous carriers who show no signs of disease have FXN levels of ~50% of unaffected healthy persons[2]

Comparison to Healthy Controls

- FXN levels were measured in buccal cells from 8 healthy controls using the same assay and sampling technique employed in the Phase 1 MAD trial
- With daily administration, patients in Cohorts 2 & 3 of the Phase 1 MAD trial achieved median buccal cell FXN levels that were >60% of the median FXN levels observed in healthy controls

FXN* Levels By Dose Group (Buccal Cells)



*FXN levels measured via detection of peptide derived from mature FXN; #Data on file; Data represent median and 25th and 75th percentiles ; FXN levels from baseline, Day 4, & Day 13 measurements are shown for data derived from the 25 mg cohort; FXN levels from baseline, Day 7 & Day 13 measurements are shown for data derived from the 50 & 100 mg cohorts; Sample collection days varied in each cohort per the trial protocol. 1. Lazaropoulos et al. Ann Clin Transl Neurol. 2015 Aug; 2(8): 831–842; 2. E.C. Deutsch et al. Molecular Genetics and Metabolism 101 (2010) 238–245.

Repeated subcutaneous injections of CTI-1601 were generally well tolerated in Phase 1 MAD trial

Summary of MAD trial safety data:

Repeated doses (25 mg, 50 mg, and 100 mg) of CTI-1601 or placebo were administered subcutaneously.

- No serious adverse events (SAEs), important medical events, or treatment-related severe adverse events were observed.
- Most common adverse events (AEs) were mild and moderate injection site reactions (ISR). At least one ISR was seen in 43% of patients receiving placebo, and all patients receiving CTI-1601 experienced ISRs.
- Most ISRs resolved within an hour after injection, and all ISRs resolved without intervention. There were no study discontinuations due to ISRs.
- Except for ISRs, the number and severity of AEs did not increase with increasing exposure to CTI-1601.

CTI-1601 Clinical Development Plan

Update on the next steps of the Phase 2 trial planned for Q2 2023

Trials Include:

Phase 2, four-week dose exploration study intended to identify dose and dose regimen for long-term studies. Cohort 1 is fully enrolled*. Top-line data expected in 2H 2023

Jive open-label extension trial for eligible patients who participated in SAD, MAD, and/or four-week dose exploration studies. Initiation currently planned for 2H 2023*

MAD trial in patients 2 to 17 years of age. Participants eligible to screen for Jive OLE trial. Initiation currently planned for 2H 2023*

Global double-blind placebo-controlled pivotal trial

*Due to the FDA partial clinical hold, the conduct of additional cohorts in the Phase 2 study, as well as other studies will be subject to FDA review of Phase 2 cohort 1 data, and possibly other data.

Investment Highlights

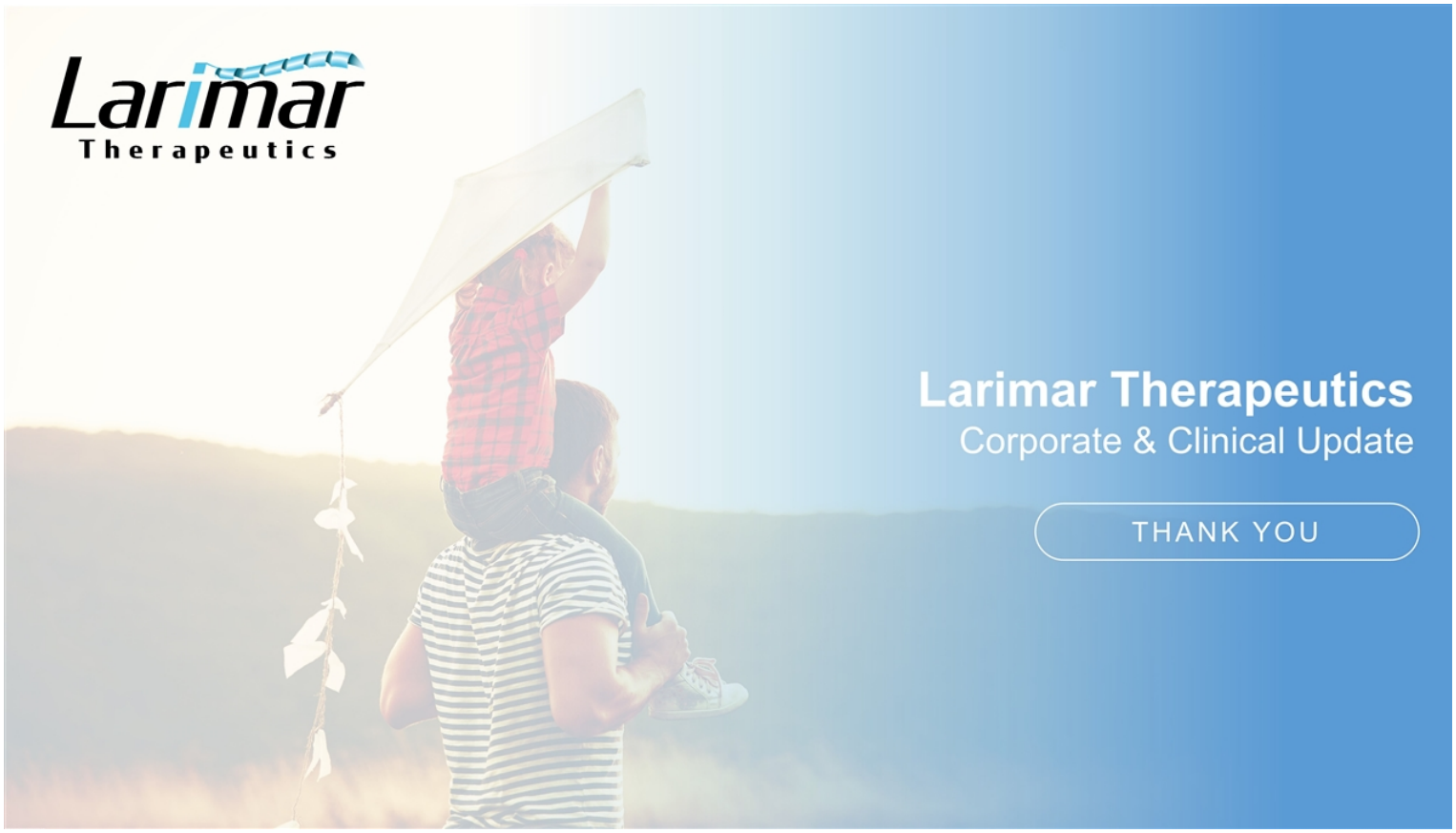
Clinical-stage biotechnology company with a novel protein replacement therapy platform
Focused on addressing unmet needs in Friedreich's ataxia (FA) and potentially other complex rare diseases based on a platform technology backed by a strong intellectual property portfolio

Lead candidate: CTI-1601, a recombinant fusion protein designed to deliver frataxin to mitochondria
Orphan Drug (US & EU), Rare Pediatric Disease (US), Fast Track (US), & PRIME (EU) designations for FA

Double-blind, placebo-controlled Phase 1 proof-of-concept trials in FA patients complete
Data show dose dependent increases in frataxin (FXN) levels from baseline compared to placebo in all evaluated tissues with daily dosing & that CTI-1601 was generally well tolerated when dosed for up to 13 days

Placebo-controlled, Phase 2, 4-week dose exploration study in FA patients ongoing
Cohort 1 evaluates 25 mg dose; Due to partial clinical hold, dose escalation/further clinical studies contingent on FDA review of cohort 1 data; Plan to provide update in Q2 2023; Top-line data from trial expected in 2H 2023

Strong financial foundation with projected cash runway into 2H 2024
December 31, 2022 cash - $118.4M; September 2022 public offering raised $75.2M in net proceeds
High-quality institutional investor base includes founding investor Deerfield Management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Corporate & Clinical Update
THANK YOU

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Appendix

Leadership Team

Carole Ben-Maimon, MD
Chief Executive Officer

Impax teva

Michael Celano
Chief Financial Officer

OraSure Technologies Kensey Nash

Gopi Shankar, PhD, MBA, FAAPS
Chief Development Officer

janssen

Nancy Ruiz, MD, FACP, FIDSA
Chief Medical Officer

Schering-Plough MERCK

Jennifer Johansson, JD
VP, Regulatory Affairs & Counsel

Andrx SQUIRE PATTON BOGGS

Mohamed Hamdani
VP, Biometrics

Apellis Shire

Keith E. Lynch, Jr.
VP, Technical Operations

MERCK Oncobiologics

John Berman, CPA
VP, Finance & Operations

teva Cell Pathways, Inc.

Noreen Scherer
VP, Clinical Operations

Shire Wyeth Pharmaceuticals

Francis Michael Conway
VP, Controller

TELA BIO stryker

Scientific Advisory Board

Russell Clayton, DO (Chairman)

Former Chief Medical Officer at Alcresta Therapeutics, a medical device company

Former Senior Vice President of Research and Development at Discovery Labs, a pharmaceutical and medical device company

Giovanni Manfredi, MD, PhD

Finbar and Marianne Kenny Professor in Clinical and Research Neurology at Weill Cornell Medicine.

Professor of Neuroscience at Weill Cornell Medicine.

Mark Payne, MD

Co-founder of Chondrial Therapeutics, which became Larimar Therapeutics, Inc.

Professor of Pediatrics at Indiana University School of Medicine

Marni J. Falk, MD

Executive Director of the Mitochondrial Medicine Frontier Program at The Children's Hospital of Philadelphia (CHOP)

Professor in the Division of Human Genetics, Department of Pediatrics at University of Pennsylvania Perelman School of Medicine

Jill Ostrem, MD

Medical Director and Division Chief of the University of California San Francisco (UCSF) Movement Disorders and Neuromodulation Center.

Carlin and Ellen Wiegner Endowed Professor of Neurology

Strong Relationship with FARA

Company has strong relationship with Friedreich's Ataxia Research Alliance (FARA)

- National, non-profit organization dedicated to the pursuit of scientific research leading to treatments and a cure for FA

FARA provides industry with several key items

- Assistance with patient recruitment and education
- Access to Global Patient Registry with demographic and clinical information on more than 1,000 FA patients
- Sponsored a Patient-Focused Drug Development Meeting in 2017 resulting in a publication titled "The Voice of the Patient"

FARA Friedreich's Ataxia Research Alliance

MAD Trial Patient Demographics

Parameter	Statistic	All placebo (n=7)	25 mg CTI-1601 (n=6)	50 mg CTI-1601 (n=7)	100 mg CTI-1601 (n=7)	All CTI-1601 (n=20)	Overall (n=27)
Sex							
Male	n (%)	5 (71.4)	3 (50.0)	4 (57.1)	3 (42.9)	10 (50.0)	15 (55.6)
Female	n (%)	2 (28.6)	3 (50.0)	3 (42.9)	4 (57.1)	10 (50.0)	12 (44.4)
Age (years)							
	Mean	25.7	39.7	34.7	28.0	33.9	31.7
	SD	6.37	16.59	9.03	8.96	12.13	11.40
	Median	23	37	36	24	34	28
	Min, Max	20,36	21,65	19,47	20,44	19,65	19,65
Race							
White	n (%)	6 (85.7)	6 (100.0)	6 (85.7)	6 (85.7)	18 (90.0)	24 (88.9)
Asian	n (%)	0	0	1 (14.3)	1 (14.3)	2 (10.0)	2 (7.4)
American Indian	n (%)	1 (14.3)	0	0	0	0	1 (3.7)
Ethnicity							
Hispanic/Latino	n (%)	2 (28.6)	0	0	0	0	2 (7.4)
Not Hispanic/Latino	n (%)	5 (71.4)	6 (100.0)	7 (100.0)	7 (100.0)	20 (100.0)	25 (92.6)

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SD: Standard deviation

MAD Trial Patient Disease Characteristics

Parameter	Statistic	All placebo (n=7)	25 mg CTI-1601 (n=6)	50 mg CTI-1601 (n=7)	100 mg CTI-1601 (n=7)	All CTI-1601 (n=20)	Overall (n=27)
Age at Symptom Onset							
	Mean	14.1	24.0	19.3	11.9	18.1	17.1
	SD	5.34	14.48	6.21	6.72	10.37	9.39
	Median	15.0	18.0	19.0	10.0	18.0	16.0
	Min, Max	8,23	12,44	8,28	5,22	5,44	5,44
Age at Diagnosis							
	Mean	18.3	31.5	26.4	15.9	24.3	22.7
	SD	7.87	19.88	4.28	8.21	13.24	12.23
	Median	20.0	25.5	28.0	13.0	27.0	21.0
	Min, Max	9,32	14,64	17,30	5,27	5,64	5,64
Assistive Device							
Walker	n (%)	0	2 (33.3)	3 (42.9)	0	5 (25.0)	5 (18.5)
Wheelchair	n (%)	4 (57.1)	3 (50.0)	1 (14.3)	6 (85.7)	10 (50.0)	14 (51.9)
Other	n (%)	1 (14.3)	0	1(14.3)	0	1 (5.0)	2 (7.4)
None	n (%)	2 (28.6)	1 (16.7)	2 (28.6)	1 (14.3)	4 (20.0)	6 (22.2)

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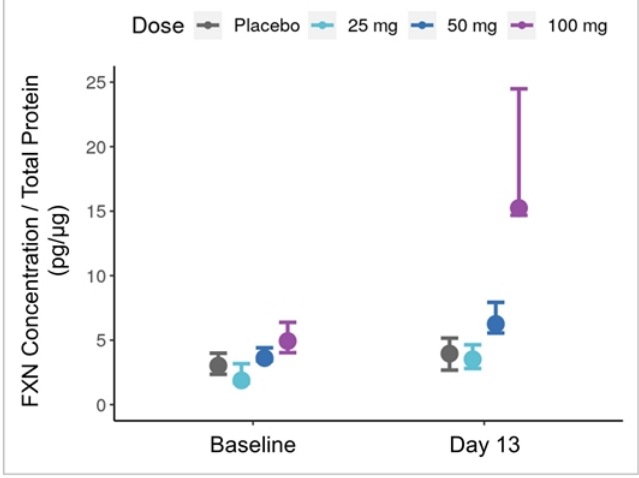
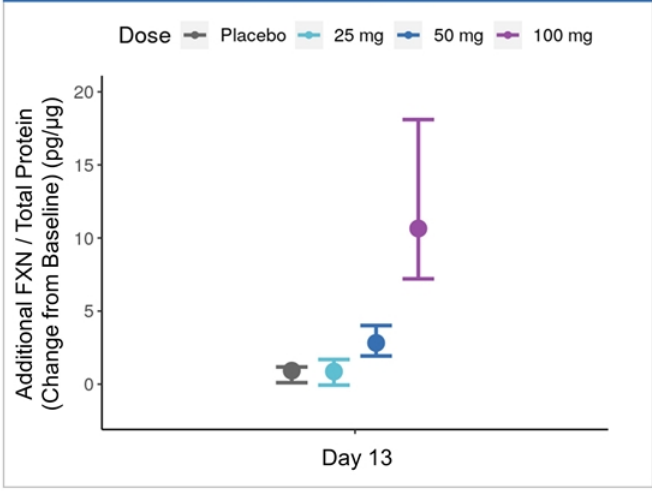
SD: Standard deviation

Dose Dependent Increases in FXN Levels Observed in Skin

FXN* Levels By Dose Group (Skin Biopsies)



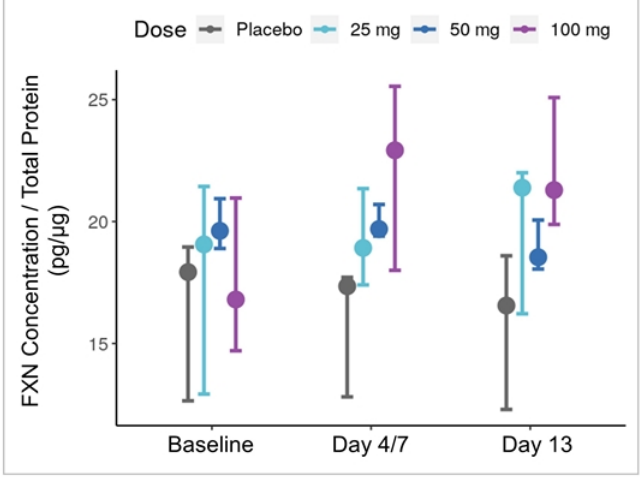
FXN* Change from Baseline By Dose Group (Skin Biopsies)



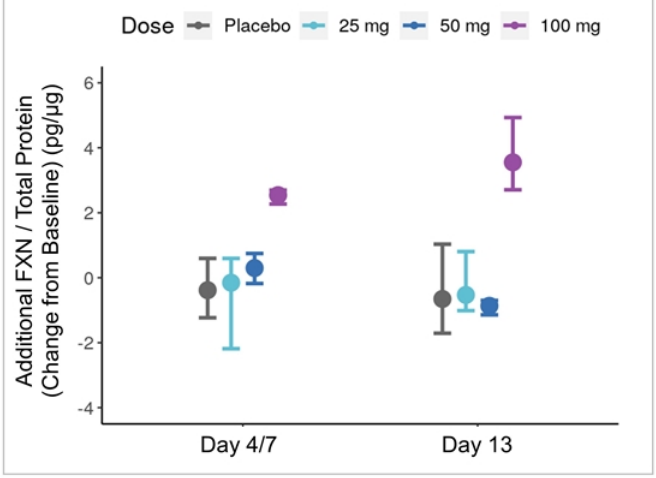
*FXN levels measured via detection of peptide derived from mature FXN; Data represent median and 25th and 75th percentiles

Dose Dependent Increases in FXN Levels Observed in Platelets with Daily Dosing

FXN* Levels By Dose Group (Platelets)



FXN* Change from Baseline By Dose Group (Platelets)



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PK analyses support evaluating once-daily and every-other-day dosing regimens for CTI-1601

Summary of PK Analyses

- CTI-1601 was quickly absorbed after subcutaneous administration
- Dose-proportional increases in exposure observed with increasing doses of CTI-1601
- Mean half life of CTI-1601 in plasma was approximately 11 hours
- CTI-1601 appears to be at or close to steady state exposure after 13 days of dosing 100 mg once daily

Clinical & Non-clinical Safety Data Supported Initiation of 4-Week, Phase 2 Dose Exploration Study at 25 mg

FDA cleared Phase 2 study's initiation following review of clinical and non-clinical data

SUMMARY OF MULTIPLE-ASCENDING DOSE (MAD) TRIAL SAFETY DATA

Repeated SC injections of CTI-1601 appear to be generally well tolerated at doses up to 100 mg administered daily for 13 days.

- No serious adverse events (SAEs), important medical events, or treatment-related severe adverse events were observed.
- Most common AEs were mild and moderate injection site reactions (ISR). At least one ISR was seen in 43% of patients receiving placebo, and all patients receiving CTI-1601 experienced ISRs. Most ISRs resolved within an hour after injection, and all ISRs resolved without intervention. There were no study discontinuations due to ISRs.
- Except for ISRs, the number and severity of AEs did not increase with increasing exposure to CTI-1601.

SUMMARY OF NON-HUMAN PRIMATE (NHP) DATA

- The clinical hold was put in place following deaths that occurred during the 26-week toxicology study in 3 out of a total of 34 NHPs. All 3 of these NHPs were in the two highest dose groups. All NHPs in the two lower dose groups survived to the end of the 26-week toxicology study.
- Based on AUC, C_{max}, and C_{trough} from the Phase 1 studies at the 25 mg and 50 mg levels, and the no observed adverse effect levels from the 4-, 13-, and 26-week toxicology studies, the safety margins calculated for CTI-1601 are generally greater than 10.
- Though the precise mechanism of toxicity in NHPs was not determined, we believe the toxicity was associated with accumulation and high levels of exposure as demonstrated by the safety margins. We believe the presence of persistent edema at the injection sites in some NHPs may explain the accumulation associated with adverse events, as well as higher plasma levels of CTI-1601. In the clinic, injection sites will be closely monitored and we intend to avoid the use of injection sites where persistent edema is present.

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SC: Subcutaneous

CTI-1601: Positive Mouse Model Data Support Development

Proof-of-Concept Demonstrated In Mouse Models of FA

Cardiac Knock Out Mouse Model Studies
(MCK-Cre FXN KO Mouse)

- Extended survival
- Demonstrated ability to deliver hFXN to mitochondria
- Increased in a dose dependent manner, succinate dehydrogenase (SDH) activity. SDH is an FXN dependent enzyme, whose activity is indicative of mitochondrial function
- Prevented left ventricle dilation and maintained function

Neurologic Knock Out Mouse Model Study
(Pvalb-CRE FXN KO Mouse)

- Prevented development of ataxic gait
- Showed that treated mice survive longer than untreated mice
- Demonstrated CNS penetration, as hFXN was present in brain, dorsal root ganglia & spinal cord

CTI-1601 Extends Survival in FXN-deficient KO Mice

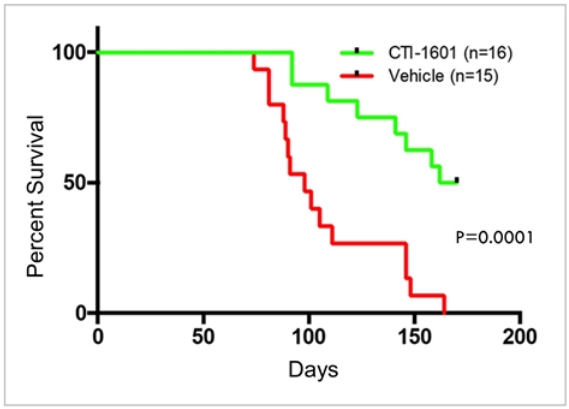
Initial Proof-of-Concept for FXN Replacement Therapy in Cardiac Mouse Model of FA

Median Survival of MCK-Cre FXN-KO Mice

- 166 days (CTI-1601) vs. 98 days (Vehicle)
- CTI-1601 was administered 10 mg/kg SC every other day

Survival beyond vehicle mean (107.5 days)

- 87.5% (CTI-1601) vs. 33% (Vehicle)
- Demonstrates that CTI-1601 is capable of delivering sufficient amounts of FXN to mitochondria



CTI-1601 rescues a severe disease phenotype in a well-characterized cardiac mouse model of FA

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CTI-1601 Prevents The Development of Ataxic Gait in KO mice

In-Vivo Efficacy Data in Neurologic KO Mouse Model

Pvalb-Cre FXN-KO mouse

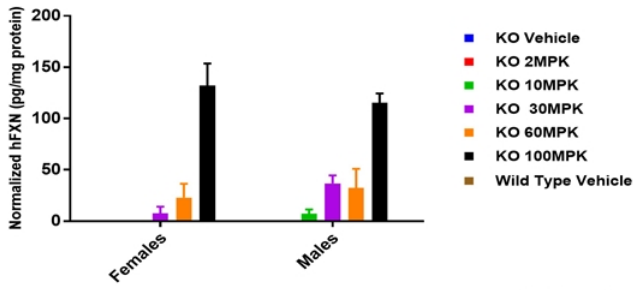
Single dose level: 10 mg/kg CTI-1601 or vehicle given intraperitoneally three times per week

- hFXN replacement with CTI-1601 **prevents the development of ataxic gait**
- CTI-1601-treated mice **survive longer** than untreated mice
- Human frataxin **present in brain, dorsal root ganglia and spinal cord** demonstrating central nervous system penetration

CTI-1601 Delivers hFXN to Mitochondria in KO Mice

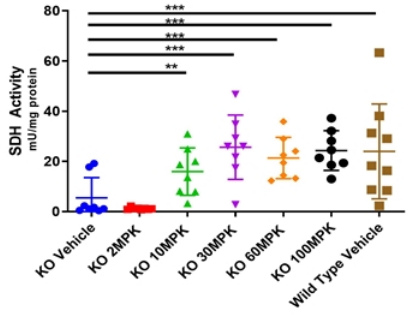
- hFXN concentration within mitochondria increases in a dose-dependent manner
- Given subcutaneously, CTI-1601 functionally replaces hFXN in mitochondria of KO mice
- Succinate dehydrogenase (SDH) activity, which is indicative of mitochondrial function, increases in a dose-dependent manner after administration of CTI-1601; activity plateaus at 30 mg/kg and is equivalent to activity in wild type animals
- Demonstrated normalization of gene expression in cardiac tissue

Normalized Mitochondrial FXN (Heart)



MPK = mg/kg

Normalized SDH Activity (Muscle)



MPK = mg/kg

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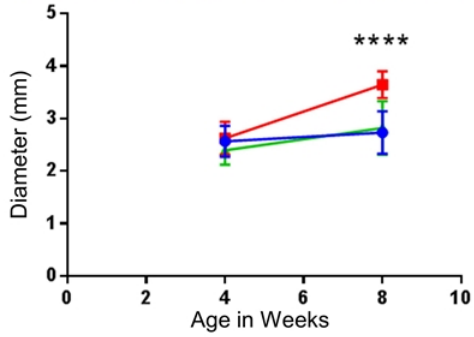
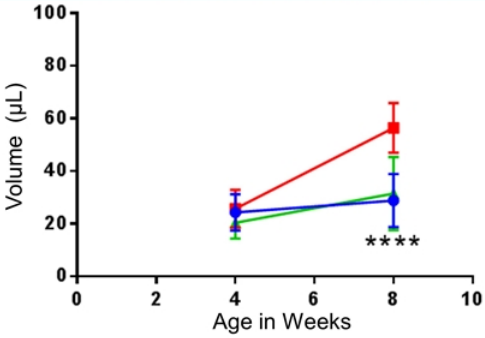
CTI-1601 Prevents Left Ventricle Dilation in KO Mice

- Left ventricular (LV) volume increases in systole in untreated mice by 8 weeks (after 4 weeks of dosing with vehicle), but remains similar to wildtype when treated with CTI-1601 (10 mg/kg every other day)
- CTI-1601-treated mice have similar LV volume as healthy controls; echocardiogram shows significant differences between vehicle and CTI-1601 treated (10 mg/kg every other day) KO mice

Left Ventricle Internal Diameter (Systole)



Left Ventricle Volume (Systole)

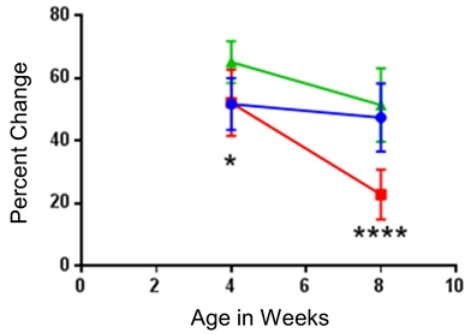


KO: CTI-1601 KO: Vehicle Wild-type: Vehicle

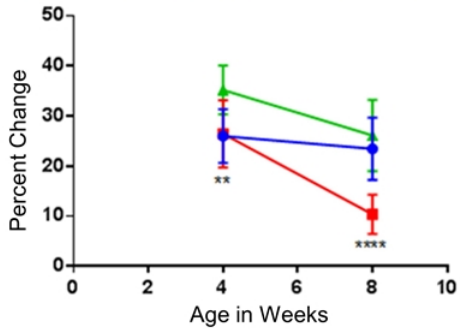
CTI-1601 Preserves Left Ventricle Function in KO Mice

- Left ventricular (LV) function drops significantly in vehicle treated mice by week 8
- CTI-1601-treated (10 mg/kg every other day) mice have similar LV as healthy controls; echocardiogram shows significant differences between vehicle and CTI-1601 treated KO mice

Left Ventricle Ejection Function



Left Ventricle Fractional Shortening



KO: CTI-1601 KO: Vehicle Wild-type: Vehicle

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