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): December 16, 2024

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

(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 8.01 Other Events.

Press Release

On December 16, 2024, Larimar Therapeutics, Inc. (the "***Company***") issued a press release announcing positive initial data from its ongoing long-term open label extension study evaluating daily subcutaneous injections of 25 mg of nomlabofusp self-administered or administered by a caregiver in participants with Friedreich's ataxia. A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Investor Presentation

On December 16, 2024, 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 December 16, 2024*
99.2	Larimar Therapeutics, Inc. Corporate Presentation, dated December 16, 2024*
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed 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: December 16, 2024

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

Exhibit 99.1

Larimar Therapeutics Announces Positive Initial Data from Ongoing Long-term Open Label Extension Study & Progress Across Nomlabofusp Program for Friedreich's Ataxia

- *Daily subcutaneous injections of 25 mg nomlabofusp in 14 participants were generally well tolerated for up to 260 days in the ongoing open label extension (OLE) study*
- *Tissue frataxin (FXN) levels showed mean change from baseline of 1.32 pg/µg in buccal cells and 9.28 pg/µg in skin cells at Day 90*
- *Tissue FXN levels increased and were maintained over time, with mean levels increasing from 15% of healthy volunteers (HV) at baseline to 30% in buccal cells and from 16% to 72% in skin cells at Day 90*
- *Early trends towards improvement in clinical outcomes were observed at Day 90, supporting the potential that nomlabofusp administration may result in a clinical benefit across a broad spectrum of patients with Friedreich's ataxia (FA)*
- *Pharmacokinetic (PK) data suggest that nomlabofusp levels in plasma appeared to reach steady state by Day 30 with no further accumulation following long-term daily administration*
- *Dose escalation to 50 mg daily in the OLE has initiated in 6 participants to date*
- *Screening of adolescents with FA is ongoing for the pediatric PK run-in study with dosing expected early 2025; adolescents who complete study participation will transition into OLE study after assessment of safety and PK data*
- *Initiation of global confirmatory/registration study planned mid-2025*
- *Biologics License Application (BLA) submission targeted for 2H 2025 to support potential accelerated approval*
- *Strong balance sheet with $203.7 million of cash and investments as of September 30, 2024, with projected runway into the second quarter of 2026*
- *Company management to host webcast and conference call today at 8:00 a.m. ET*

Bala Cynwyd, PA, December 16, 2024 – Larimar Therapeutics, Inc. (Larimar) (Nasdaq: LRMR), a clinical-stage biotechnology company focused on developing treatments for complex rare diseases, today announced positive initial data from the ongoing long-term OLE study evaluating daily subcutaneous injections of 25 mg of nomlabofusp self-administered or administered by a caregiver in participants with FA. The Company also provided a nomlabofusp development program update.

"We are pleased with the advancement of our OLE study that includes 14 patients dosed for up to 260 days. Importantly, 25 mg of nomlabofusp administered daily increased and maintained tissue FXN levels over time, with mean levels increasing from 15% of healthy volunteers at baseline to 30% in buccal cells and from 16% to 72% in skin cells at Day 90," said Carole Ben-Maimon, MD, President, and Chief Executive Officer of Larimar. "Importantly, we are highly encouraged by the early trends towards improvement observed in clinical outcomes that could support the potential for nomlabofusp administration to result in a clinical benefit across a broad spectrum of patients with FA. To date we have reported data showing increases in FXN in three independent clinical studies, trends towards normalization in gene expression and lipid profiles, and we are now showing early trends in clinical outcomes. Thus, the totality of data continues to support the therapeutic potential of nomlabofusp. We are excited to be increasing the dose to 50 mg nomlabofusp daily for currently enrolled study participants as well as starting newly enrolled participants on 50 mg daily with data for the 50 mg dose expected mid-2025."

Dr. Ben-Maimon continued, "The long-term safety, PK, and FXN data we are collecting in the OLE will be used to support a potential accelerated approval using FXN as a novel surrogate endpoint. Additionally, we are expanding clinical evaluation into adolescents with our recent initiation of our pediatric PK run-in study and expect initial data with the next update in mid-2025. Our global confirmatory and registrational study remains on track to initiate in mid-2025. Our interactions with the FDA continue to be productive and we are focused on our goal of submitting a BLA in the second half of 2025."

Dr. Rusty Clayton, Chief Medical Officer of Larimar added, “In the OLE study, long-term dosing of nomlabofusp was generally well tolerated. While serious adverse events occurred in two study participants during the OLE study, these events resolved and both participants returned to their usual state of health within 24 hours. The information regarding these events was reviewed by our Data Monitoring Committee and submitted to FDA and the study is continuing as planned. We have initiated dosing with the 50 mg dose in six study participants and will be increasing the dose to 50 mg in all current OLE study participants and will initiate all newly enrolling participants at the 50 mg dose. We expect long-term 50 mg data, as well as initial data from adolescents completing our recently initiated pediatric PK run-in study in mid- 2025.”

“Friedreich’s ataxia is caused by frataxin deficiency, and disease progression is more rapid in patients with lower frataxin levels,” said Dr. Susan Perlman, Professor of Neurology and Director of the Ataxia Center, David Geffen School of Medicine at UCLA, who is one of the principal investigators in the OLE study. “Increases in frataxin levels in patients with FA may lead to the slowing of progression.”

The OLE study is evaluating the safety and tolerability, PK, and FXN levels in buccal and skin cells, along with exploratory pharmacodynamic (PD) markers (lipid profiles and gene expression data) and clinical outcomes following long-term subcutaneous administration of nomlabofusp. The participants who completed treatment in Phase 1 studies and the Phase 2 dose exploration study evaluating nomlabofusp are potentially eligible to screen for the OLE study.

At the time of data cut off for the OLE study, 14 adults with FA were included with up to 260 days (mean
99 days) of long-term daily treatment of 25 mg of nomlabofusp. Among these patients, more than 50% were non-ambulatory.

Key Safety Findings for Long-term 25 mg Daily Nomlabofusp

- Generally well tolerated with two participants that had serious adverse events that resolved within 24 hours and withdrew from the study
- Most common adverse events were injection site reactions, with most being mild, brief in duration, and self-limited

Key FXN Data for Long-term 25 mg Daily Nomlabofusp

- Tissue FXN levels showed mean change from baseline of 1.32 pg/µg in buccal cells and 9.28 pg/µg in skin cells at Day 90
- 25 mg of nomlabofusp increased and maintained tissue FXN levels over time, increasing from a mean level of 15% of HV at baseline to 30% in buccal cells and from 16% to 72% in skin cells at Day 90
- Tissue FXN levels appear to reach steady-state levels by Day 30 in buccal cells

	Buccal FXN Levels (pg/µg)			Skin FXN Levels (pg/µg)		
	N	Median	Mean	N	Median	Mean
Baseline	11	1.13	1.19	8	2.41	2.60
Day 30	11	2.08	3.62	8	5.34	7.45
Change from Baseline	**11**	**0.58**	**2.43**	**8**	**2.42**	**4.85**
Day 60	9	2.46	2.41			
Change from Baseline	**9**	**0.53**	**1.13**			
Day 90	6	1.89	2.48	5	7.65	11.73
Change from Baseline	**6**	**1.01**	**1.32**	**5**	**4.89**	**9.28**

Skin samples not collected at Day 60 per study protocol
Only participants with quantifiable levels at each measurement point are included in the tables

Early Trends Towards Improvement Observed Across a Number of Clinical Outcomes for Long-term 25 mg Daily Nomlabofusp

- Decreased values indicating early trends towards improvement were observed in modified Friedreich Ataxia Rating Scale (mFARS), FARS-Activities of Daily Living (ADL), Modified Fatigue Impact Scale, and 9 Hole Peg Test at Day 90 relative to baseline
- Supports potential that nomlabofusp administration may result in a clinical benefit across a broad spectrum of patients with FA

Key Pharmacokinetic Data for Long-term 25 mg Daily Nomlabofusp

- Rapid absorption after subcutaneous administration
- Exposure appeared to reach steady state in plasma by Day 30 with no further accumulation
- Pharmacokinetic profile consistent with Phase 1 and Phase 2 studies

Additional Updates on Nomlabofusp Development Program

- Dose increased to 50 mg in OLE study in 6 study participants with plan to increase dose in all other study participants
- Screening adolescents for pediatric PK run-in study with dosing to initiate early next year at weight-based dose equivalent of 50 mg adult dose; plan to transition adolescents who complete study participation into OLE after analysis of PK and safety data
- Evaluating global clinical sites for planned registration/confirmatory study
- Advancing discussions with FDA on data package required to support accelerated approval, including supplementary nonclinical pharmacology investigations, and FXN, supportive PD, and safety and clinical outcomes data from the OLE study

Key Upcoming Catalysts

- **Q1 2025:** Dose adolescents in pediatric PK run-in study (ages 12-17 years old)
- **1H 2025:** Enroll children (ages 2-11 years old) in pediatric PK run-in study
- **Mid 2025:** Initiate global confirmatory/registration study
- **Mid 2025:** Initial data from 50 mg dose in long-term OLE study
- **2H 2025:** BLA submission; intend to pursue accelerated approval

Conference Call and Webcast
Larimar will host a conference call and webcast today, December 16, 2024, at 8:00 a.m. ET. To access the webcast, please visit this link to the event. To participate by phone, please dial 1-877-407-9716 (domestic) or 1-201-493-6779 (international) and refer to conference ID 13750507 or click on this link and request a return call. Following the live event, an archived webcast will be available on the “Events & Presentations” page of the Larimar website.

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, nomlabofusp, 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 statements regarding Larimar’s ability to develop and commercialize nomlabofusp and other planned product candidates, Larimar’s planned research and development efforts, including the timing of its nomlabofusp clinical trials and nonclinical investigations, interactions and filings with the FDA, expectations regarding potential for accelerated approval or accelerated access and time to market and overall 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, the success, cost and timing of Larimar’s product development activities, nonclinical studies and clinical trials, including nomlabofusp clinical milestones and continued interactions with the FDA; that preliminary clinical trial results may differ from final clinical trial results, that earlier non-clinical and clinical data and testing of nomlabofusp may not be predictive of the results or success of later nonclinical or clinical trials, and assessments; that the FDA may not ultimately agree with Larimar’s nomlabofusp development strategy; the potential impact of public health crises 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 nomlabofusp’s manufacturing process; Larimar’s ability to obtain regulatory approvals for nomlabofusp 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.

Investor Contact:
Joyce Allaire

LifeSci Advisors
jallaire@lifesciadvisors.com
(212) 915-2569

Company Contact:
Michael Celano
Chief Financial Officer
mcelano@larimartx.com
(484) 414-2715

Exhibit 99.2

Larimar Therapeutics

Nomlabofusp Program Update

December 2024

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 Larimar’s ability to develop and commercialize nomlabofusp (CTI-1601) and other planned product candidates, Larimar’s planned research and development efforts, including the timing of its nomlabofusp clinical trials and non-clinical investigations and overall development plan expectations with respect to the FDA START pilot program, interactions with FDA, expectations regarding potential for accelerated approval or accelerated access and time to market 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, the success, cost and timing of Larimar’s product development activities, nonclinical studies and clinical trials, including nomlabofusp clinical milestones and continued interactions with the FDA; that preliminary clinical trial results may differ from final clinical trial results, that earlier non-clinical and clinical data and testing of nomlabofusp may not be predictive of the results or success of later non-clinical or clinical trials, and assessments; that the FDA may not ultimately agree with Larimar’s nomlabofusp development strategy; the potential impact of public health crises 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 nomlabofusp’s manufacturing process; Larimar’s ability to obtain regulatory approvals for nomlabofusp 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 presentation 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.

Positive Initial Data from Long-Term OLE Study in FA

Daily 25 mg nomlabofusp administered in 14 participants for up to 260 days

Generally well-tolerated with long-term daily administration	• Generally well tolerated for over 8 months • SAEs occurred in two study participants that resolved in 24 hours • Most common AEs were mild injection site reactions
25 mg daily increased and maintained tissue FXN levels over time	• Tissue FXN levels showed mean change from baseline of 1.32 pg/µg in buccal cells and 9.28 pg/µg in skin cells at Day 90 • Increased from a mean of 15% of HV at baseline to 30% of HV in buccal cells and from 16% of HV to 72% of HV in skin cells at Day 90 • Tissue FXN levels appear to reach steady state levels by Day 30 in buccal cells
Predictable long-term pharmacokinetics	• Rapidly absorbed after subcutaneous administration • Reached steady state levels in plasma by Day 30 with no further accumulation • Pharmacokinetic profile consistent with Phase 1 and Phase 2 studies
Early trends of improvement observed in clinical outcomes at Day 90	• Early trends in mFARS, FARS-ADL, Modified Fatigue Impact Scale and 9 Hole Peg Test support the potential that daily nomlabofusp may lead to clinical benefit in patients with FA

Larimar Therapeutics

FA: Friedreich's ataxia; OLE: Open-label extension; HV: Healthy volunteers; FXN: Frataxin

Updates for Nomlabofusp Development Program

OLE Study	Pediatric PK Run-In Study	Global Confirmatory/ Registration Study	BLA Submission/ Accelerated Approval
Six participants currently receiving 50 mg daily Other enrolled participants will increase dose All newly enrolled participants starting at 50 mg daily Long-term 50 mg data expected mid-2025	Screening ongoing in adolescents (12-17 yrs) Dosing expected to initiate in early 2025 at weight-based dose equivalent dose of adult 50 mg dose Children (2-11 yrs) to begin enrollment in 1H 2025	Identifying global sites in US, EU, UK, Australia and Canada Finalizing protocol based on advice from global regulatory agencies Initiation on track for mid-2025	Advancing discussions with FDA on data package required for FXN as a surrogate endpoint Advancing discussions with FDA on the amount of the required safety data BLA submission targeted for 2H 2025

Larimar Therapeutics

FA: Friedreich's ataxia; OLE: Open-label extension; BLA: Biologics License Application

Clinical-Stage Novel Protein Replacement Therapy Platform

Potential first therapy to systemically address route cause of FA	Lead candidate nomlabofusp is a recombinant fusion protein designed to directly address frataxin deficiency in patients with FA by delivering the protein to mitochondria. Granted Orphan Drug (US & EU), Rare Pediatric Disease (US), Fast Track (US), PRIME (EU) and ILAP (UK-MHRA) designations. Selected by FDA to participate in its START pilot program
Consistent Phase 1 and Phase 2 findings	Nomlabofusp was generally well tolerated and demonstrated dose-dependent increases in frataxin (FXN) levels from baseline in skin and buccal cells in completed studies
Advancing clinical program	Increased dose to 50 mg on current participants and starting newly enrolled participants on 50 mg in long-term OLE study with 50 mg data expected mid-2025 Screening of adolescents with FA ongoing in pediatric PK run-in study with dosing expected to begin in early 2025; adolescents completing study will transition into OLE after assessment of safety and PK data Initiation of global confirmatory/registration study on track for mid-2025
Pursuing accelerated approval path with FDA	FDA acknowledgement that FXN deficiency appears to be critical to the pathogenic mechanism of FA, and that there continues to be an unmet need for treatments that address the underlying disease pathophysiology. Discussions to support an accelerated approval pathway are ongoing. BLA submission targeted for 2H 2025
Strong financial foundation	Approximately $204 million in cash and investments as of 9/30/24, providing projected cash runway into Q2 2026

Friedreich's Ataxia (FA): A rare and progressive disease

Genetic defect on both alleles lowers frataxin levels

Most patients with FA only produce ~20-40% of normal frataxin levels depending on the tissue, sampling technique, and assay considered*

Affects ~20,000 patients globally

~5,000 patients in the U.S., with most remaining patients in the Europe
~70% of patients present before age 14

Progressive disease

Initial symptoms include unsteady posture and frequent falling, and patients are eventually confined to a wheelchair
Life expectancy of 30-50 years with an early death usually caused by heart disease

No approved therapies increase frataxin levels

Only treatment approved for FA does not address frataxin deficiency

Larimar Therapeutics

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

FXN Levels Predict Disease Progression in FA

Lower FXN levels are associated with earlier onset of disease, faster rate of disease progression, and shorter time to loss of ambulation

Median Age of Onset and Rate of Disease Progression in Relation to FXN Levels

FXN Level* (% of Normal Level)	**Age of Onset** (Years)	**FARS**** (Change/Year)
11.2	7	2.9
22.0	11	2.1
31.0	16	2.0
48.7	19	1.6

Adapted from H.L.Plasterer et al. PLoS ONE 2013 8(5):e63958

Median Age of Onset Predicts Time to Loss of Ambulation

Age of Onset (Years)	**Median Time to Loss of Ambulation** (Years)
< 15	11.5
15 to 24	18.3
> 24	23.5

Adapted from C. Rummey et al. EClinicalMedicine. 2020 18:100213

Larimar Therapeutics

*FXN levels measured in peripheral blood mononuclear cells (PBMCs). FXN levels as measured by % of normal demonstrated to be equivalent in PBMCs, buccal cells, and whole blood.
**FARS: Friedreich's ataxia rating score, measures disease progression with a higher score indicating a greater level of disability.

Open-label Extension: 25 mg Completed, Increasing to 50 mg Daily

Key Eligibility Criteria

Previous participation in Phase 1 or Phase 2 trials

Daily subcutaneous injections self-administered or by a caregiver

25 mg nomlabofusp

50 mg nomlabofusp

- All 7 sites activated and enrolling
- Following assessment of safety and PK data of each cohort in the PK run-in study, adolescents (12-17 yrs) and children (2-11 yrs) will be eligible to screen for the OLE

Key Study Objectives

- Safety and tolerability
- Long-term PK
- Tissue FXN concentrations
- Clinical efficacy measures compared to FACOMS* database once enrollment is complete

Long-term data from 50 mg dose expected mid-2025

Screening Period ≤ 42 days** → Treatment Period Planned for ≥ 1 year → Potential extensions

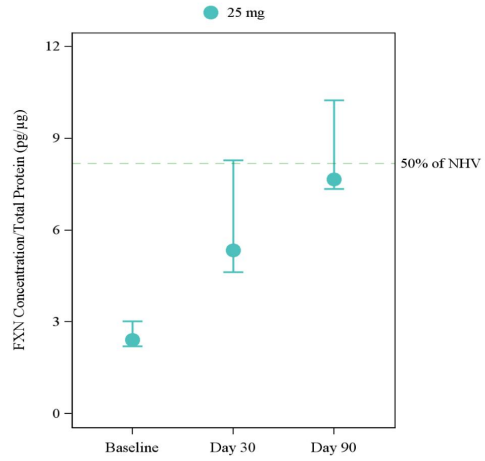
Larimar Therapeutics

*FACOMS: Friedreich's Ataxia Clinical Outcome Measures Study.
**Estimated screening period may be extended for those study participants who have not been on a stable regimen of omaveloxolone for at least six months.

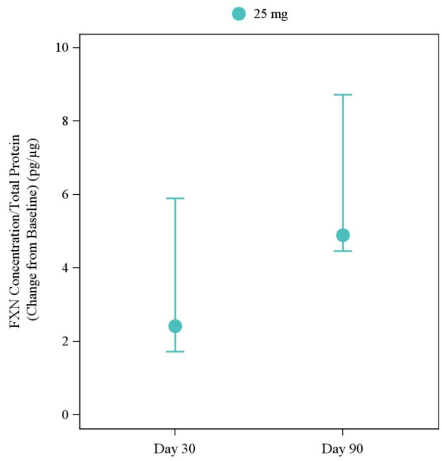
Increased FXN Levels in Skin Cells Sustained Over Time

Participants dosed daily with 25 mg nomlabofusp for up to 90 days

Skin Cells - Absolute FXN Levels



Skin Cells - FXN Levels Change from Baseline

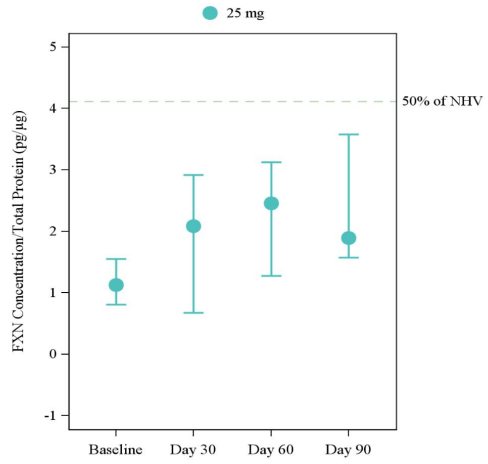


FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample. Data represent median and 25th and 75th percentiles. Only participants with quantifiable levels at all measurement points are included in the figures. 50% of normal healthy volunteer (NHV) FXN level is 8.17pg/µg from the noninterventional healthy volunteer study (N=60).

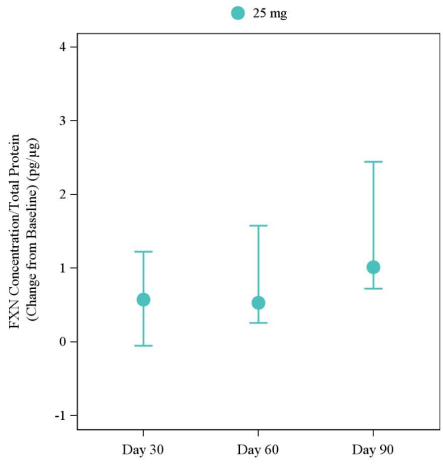
Increased FXN Levels in Buccal Cells Sustained Over Time

Participants dosed daily with 25 mg nomlabofusp for up to 90 days and reached steady state by 30 days

Buccal Cells - Absolute FXN Levels



Buccal Cells - FXN Levels Change from Baseline



FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample. Data represent median and 25th and 75th percentiles. Only participants with quantifiable levels at all measurement points are included in the figures. 50% of normal healthy volunteer (NHV) FXN level is 4.12 pg/µg from the noninterventional healthy volunteer study (N=60).

Tissue FXN Levels are Higher as a % of Healthy Volunteers at Day 90

Buccal FXN Levels	Skin FXN Levels
Mean % of healthy volunteers	**Mean % of healthy volunteers**
15% at baseline (5.30 min, 26.67 max)	**16% at baseline** (9.33 min, 24.48 max)
30% at Day 90 (18.68 min, 53.18 max)	**72% at Day 90** (43.86 min, 160.61 max)

Only participants with quantifiable levels at each measurement point are included in the tables
Mean % of healthy volunteers is the mean of all the participants FXN levels relative to the mean FXN levels in skin cells (16.34 pg/µg) and in buccal cells (8.24 pg/µg) from the noninterventional healthy volunteer study (N=60).

Observed Increases in Tissue FXN Levels in OLE Are Comparable to the Phase 2 Dose Exploration Study

Absolute tissue FXN levels and increases from baseline after 25 mg nomlabofusp daily over time

	Open Label Extension					
	Buccal FXN levels (pg/µg)			Skin FXN levels (pg/µg)		
	n	Median	Mean	n	Median	Mean
Baseline	11	1.13	1.19	8	2.41	2.60
Day 30	11	2.08	3.62	8	5.34	7.45
Change from Baseline	**11**	**0.58**	**2.43**	**8**	**2.42**	**4.85**
Day 60	9	2.46	2.41			
Change from Baseline	**9**	**0.53**	**1.13**			
Day 90	6	1.89	2.48	5	7.65	11.73
Change from Baseline	**6**	**1.01**	**1.32**	**5**	**4.89**	**9.28**

	Phase 2 Dose Exploration					
	Buccal FXN levels (pg/µg)			Skin FXN levels (pg/µg)		
	n	Median	Mean	n	Median	Mean
Baseline	7	1.78	1.80	7	3.70	3.38
Day 14	7	2.24	2.22	7	5.53	6.4
Change from Baseline	**7**	**0.56**	**0.42**	**7**	**2.81**	**3.02**

Larimar Therapeutics

Skin samples not collected at Day 60 per study protocol
Only participants with quantifiable levels at each measurement point are included in the tables

Observed Trends Towards Improvement in Clinical Outcomes at Day 90 After Daily 25 mg Nomlabofusp

Visit	Statistic	**mFARS** 93-Point Scale	**FARS-ADL** 36-Point Scale	**Modified Fatigue Impact Scale** 84-Point Scale	**9 Hole Peg Test Dominant Hand** Time (Seconds)
		N = 8	N = 8	N = 8	N = 8
Baseline	Mean (SD)	55.81 (13.296)	18.13 (6.064)	27.1 (14.23)	130.91 (99.366)
	Median (IQR)	53.5 (47.5, 68.3)	17.0 (12.8, 23.8)	29.5 (18, 38)	89.5 (48.7, 227.8)
	(Min, Max)	(35.0, 73.0)	(11.0, 27.0)	(2, 45)	(38.0, 277.3)
Day 90	Mean (SD)	55.13 (14.829)	15.88 (6.249)	18.5 (15.68)	113.11 (95.586)
	Median (IQR)	53.3 (43.8, 66.0)	14.8 (11.0, 21.3)	17.0 (5, 32)	67.15 (48.4, 176.7)
	(Min, Max)	(35.3, 79.5)	(8.0, 25.0)	(0, 42)	(33.50, 287.00)
Change from Baseline at Day 90	**Mean (SD)**	**-0.69 (3.983)**	**-2.25 (3.082)**	**-8.6 (12.24)**	**-17.79 (27.450)**
	Median (IQR)	**-1.17 (-3.8, 1.2)**	**-2.25 (-3.8, 0.3)**	**-3.5 (-19, -3)**	**-9.00 (-32.0, 1.7)**
	(Min, Max)	**(-5.0, 7.0)**	**(-8.0, 1.5)**	**(-28, 9)**	**(-73.5, 9.8)**

Timed 25-Foot Walk is not presented due to participants' ambulatory status

Nomlabofusp: Predictable Long-Term Pharmacokinetics

1

Rapid absorption after subcutaneous administration

2

Nomlabofusp reached steady state in plasma by Day 30 with no further accumulation

3

Pharmacokinetic profile consistent with Phase 1 and Phase 2 studies

OLE Study: Nomlabofusp 25 mg Daily is Generally Well-Tolerated for Up to 260 Days

14 participants with FA were included in the safety data

One additional participant started dosing after the data cut and one additional participant is scheduled for dosing before year-end 2024

Two participants withdrew for non-treatment related reasons

Two participants had serious adverse events that resolved within 24 hours and withdrew from the study

- Events were reviewed by Data Monitoring Committee and submitted to FDA and study is continuing as planned

Most common adverse events (AEs) were injection site reactions (ISRs) which were mild, brief in duration and self limited

No study discontinuations due to ISRs and all resolved

Increasing nomlabofusp dose to 50 mg in participants already enrolled and starting newly enrolled participants on 50 mg daily

Larimar Therapeutics

Totality of Data to Date Supports that Nomlabofusp has the Potential to Slow Disease Progression

Addresses underlying deficiency	Displays functional activity	Early trend in clinical benefit
FDA alignment that FXN deficiency appears to be the pathogenic mechanism of FA	Trends in modified gene expression and lipid profile changes towards values seen in healthy controls	Trends towards improvement observed in multiple clinical outcome measures
Dose dependent increases in FXN levels that were maintained over time	Data suggest nomlabofusp may positively affect downstream metabolic pathways disrupted in FA	Potential to benefit ambulatory and non-ambulatory patients with FA

Nomlabofusp Clinical Development Program

Intend to pursue accelerated approval pathway with potential BLA submission targeted for 2H 2025
Selected by FDA to participate in its START pilot program

Ongoing open-label extension study with 50 mg daily dosing for eligible patients who participated in Phase 1 and/or dose exploration studies

Long-term data from 50 mg dose expected mid-2025

Pediatric PK run-in study initiated in adolescents (12-17 yrs), followed by children (2-11 yrs) in 1H 2025

Participants completing the PK run-in study eligible to transition into OLE after assessment of safety and PK data from each cohort

Planned global double-blind placebo-controlled confirmatory/registration study on track to initiate mid- 2025*

BLA submission targeted for 2H 2025**

Larimar Therapeutics

*Company is advancing discussions with regulators and investigators outside the U.S. to expand clinical program to international geographies.
**Company advancing discussions with FDA on the potential use of FXN levels to support accelerated approval.

Positive Long-term OLE Data and Advancing Dose to 50 mg

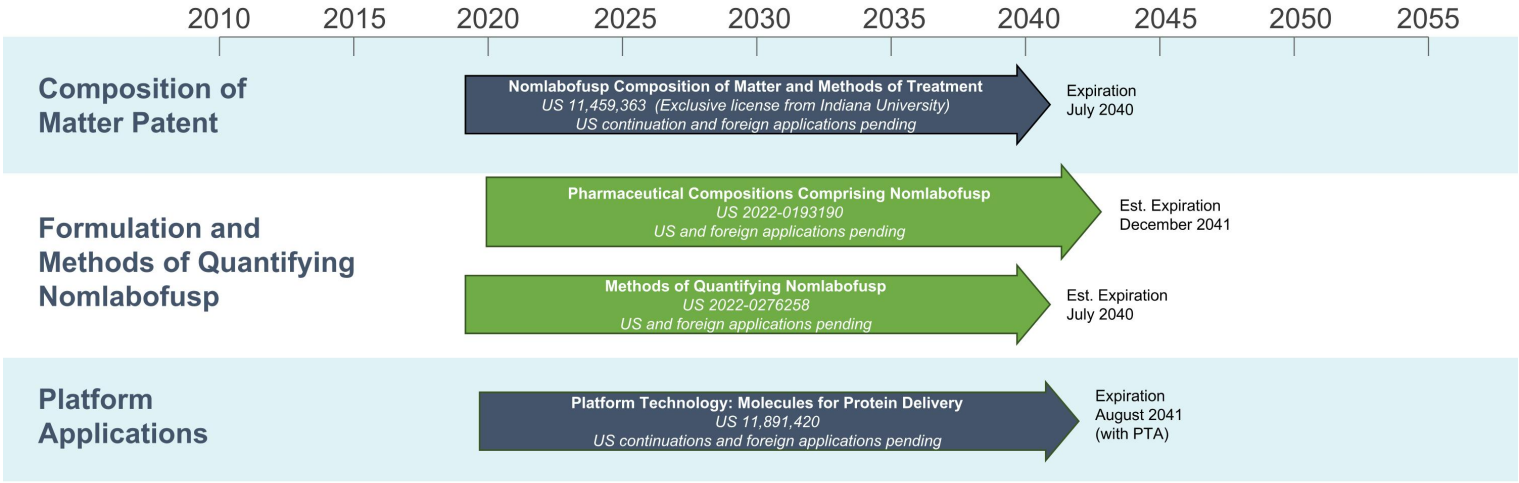
OLE Supports Potential of Nomlabofusp	Nomlabofusp was generally well tolerated at doses administered up to 260 days Tissue FXN levels showed mean change from baseline of 1.32 pg/µg in buccal cells and 9.28 pg/µg in skin cells at Day 90 Daily nomlabofusp 25 mg increased and maintained tissue FXN over time, increasing from a mean of 15% of HV at baseline to 30% of HV at Day 90 in buccal cells and from 16% of HV at baseline to 72% of HV at Day 90 in skin cells Early trends towards improvements across multiple clinical outcomes at Day 90, supporting potential clinical benefit
Clinical & Regulatory Updates	Increasing dose to 50 mg in OLE study with 6 participants administered 50 mg to date Screening adolescents for pediatric PK run-in study Evaluating global clinical sites for planned registration/confirmatory study Selected by FDA to participate in its START pilot program Ongoing discussions with FDA regarding use of FXN as a surrogate endpoint to support accelerated approval pathway
2025 Milestones	**Q1 2025:** Dose adolescents (ages 12-17 years old) in pediatric run-in study **1H 2025:** Initiate PK run-in study in children (ages 2-11 years old) **Mid 2025:** Initiate global confirmatory/registration study **Mid 2025:** Data from 50 mg dose in OLE study **2H 2025:** BLA submission; intend to pursue accelerated approval

Larimar Therapeutics

Appendix

Larimar Technology is Supported by a Strong IP Portfolio

Granted nomlabofusp (CTI-1601) composition of matter patent extends into 2040



Additional nomlabofusp IP protection

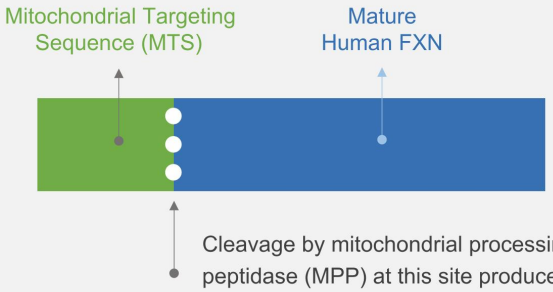
- US and foreign pending applications cover key biomarkers, analytical tools and methods of treatment for additional disease indications for nomlabofusp
- Nomlabofusp should be eligible for **12 years of market exclusivity** upon approval in the US (independent of patents) and at least **10 years of market exclusivity** upon approval in EU (independent of patents)

Granted Pending

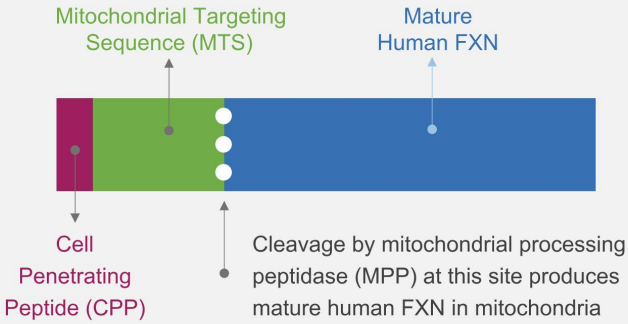
Nomlabofusp is Designed to Deliver Additional Frataxin

Nomlabofusp (CTI-1601) maintains the cleavage site between the MTS and mature human frataxin (FXN)

STRUCTURE OF ENDOGENOUS FXN



STRUCTURE OF NOMLABOFUSP



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

Nomlabofusp is a Competitively Differentiated Treatment Approach*

$7.3B Acquisition supports the **robust market potential** for FA treatments

REATA PHARMACEUTICALS Biogen

Nomlabofusp is a potential **first-and-only protein replacement therapy** designed to address the underlying cause of FA

Approach	Product	Company	Mechanism of Action	Clinical Status
Protein replacement	**Nomlabofusp (CTI-1601)**	**Larimar**	**Frataxin Protein Replacement**	**Phase II**
Mitochondrial Oxidative Stress Modifier	Omaveloxolone (SKYCLARYS™)	Biogen	Nrf2 Activator	Approved (US and EU)
	Vatiquinone	PTC Therapeutics	15-Lipoxygenase Inhibitor	Phase III
Gene Expression Regulator	DT-216P2 (new formulation)	Design Therapeutics	GeneTAC	Pre-clinical
Gene Therapy	LX2006	Lexeo Therapeutics	Frataxin Gene Replacement	Phase I/II

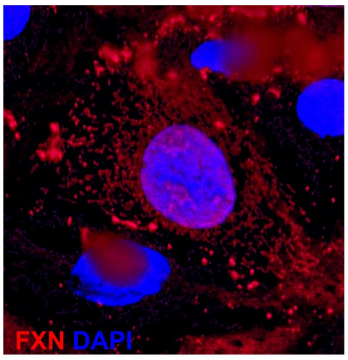
Larimar Therapeutics

*Competitive landscape focuses on clinical-stage, industry-sponsored programs from public companies

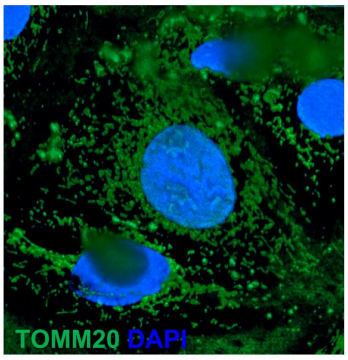
Mitochondrial Localization and Preclinical Data

Nomlabofusp Transduction of Cells In Vitro Leads to hFXN Located in Mitochondria

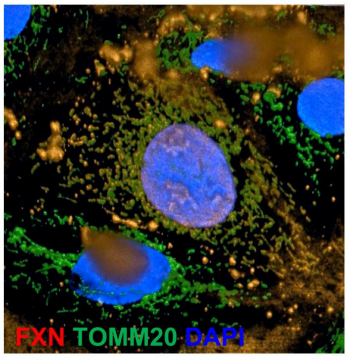
FXN staining



TOMM20 (mitochondria) staining



FXN co-localizes with TOMM20



- Rat cardiomyocytes (H9C2) were transduced with nomlabofusp
- Cells were fixed and analyzed by immunofluorescence microscopy to detect the presence of human frataxin (hFXN) and TOMM20 (a mitochondrial outer membrane protein)
- Nuclei were stained with DAPI

Larimar Therapeutics

Nomlabofusp Extends Survival in FXN-deficient KO Mice

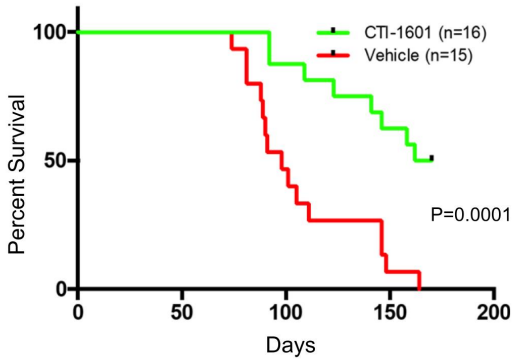
Initial proof-of-concept for FXN replacement therapy in cardiac mouse model of FA

Median survival of MCK-Cre FXN-KO mice

- 166 days (nomlabofusp) vs. 98 days (Vehicle)
- Nomlabofusp administered 10 mg/kg SC every other day

Survival beyond vehicle mean (107.5 days)

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



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

Larimar Therapeutics

Nomlabofusp Prevents Development of Ataxic Gait in Neurologic KO Mouse Model

In-Vivo Efficacy Data in Pvalb-Cre FXN-KO Mouse Model

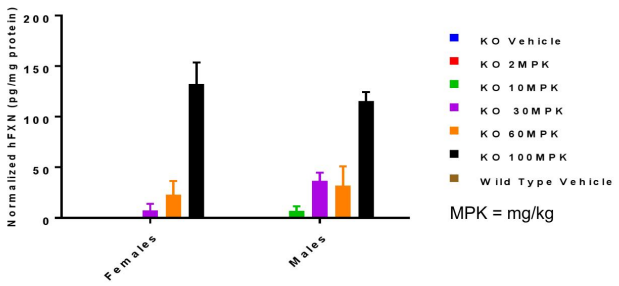
Single dose level: 10 mg/kg nomlabofusp or vehicle given intraperitoneally three times per week

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

Nomlabofusp Delivers hFXN to Mitochondria and Restores SDH Activity in KO Mice

Study Design – Cardiac and skeletal muscle FXN knockout mice (MCK-CRE) were treated at varying SQ doses of nomlabofusp every other day for two weeks at Jackson Laboratories (Bar Harbor, ME). After dosing, animals were sacrificed, and heart and skeletal muscle were evaluated for hFXN concentration in mitochondrial extracts and SDH activity was assessed.

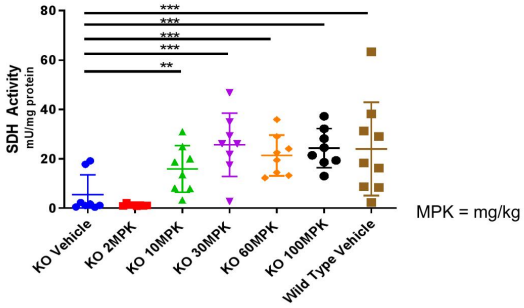
Mitochondrial FXN (Heart)



Mitochondria hFXN concentration increases dose-dependently

Given subcutaneously, nomlabofusp functionally replaces hFXN in mitochondria of KO mice

SDH Activity (Muscle)



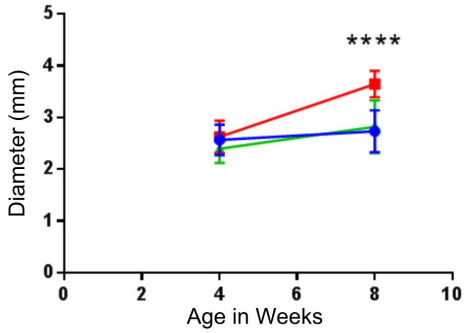
Succinate dehydrogenase (SDH) activity, which is indicative of mitochondrial function, increases in a dose-dependent manner after administration of nomlabofusp; activity plateaus at 30 mg/kg and is equivalent to activity in wild type

Larimar Therapeutics

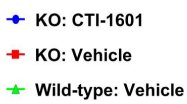
Nomlabofusp Prevents Left Ventricle Dilation in KO Mice

Study Design – Cardiac and skeletal muscle FXN knockout mice (MCK-CRE) were treated at 10 mg/kg every other day at Jackson Laboratories (Bar Harbor, ME). Echocardiograms were performed pre-dose and post dose.

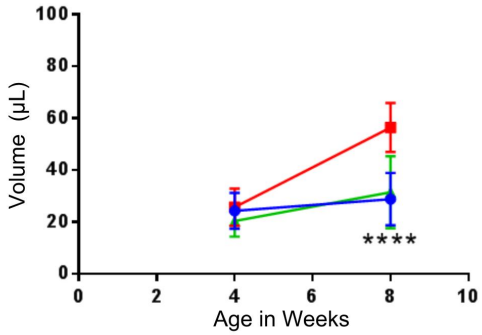
Left Ventricle Internal Diameter (Systole)



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 nomlabofusp (10 mg/kg every other day)



Left Ventricle Volume (Systole)



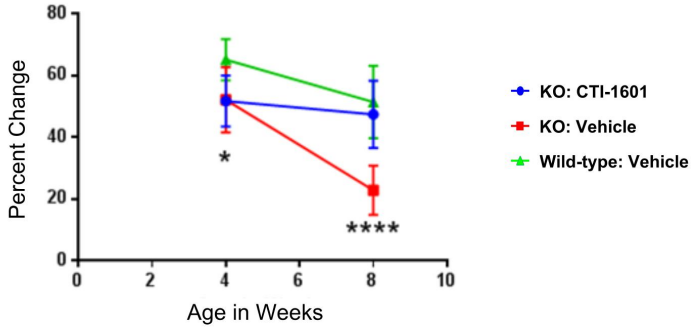
Nomlabofusp-treated mice have similar LV volume as wild type; echocardiogram shows significant differences between vehicle and nomlabofusp treated (10 mg/kg every other day) KO mice

Larimar Therapeutics

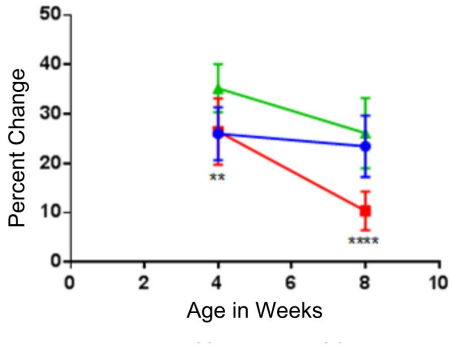
Nomlabofusp Preserves Left Ventricle Function in KO Mice

Study Design – Cardiac and skeletal muscle FXN knockout mice (MCK-CRE) were treated at 10 mg/kg every other day at Jackson Laboratories (Bar Harbor, ME). Echocardiograms were performed pre-dose and post dose.

Left Ventricle Ejection Function



Left Ventricle Fractional Shortening



Left ventricular (LV) function drops significantly in vehicle treated mice by Week 8

Nomlabofusp-treated (10 mg/kg every other day) mice have similar LV function as wildtype; echocardiogram shows significant differences between vehicle and nomlabofusp treated KO mice

Larimar Therapeutics

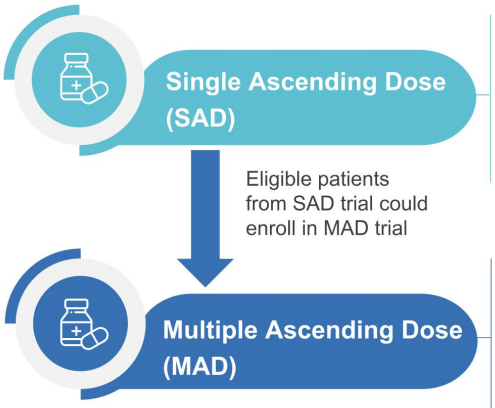
Phase 1 Clinical Data

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

Larimar Therapeutics

Completed Phase 1 Multiple Ascending Dose Study

Treatment Schedules for Each Cohort- nomlabofusp (CTI-1601) or placebo

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 nomlabofusp 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 nomlabofusp 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 nomlabofusp 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

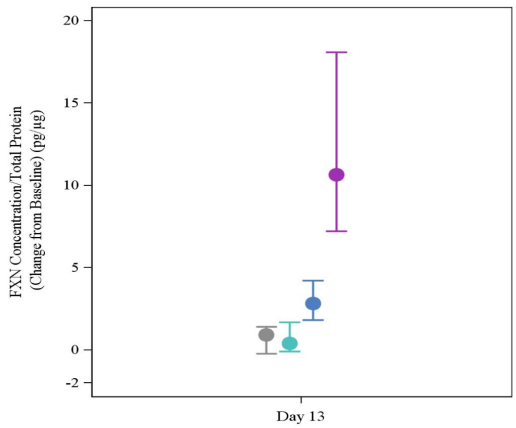
Cohort 2 Sampling Days	
Buccal Cells	Baseline, Day 7, Day 13
Skin	Baseline, Day 13
Platelets	Baseline, Day 7, Day 13

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

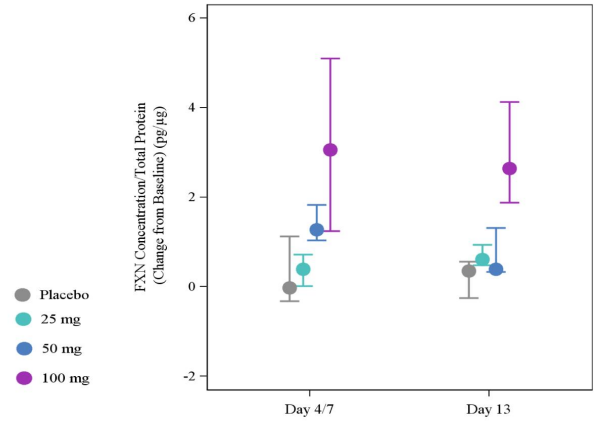
Larimar Therapeutics

Dose Dependent Increases in FXN Levels Observed in Skin and Buccal Cells in Phase 1

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



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



Placebo: Participants randomized to placebo in each cohort
25 mg: Dosed daily for 4 days, every third day thereafter
50 mg: Dosed daily for 7 days, every other day thereafter
100 mg: Dosed daily for 13 days

*FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample; Data represent median and 25th and 75th percentiles; FXN levels from Day 4, & Day 13 measurements are shown for data derived from the 25 mg cohort; FXN levels from Day 7 & Day 13 measurements are shown for data derived from the 50 & 100 mg cohorts;

Larimar Therapeutics

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)

Larimar Therapeutics

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)

SD: Standard deviation

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

Summary of MAD Trial 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 appeared to be at or close to steady state exposure after 13 days of dosing 100 mg once daily

Phase 2 Dose Exploration Data

Completed Ph 2 Dose Exploration Study (25 & 50 mg Cohorts)

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

28-day Treatment Period - nomlabofusp (CTI-1601) or placebo

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

= Subcutaneous administration of nomlabofusp (CTI-1601) or placebo

= No Administration

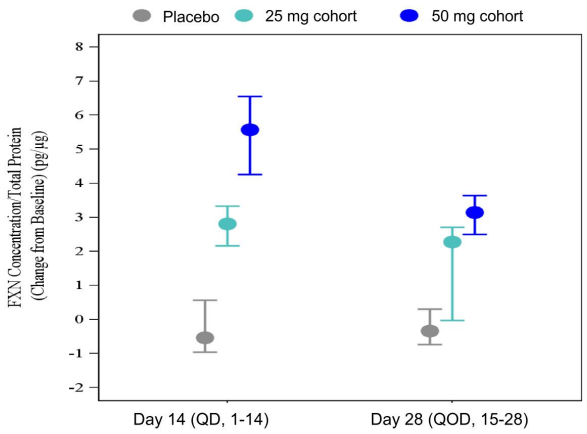
Study Details	
Population	Ambulatory and non-ambulatory Friedreich's ataxia patients ≥18 years of age Nomlabofusp (CTI-1601) treatment naïve or participated (if eligible) in a previous Larimar study
Dose	**Cohort 1:** 25 mg **Cohort 2:** 50 mg
Key Endpoints	Frataxin levels in peripheral tissue, PK, safety and tolerability; other exploratory endpoints include lipids and gene expression levels
Number of Patients	**Cohort 1:** Enrolled 13 participants (9 on nomlabofusp; 4 on placebo) **Cohort 2:** Enrolled 15 participants (10 on nomlabofusp; 5 on placebo)
Key Results	Generally well tolerated; most common adverse events were mild and moderate injection site reactions Dose dependent increases of frataxin levels in tissues tested (skin and buccal cells) Baseline FXN levels in skin cells in the 50 mg cohort were < 17% of the average of healthy volunteers. After daily dosing for 14 days, FXN levels increased to 33% to 59% of the average of the healthy volunteers

Larimar Therapeutics

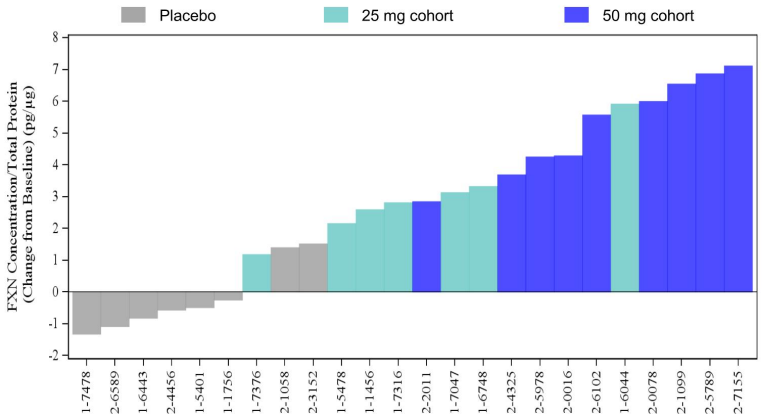
Dose-Dependent Increase in FXN Levels in Skin Cells

Participants dosed daily for 14 days, then every other day until day 28

Skin Cells
FXN Levels* Change from Baseline**



FXN Levels* in Skin Cells
Change from Baseline at Day 14



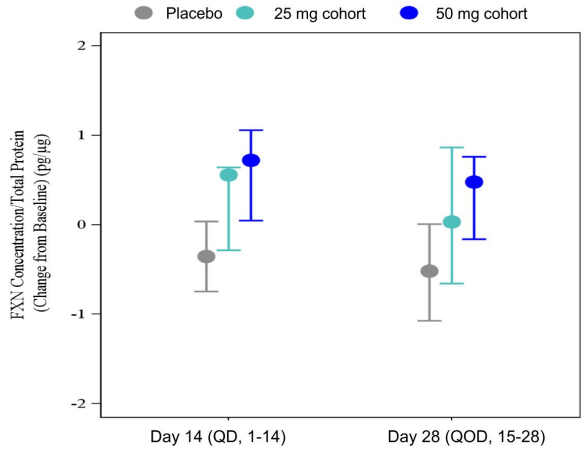
Larimar Therapeutics

*FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample. Data represent median and 25th and 75th percentiles. Only participants with quantifiable levels at both baseline and Day 14 are included in the figures.
**Median baseline FXN levels in patients were 3.5 pg/µg for the placebo, 3.7 pg/µg for the 25 mg cohort and 2.1 pg/µg for the 50 mg cohort.

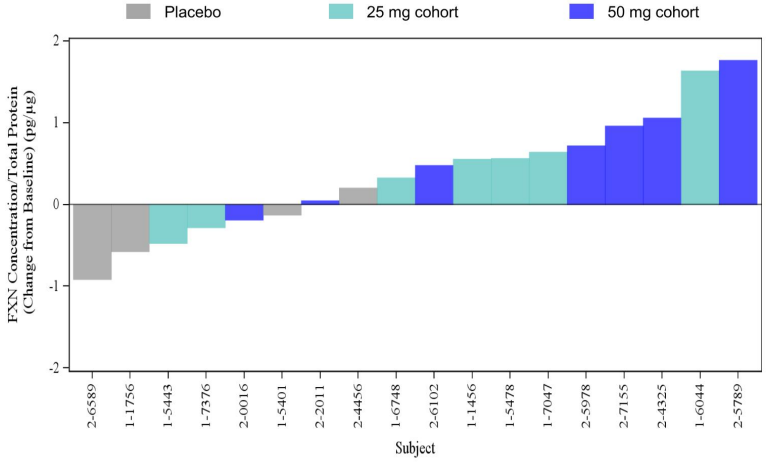
Dose-Dependent Increase in FXN Levels in Buccal Cells

Participants dosed daily for 14 days, then every other day until day 28

Buccal Cells
FXN Levels* Change from Baseline**



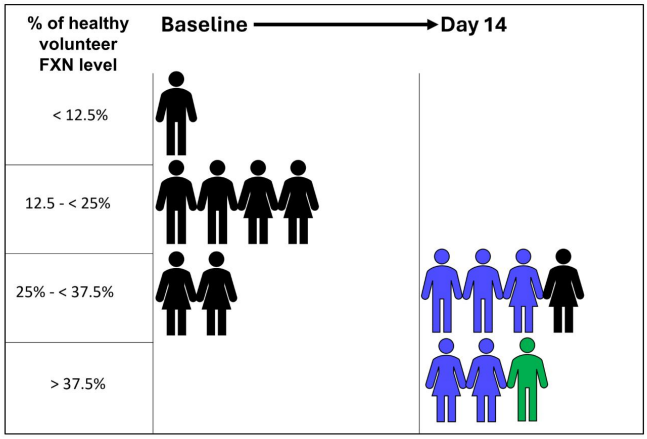
FXN Levels* in Buccal Cells
Change from Baseline at Day 14



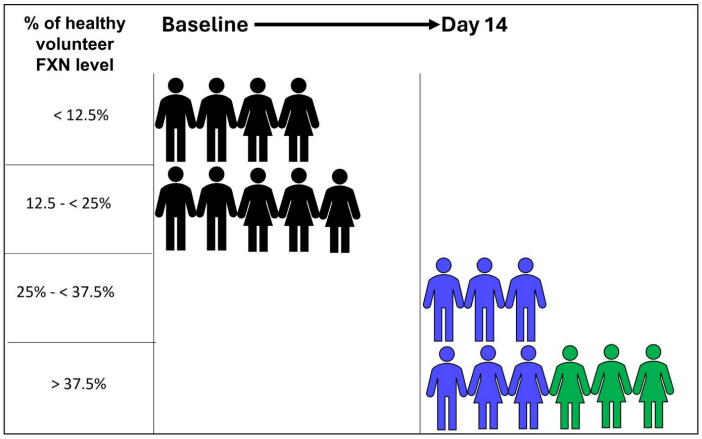
*FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample. Data represent median and 25th and 75th percentiles. Only participants with quantifiable levels at both baseline and Day 14 are included in the figures.
**Median baseline FXN level in patients were 2.1 pg/µg for the placebo, 1.8 pg/µg for the 25 mg cohort and 1.6 pg/µg for the 50 mg cohort.

Skin Cell FXN Levels Achieve Higher % of Healthy Volunteers* Following 14 days of Daily Nomlabofusp

25 mg of Nomlabofusp



50 mg of Nomlabofusp



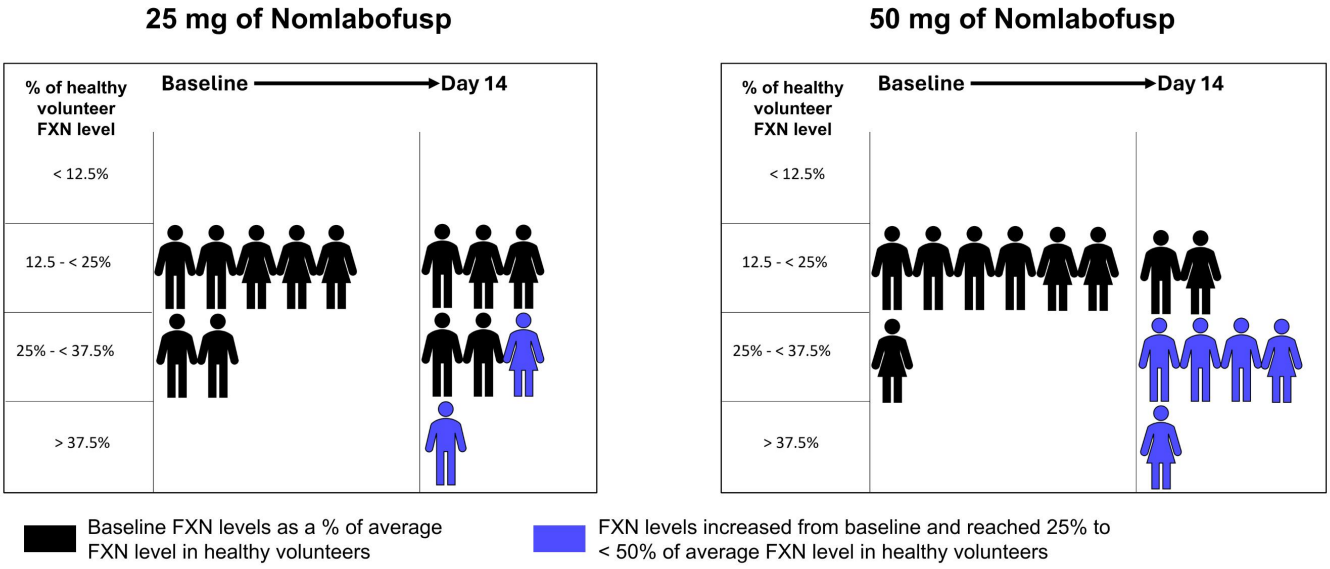
Baseline FXN levels as a % of average FXN level in healthy volunteers

FXN levels increased from baseline and reached 25% to < 50% of average FXN level in healthy volunteers

FXN levels increased from baseline and reached > 50% of average FXN level in healthy volunteers

Only participants with quantifiable levels at baseline and day 14 are included in the figures.
*% of healthy volunteer FXN level is calculated by dividing each participant's FXN level by the average FXN level (16.34 pg/µg) from the noninterventional healthy volunteer study (N=60).

Buccal Cell FXN Levels Achieve Higher % of Healthy Volunteers* Following 14 days of Daily Nomlabofusp



Only participants with quantifiable levels at baseline and day 14 are included in the figures.
*% of healthy volunteer FXN level is calculated by dividing each participant's FXN level by the average FXN level (8.24 pg/µg) from Larimar's noninterventional healthy volunteer study (N=60).

Absolute Increases in Skin FXN Levels

Dose response in tissue FXN concentrations and increases from baseline after dosing

Day 14 Skin FXN Levels			
Dose	Visit	Absolute Values (pg/µg)	
		Median	Mean
25 mg	Baseline	3.70	3.38
	Day 14	5.53	6.40
	Change from Baseline	**2.81**	**3.02**
50 mg	Baseline	2.12	2.08
	Day 14	7.40	7.32
	Change from Baseline	**5.57**	**5.24**

Day 28 Skin FXN Levels			
Dose	Visit	Absolute Values (pg/µg)	
		Median	Mean
25 mg	Baseline	3.70	3.38
	Day 28	4.39	4.80
	Change from Baseline	**2.28**	**1.41**
50 mg	Baseline	2.12	2.08
	Day 28	5.23	5.24
	Change from Baseline	**3.14**	**3.17**

Larimar Therapeutics

Only participants with quantifiable levels at baseline and day 14 and day 28 are included in the tables.

Absolute Increases in Buccal FXN Levels

Dose response in tissue FXN concentrations and increases from baseline after dosing

Day 14 Buccal FXN Levels			
Dose	Visit	Absolute Values (pg/µg)	
		Median	Mean
25 mg	Baseline	1.78	1.80
	Day 14	2.24	2.22
	Change from Baseline	**0.56**	**0.42**
50 mg	Baseline	1.61	1.69
	Day 14	2.44	2.38
	Change from Baseline	**0.72**	**0.69**

Day 28 Buccal FXN Levels			
Dose	Visit	Absolute Values (pg/µg)	
		Median	Mean
25 mg	Baseline	1.70	1.65
	Day 28	1.73	1.76
	Change from Baseline	**0.03**	**0.11**
50 mg	Baseline	1.76	1.77
	Day 28	2.15	2.15
	Change from Baseline	**0.48**	**0.38**

Only participants with quantifiable levels at baseline and day 14 and day 28 are included in the tables.

Nomlabofusp: Predictable Pharmacokinetics

1. Quick absorption after subcutaneous administration
2. Dose-proportional increases in exposure observed
3. Pharmacokinetic profile consistent with Phase 1 studies

Larimar Therapeutics

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)

Larimar Therapeutics

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)

SD: Standard deviation

Data Presented at the International Congress for Ataxia Research, November 2024

Nomlabofusp Clinical Studies Included a Broad, Representative Population of Adults with FA

Broad population of adults with FA included in Phase 1 and 2 Studies

Age of onset between 5 - 60 years with a median age of onset of 15 yrs

81% of participants had FXN levels at baseline less than 30% of healthy controls and 37% of participants had less than 20%

Over 50% of participants were non-ambulatory at baseline

**18 subjects participated in more than 1 study*
***Quantifiable buccal cell FXN levels relative to the median of healthy controls*
****Ambulatory status is based on the gait score (E7=5 vs. <5) of the upright stability subscore of the mFARS*
*****Data presented at the International Congress for Ataxia Research, November 2024*

Demographics and Baseline Disease Characteristics from Nomlabofusp Phase 1 and 2 Interventional Studies****

	N*	Median	Mean	Min	Max
Age	61	28.0	31.9	19	69
Age of Onset	61	15.0	15.9	5	60
Age of Diagnosis	61	19.0	21.0	5	64
Shorter GAA (GAA_1)	60	550.0	555.8	99	1000
Longer GAA (GAA_2)	60	900.0	890.2	265	1300
Frataxin, % of Control**	57	24.4	23.9	8.7	61.9
mFARS Score	61	52.0	49.5	13.2	74.5
Upright Stability Score	61	32.0	26.9	7.0	35.0
Dominant hand 9-hole peg test	61	71.0	84.8	26.0	229.2
T25-FW Test Score	51	9.9	13.4	4.3	48.5
Left Ventricular Mass (g)	61	163.4	168.0	73.7	398.8
LVEF %	61	63.0	63.5	52	76
Ambulatory Status***					
No	36				
Yes	25				

Larimar Therapeutics

Pooled Data from Completed Phase 1 & 2 Studies Confirms Disease & FXN Relationships are Consistent with Literature

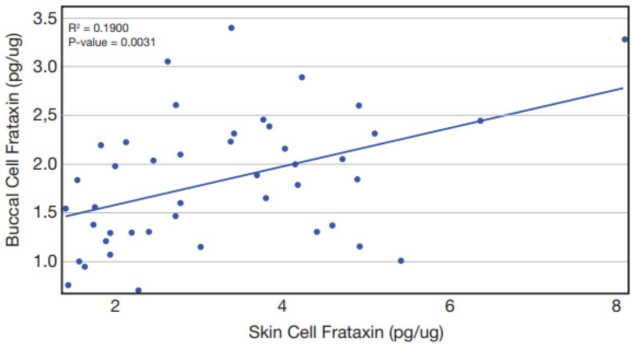
Disease Characteristics by Quartiles Based on Buccal Cell FXN Levels at Baseline

Quartile	FXN Concentration* (pg/mcg)	Age at Symptom Onset**	Age at Diagnosis **	GAA_1**	GAA_2**
Q1 (N=14)	< 1.31	10.5	14.5	616.5	899.5
Q2 (N=14)	1.31 - <1.95	13.5	23.0	486.0	866.0
Q3 (N=14)	1.95 - <2.30	16.0	19.0	555.0	871.5
Q4 (N=15)	≥ 2.30	19.0	27.0	400.0	933.0

**Quantifiable buccal cell frataxin levels*
***Median values*
Median buccal cell FXN concentration in healthy controls = 8.1 ng/mcg

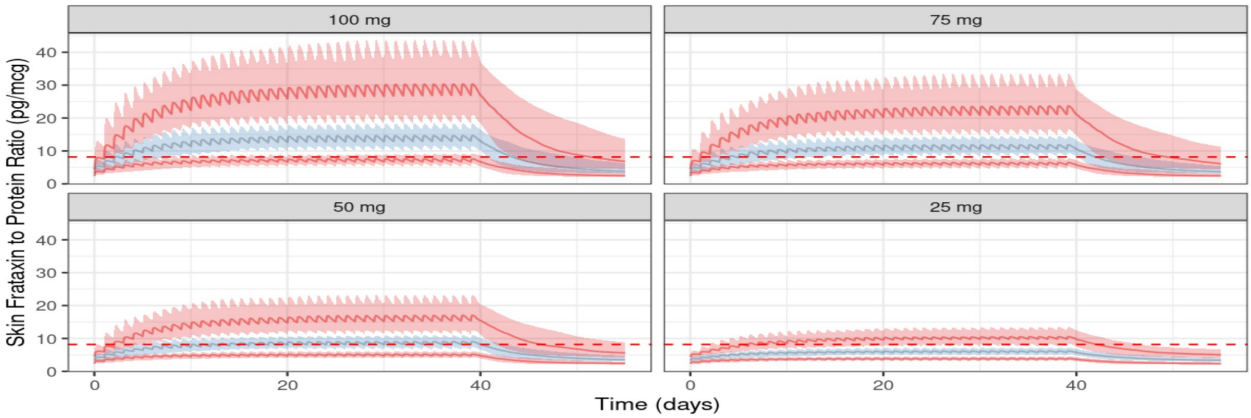
Buccal cell FXN levels correlated with age of onset and inversely correlated with the number of GAA repeats and rate of disease progression

Baseline Buccal and Skin Cell FXN Levels



Buccal cell FXN levels correlated with skin cell FXN levels

Modeling/Simulation Predicts* 50mg Daily Can Achieve Skin FXN Levels ≥50% of Healthy Controls in Most Patients



Dashed red line – 50% the average skin FXN/protein ratio (8.17 pg/ug) in a non-interventional study in healthy controls (HC)
Blue line – median of simulated values across trials
Red lines – 10th and 90th percentiles
Shaded regions – 95% confidence intervals of the corresponding percentiles (10th, 50th, and 90th).

Data presented at the International Congress for Ataxia Research, November 2024

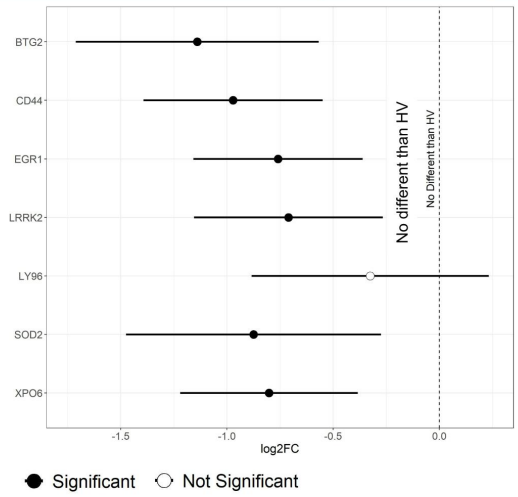
50 mg nomlabofusp daily was predicted to lead to:
A median increase of 5.64 (2.3 – 13.5) pg/µg in FXN levels from baseline

Increase in skin FXN levels in 59% of simulated patients with FA to levels ≥50% of average skin FXN levels in HC

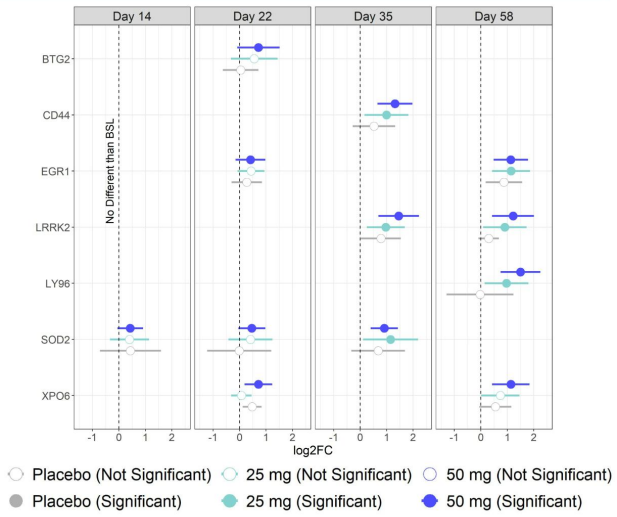
**PK/PD model was developed with data collected from 3 completed studies in adults with FA. A population of virtual FA patients (n = 100, 100 trials) receiving subcutaneous daily doses of 25, 50, 75, or 100 mg nomlabofusp for 40 days was simulated*

Increase Towards Normal Gene Expression in Adults with FA* Observed After Nomlabofusp Treatment

Select Baseline Gene Expression
Patients with FA* vs. Healthy Volunteers (HV)**

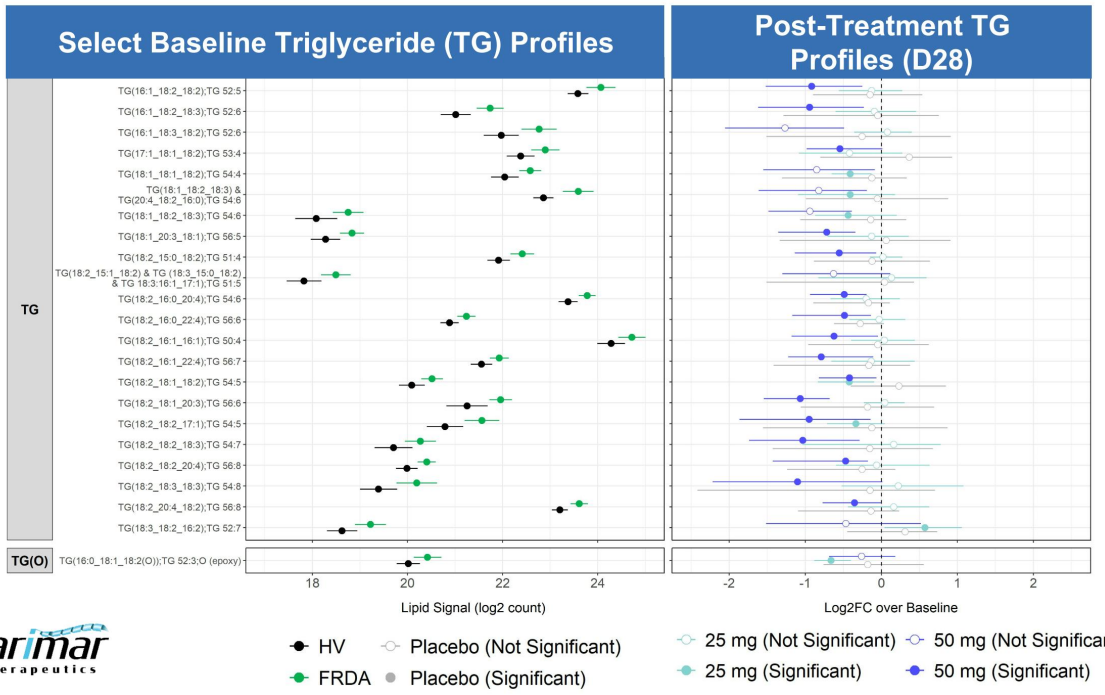


Post-treatment Changes in Gene Expression From Baseline



Data presented at the International Congress for Ataxia Research, November 2024
**Samples from Phase 2 dose exploration study evaluating nomlabofusp 25 mg (Cohort 1) and 50 mg (Cohort 2) or placebo via subcutaneous injection daily for 14 days followed by alternate day administration for 14 days. Buccal samples were collected before, during, and after treatment for gene expression profiling*
***Data from Larimar's non-interventional healthy volunteer study*

Decrease Towards Normal Lipid Profiles in Adults with FA* Observed After Nomlabofusp Treatment



**Samples from Phase 2 dose exploration study evaluating nomlabofusp 25 mg (Cohort 1) and 50 mg (Cohort 2) or placebo via subcutaneous injection daily for 14 days followed by alternate day administration for 14 days. Plasma samples were collected before, during, and after treatment for lipid profiling. Healthy volunteer (HV) data is from Larimar's non-interventional HV study*

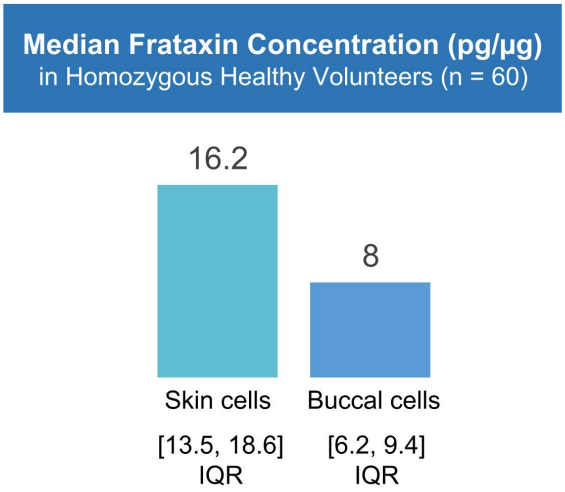
Data presented at the International Congress for Ataxia Research, November 2024

Larimar Therapeutics

Non-Interventional Study Data

CLIN-1601-002: Top-line Non-interventional Study Results

Non-interventional study measured FXN in homozygous healthy volunteers



Most patients with FA only produce ~20-40%[1] of normal frataxin levels depending on the tissue, sampling technique, and assay considered

Lower FXN levels seen with typical onset[2] (5 to 15 years of age)

Higher FXN levels seen with late onset[2] (after 25 years of age)

Heterozygous carriers who show no signs of disease have buccal cell FXN levels of ~50% of unaffected healthy persons[1]

Larimar Therapeutics

FXN concentrations were measured in skin and buccal cells from 60 homozygous healthy volunteers utilizing the same sampling technique and assay as clinical trials of nomlabofusp; FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations normalized to total cellular protein content in each sample. 1. E.C. Deutsch et al. Molecular Genetics and Metabolism 101 (2010) 238–245. 2. Friedreich's Ataxia Research Alliance

FDA START Pilot Program

Nomlabofusp Selected by FDA for START Pilot Program

Highlights FDA commitment to augment formal meetings with more rapid, ad-hoc communications to accelerate program development of rare diseases

START Pilot Program Support for Clinical Trials Advancing Rare Disease Therapeutics	**CDER Selection Based On**
A new milestone-driven program launched by the FDA in September 2023 Designed to **accelerate development of novel therapies** intended to address unmet medical needs in **rare diseases** **7 novel drugs selected** • 3 products by CDER (nomlabofusp) for rare neurodegenerative conditions • 4 products by CBER for cell and gene therapy	Demonstrated development **program readiness** (e.g., sponsors who demonstrate the ability to move the program towards a marketing application) Potential to address serious and unmet medical need in a **rare neurodegenerative condition** **Alignment of CMC** development timelines with clinical development plans Proposed plan where **enhanced communication can improve efficiency of product development**

Larimar Therapeutics

FDA: Food and Drug Administration; CDER: Center for Drug Evaluation and Research; CBER: Center for Biologics Evaluation and Research; CMC: Chemistry, Manufacturing, and Controls

FARA

Strong Relationship with FARA – Joined FARA's TRACK-FA Neuroimaging Consortium as an Industry Partner

TRACK-FA collects natural history data to establish disease specific neuroimaging biomarkers for potential use in clinical trials. Larimar will have access to all study data for use in regulatory filings, as appropriate

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

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