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): October 14, 2025

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** **(Address of Principal Executive Offices)**	**19004** **(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.

On October 14, 2025, Larimar Therapeutics, Inc. (the "Company") posted on its website an updated slide presentation, which is attached as Exhibit 99.1 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	Larimar Therapeutics, Inc. Corporate Presentation, dated October 14, 2025*
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith

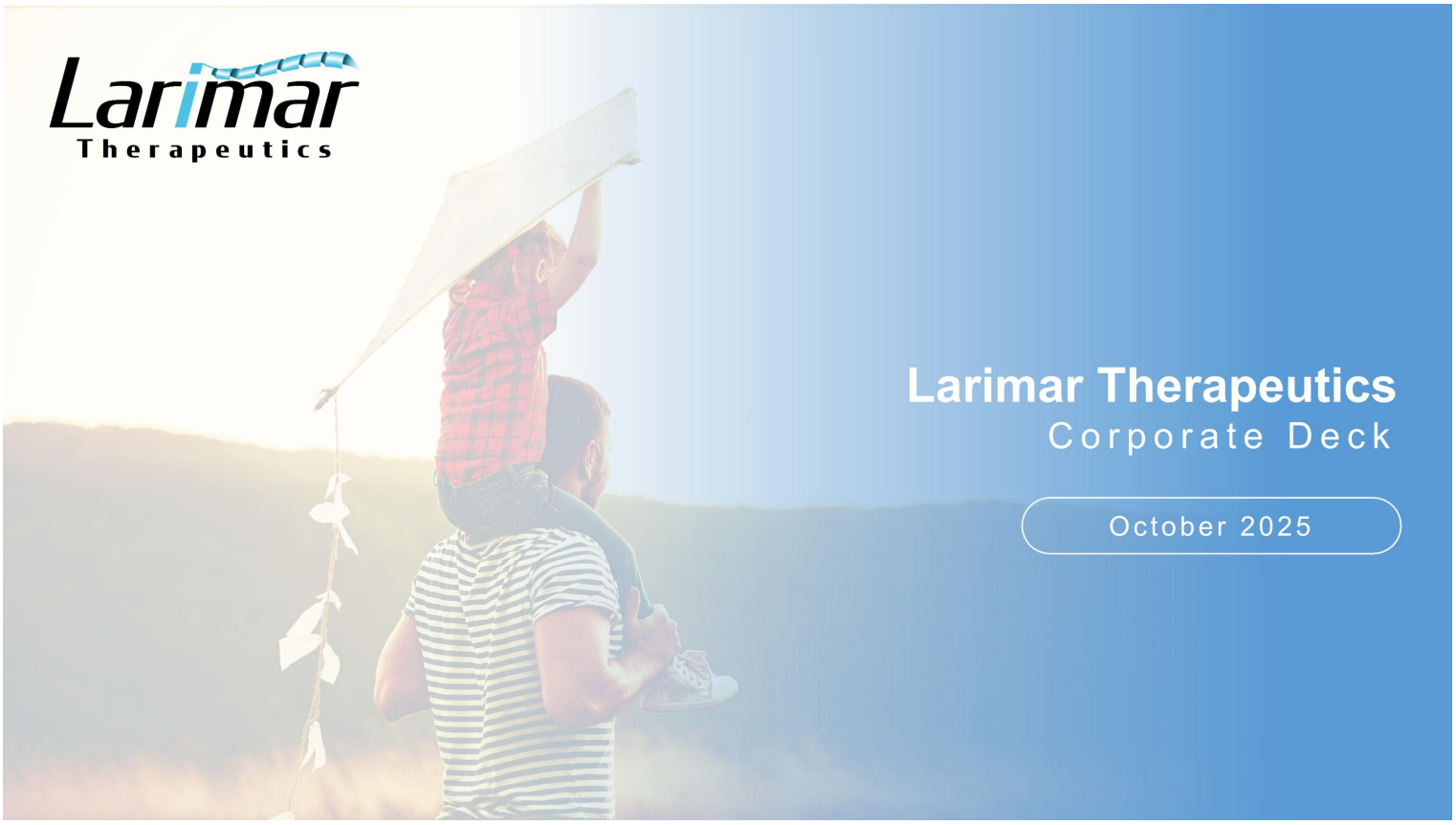
SIGNATURES

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: October 14, 2025

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



Larimar Therapeutics

Corporate Deck

October 2025

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 any 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, and Larimar’s ability to timely implement the revised dosing regimen in its clinical program for nomlabofusp; 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; delays in patient recruitment, including as a result of changes in clinical protocols and adverse events; 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.

Nomlabofusp – First Potential Disease Modifying Therapy for Friedreich's Ataxia

Initial 50 mg Open Label Study Data Supports Therapeutic Potential of Nomlabofusp

Increased skin FXN levels and consistent directional improvement in clinical outcomes	• 100% of participants with data at 6 months achieved skin FXN levels over 50% of median levels in healthy volunteers (which is similar to levels in asymptomatic carriers) • mFARS (primary outcome measure in other clinical studies) median score improvement of 2.25 in OL study participants after 1 year relative to a worsening of a median 1.00 observed in FACOMS natural history reference population • Consistent directional improvements observed after 1 year across 4 key clinical outcomes (mFARS, FARS-ADL, 9-HPT, MFIS) suggest a potential for clinical benefit relative to a worsening in the FACOMS reference population

Long-term safety observations with daily nomlabofusp	• Of 39 participants in OL study (65 total participants who received at least 1 dose in all nomlabofusp studies):
	  • 7 experienced anaphylaxis in the first 6 weeks of dosing; all returned to usual state of health after standard treatment
	  • Of the 39 participants in the OL study, 10 did not have prior exposure to nomlabofusp; 1 of these 10 experienced anaphylaxis (this participant is one of the 7 previously described cases)
	• Following the 2 most recent cases of anaphylaxis, Larimar consulted its experts and decided to modify its starting dose regimen. Larimar provided FDA a full data update on the clinical development program and FDA agreed with our approach
	• Nomlabofusp was generally well tolerated with long-term daily dosing including 14 on treatment for at least 6 months and 8 for over 1 year; most common AEs were mild/moderate local ISRs and did not lead to any withdrawals

Continue targeting BLA submission Q2 2026	• The BLA will pursue accelerated approval based on increases in skin FXN levels as further demonstrated in this data • Based on these compelling data, we continue to target the BLA filing for Q2 2026 and believe that nomlabofusp could be the first disease modifying therapy for patients with FA • $175.7 million estimated* cash and investments as of September 30, 2025, with projected cash runway into Q4 2026

FXN: frataxin; FACOMS: Friedreich's Ataxia Clinical Outcome Measures Study; AE: Adverse events; ISRs: Injection site reactions; BLA: Biologics License Application

*This estimate is unaudited and preliminary and actual results may differ due to the completion of our September 30, 2025 quarterly closing procedures. As such, this estimate should not be viewed as a substitute for our September 30, 2025 financial statements prepared in accordance with U.S. generally accepted accounting principles.

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 (FXN) 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 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
Unmet Medical Need	The only treatment currently approved for FA does not address frataxin deficiency

Larimar is developing nomlabofusp, the first potential disease modifying therapy designed to systemically address the underlying FXN deficiency in FA

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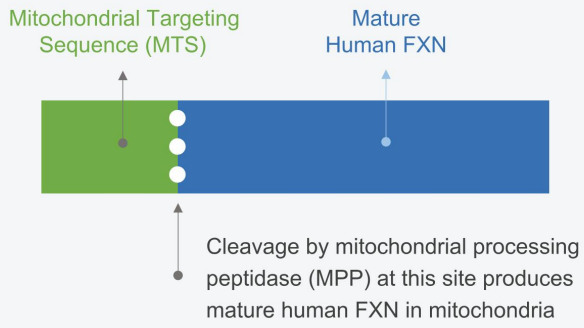
* E.C. Deutsch et al. Molecular Genetics and Metabolism 101 (2010) 238–245.

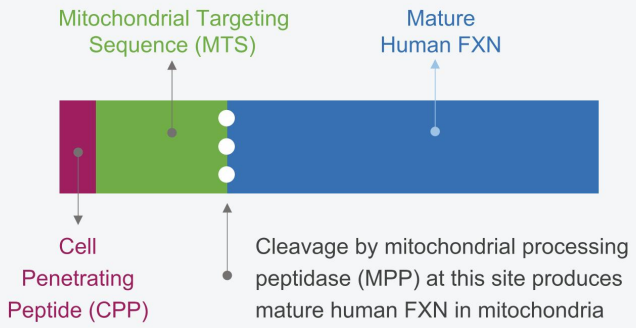
Nomlabofusp is Designed to Deliver Additional Frataxin

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

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FXN Levels Clearly 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

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*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.

Nomlabofusp Long-term Open Label Study

Expanding Open Label Study*: Now Includes Adolescents and Participants not in Prior Nomlabofusp Studies

Patient Population

Initially, participation in a prior Phase 1 or Phase 2 trial required

Expanded study criteria to include:

- Adolescents (12-17 yrs) from the PK run-in study
- Participants not in prior studies

Plan to enroll children (2 to 11 yrs) directly in study

25 mg nomlabofusp

Participants switched from 25 mg to 50 mg dose from Nov 2024 to Q1 2025

50 mg nomlabofusp***

Daily subcutaneous injections self-administered or by a caregiver

Key Study Objectives

- Safety and tolerability
- Long-term PK
- Skin FXN concentrations
- Clinical efficacy measures compared to FACOMS** database

***Following the 2 most recent cases of anaphylaxis, Larimar consulted its experts and decided to modify its starting dose regimen. Larimar provided the FDA a full data update on the clinical development program and FDA agreed with our approach

- Antihistamines 5 days prior to first dose and for 90 days after first dose
- 5 mg test dose followed by a 25 mg dose 1 hour later and then 25 mg daily for the first 30 days; after 30 days the dose will be increased to 50 mg once daily

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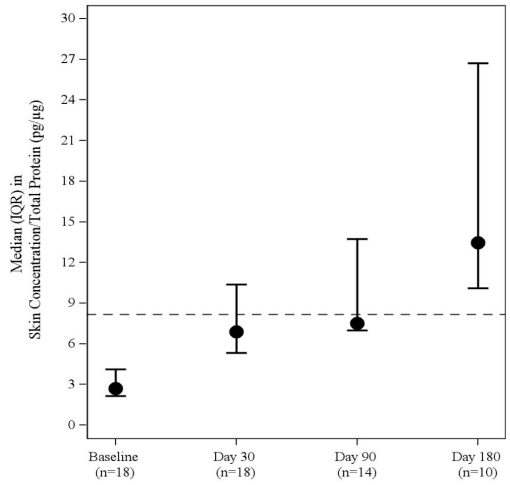
*Due to inclusion of participants who have not participated in prior nomlabofusp clinical studies, this study is now referred to as Open Label Study (previously called the Open Label Extension study)
**FACOMS: Friedreich's Ataxia Clinical Outcome Measures Study

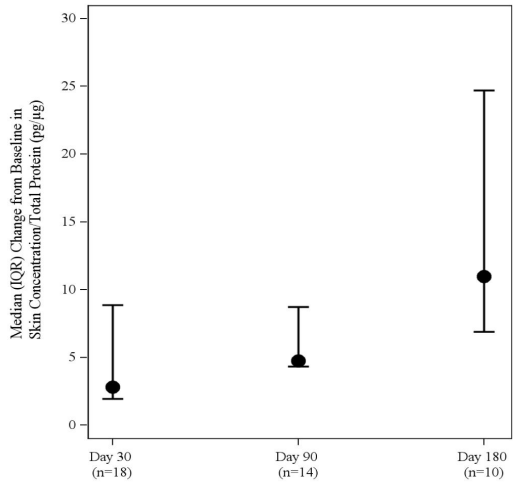
Increases in Skin FXN Levels are Sustained Over Time

100% of Participants at Day 180 had Skin FXN Levels >50% of Healthy Volunteers

Median Skin*FXN Levels*



Median Change from Baseline in Skin FXN Levels*



Dotted Line indicates 50% of healthy volunteers FXN level

*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. Data include all participants with quantifiable FXN levels at baseline and at least 1 post-baseline FXN level.

100% of OL Study Participants on Nomlabofusp Achieved FXN Levels by Day 180 that are Over 50% of Healthy Volunteers

Percentage of Participants* with Skin FXN Levels > 8.2 pg/µg** (50% of the median FXN concentration found in healthy volunteers)			
Baseline	**Day 30**	**Day 90**	**Day 180**
0% 0/18	**33%** 6/18	**43%** 6/14	**100%** 10/10

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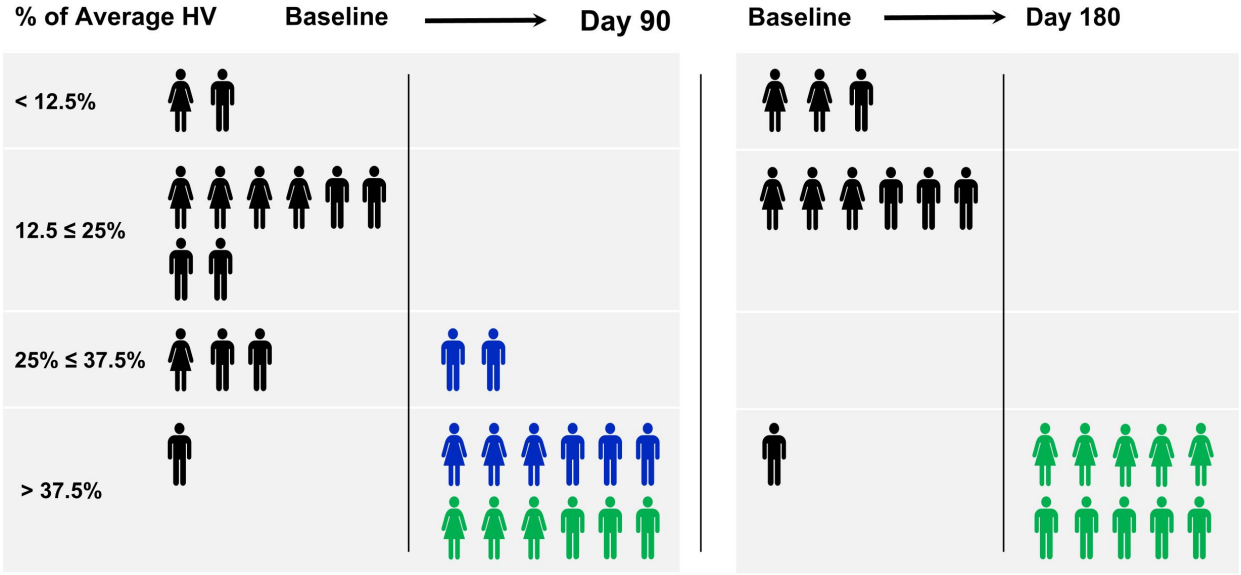
*Data include all participants with quantifiable levels at each measurement point who had received 25 mg, 50 mg or had the dose increased from 25 mg to 50 mg
**8.2 pg/µg represents 50% of the median FXN concentration

Skin FXN Levels Achieve Higher % of Healthy Volunteers' FXN Levels* Following Daily Nomlabofusp



*% of average healthy volunteers (HV) 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)

Data include all participants with quantifiable FXN levels at baseline and Day 90/Day 180

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Baseline as a percentage of average FXN level in HV

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

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

Absolute Skin FXN Levels Increase Over Time with Nomlabofusp* Treatment in the Open Label Study

Statistic	Baseline	Day 30	Day 90	Day 180
N	*18*	*18*	*14*	*10*
Median (IQR)	**2.70 (2.14, 4.13)**	**6.87 (5.34, 10.37)**	**7.50 (6.66, 13.73)**	**13.44 (10.10, 26.71)**
(Min, Max)	(1.5, 6.3)	(1.5, 76.4)	(5.6, 37.1)	(8.7, 92.9)

- FDA is open to use of increases in skin FXN concentrations as a reasonably likely surrogate endpoint
- FDA acknowledged submitted data appears to support a relationship between increased skin FXN and relevant tissues such as the heart, dorsal root ganglion, and skeletal muscle
- Acceptability of increases in skin FXN for accelerated approval will be decided during future BLA review

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FXN = frataxin; IQR = interquartile range
Note: Median skin FXN levels in Larimar's noninterventional healthy volunteer study= 16.34 pg/µg
* Data include all participants with quantifiable FXN levels at each measurement point who had received 25 mg, 50 mg or had the dose increased from 25 mg to 50 mg

Disease Characteristics – OL Study & FACOMS Reference Population

	Nomlabofusp*	FACOMS
Age of screening (years)		
n	38	370
Mean (SD)	30.2 (10.94)	27.5 (9.30)
Min, Max	12, 55	12, 54
Age of symptom onset (years)		
n	38	370
Mean (SD)	12.7 (6.09)	13.8 (5.50)
Min, Max	5, 30	5,30
Baseline mFARS Total Score		
n	38	370
Mean (SD)	55.7 (17.05)	49.7 (14.5)
Min, Max	23.3, 85.5	23.3, 80.5

	Nomlabofusp*	FACOMS
Baseline FARS-ADL Overall Score		
n	38	370
Mean (SD)	17.5 (6.84)	14.2 (5.70)
Min, Max	2, 27	2, 27
Baseline 9-HPT Average Time of Dominant Hand(s)		
n	34	370
Mean (SD)	95.4 (67.65)	124.8 (51.90)
Min, Max	35.8, 277.3	36.7, 276.5
Baseline MFIS Overall Score		
n	38	370
Mean (SD)	33.2 (15.05)	31.8 (15.60)
Min, Max	2, 79	2, 78

FACOMS longitudinal natural history study (N = 955) includes participants with confirmed FA diagnosis
Larimar identified participants from the FACOMS dataset with similar range of baseline characteristics of participants in the OL study using data recorded over the last 4 years for each participant

*Participants in open label study included 58% female, 53% with exposure to omaveloxolone and 53% non-ambulatory

Improvements Across Clinical Outcomes with Nomlabofusp Relative to Worsening in FACOMS Study Supports Potential Clinical Benefits

		mFARS [0- 93]		FARS-ADL [0- 36]		9-HPT Dominant Hand		MFIS [0- 84]	
	Statistic	**Nomlabofusp**	**FACOMS[1]**	**Nomlabofusp**	**FACOMS[1]**	**Nomlabofusp**	**FACOMS[1]**	**Nomlabofusp**	**FACOMS[1]**
Baseline	**Median** (IQR)	**54.75** (41.2, 71.0)	**50.00** (37.0, 61.0)	**17.75** (13.0, 24.5)	**14.50** (10.0, 18.5)	**71.95** (49.6, 114.8)	**113.50** (86.5, 148.5)	**34.00** (20.0, 34.0)	**32.00** (21.0, 42.0)
	n	38	370	38	370	34	370	38	370
Change from Baseline at 1 year	**Median** (IQR)	**-2.25** (-3.75, -0.25)	**1.00** (-1.5, 4.0)	**-0.50** (-2.0, 1.0)	**0.50** (-1.0, 2.5)	**-7.40** (-38.8, -2.5)	**3.40** (-4.5, 18.0)	**-6.50** (-17.5, 4.0)	**1.50[2]** (-9.5, 11.0)
	n	8	185	8	237	7	219	8	136

IQR = interquartile range

[1] Based on the range of baseline characteristics of participants in the OL study, Larimar identified patients from the FACOMS dataset with similar characteristics using data recorded over the last 4 years for each patient

[2] Modified Fatigue scale presented here is at Month 24 because it was not assessed at Month 12

Nomlabofusp Safety Observations with Long-term Treatment

- 7 of 39 participants in OL study (65 total participants received at least 1 dose of nomlabofusp across all studies) experienced anaphylaxis
  - Most events occurred on the initial day of administration, and all occurred within the first 6 weeks of dosing
  - All returned to usual state of health after standard treatment
- Of the 39 participants in the OL study, 10 did not have prior exposure to nomlabofusp; 1 of these 10 experienced anaphylaxis (this participant is one of the 7 previously described cases)
- Nomlabofusp with long-term daily dosing was generally well tolerated, including 14 on treatment for at least 6 months and 8 for over 1 year
- Most common AEs were mild/moderate local ISRs and did not lead to any withdrawals
- Following the 2 most recent cases of anaphylaxis, Larimar is modifying the starting dose regimen to include:
  - Antihistamines 5 days prior to first dose and for 90 days after first dose
  - 5 mg test dose followed by a 25 mg dose 1 hour later and then 25 mg daily for the first 30 days; after 30 days the dose will be increased to 50 mg daily
  - Continue dispensing epinephrine auto-injector, such as EpiPen, to be administered in the event of anaphylaxis
- Larimar provided the FDA a full data update including the safety, FXN, and clinical data. FDA agreed with the new dosing regimen and Larimar is implementing the change

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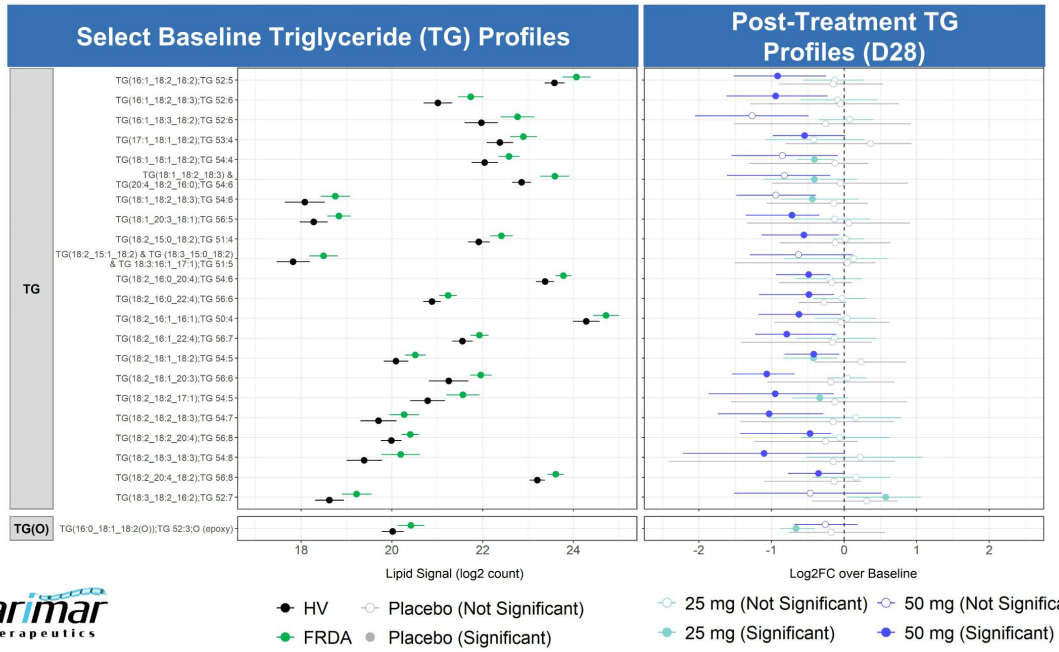
AE: Adverse events; ISR: Injection site reaction

Key Clinical Data From Prior Studies

Interest from FDA in Exploring the Correlation Between Lipids and FXN Concentrations

Decreases in elevated lipids 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

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Nomlabofusp PK Profile Consistent Across Studies

Long-term PK Profile Consistent with Phase 1 and Phase 2 Studies

- Rapid absorption after subcutaneous administration
- Steady state reached by Day 30 at both the 25 mg and 50 mg doses with no further accumulation
- Pharmacokinetic profile consistent with Phase 1 and Phase 2 studies

Adolescent PK Profile Consistent with Adult

- Adolescents 12 to 17 years of age received a weight-based equivalent of 50 mg for 7 days
- Exposure and PK in 9 adolescents 12 to 17 years of age on nomlabofusp was similar to adults on 50 mg of nomlabofusp

Global Phase 3 Double-blind Placebo-controlled Study

Patient Population

- Ambulatory participants
- 2 - 40 years of age (~2/3 under 21 years of age)
- n = 100 – 150

Placebo

50 mg nomlabofusp

Daily subcutaneous injections self-administered or by a caregiver

18 months of treatment

Key Study Objectives

- Safety and tolerability
- Upright stability (U.S.) and mFARS (Europe) as primary outcome measures

Qualifying sites in U.S., Europe, U.K., Canada, and Australia

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Potential Path to Bring Nomlabofusp to Patients Worldwide

Open Label Study	Global Phase 3 Study*	Next Steps
Plan to continue enrolling participants on new starting dose regimen with long-term 50 mg dose, including adolescents and those new to a nomlabofusp study Continue introducing lyophilized dosage form Planning to enroll children (2 - 11 yrs of age) directly into the study	Received feedback from FDA and EMA on study protocol Sites in the U.S., Europe, U.K., Canada, and Australia currently being qualified	Update on open label study status and regulatory discussions in Q1 2026 BLA submission seeking accelerated approval targeted in Q2 2026 U.S. launch targeted for early 2027

Received FDA Agreement on strategy for potency testing of nomlabofusp; commercial scale PPQ in progress

START Pilot (US)	Orphan Drug (US & EU)	Rare Pediatric Disease (US)	Fast Track (US)	PRIME (EU)	ILAP (UK-MHRA)

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*Study will initiate with participants 12-40 yrs of age and will change to 2-40 yrs when dose is confirmed in children 2-11 yrs of age

Nomlabofusp Advancing Towards BLA Submission for FA

First potential disease modifying therapy
Designed to systemically address FXN deficiency in FA

FDA clarity on key BLA elements
BLA based on skin FXN levels as potential surrogate endpoint

Positive long-term data
Increased skin FXN levels similar to asymptomatic carriers and consistent directional improvement across 4 key clinical outcome measures

BLA submission seeking accelerated approval targeted Q2 2026
U.S. launch targeted for early 2027

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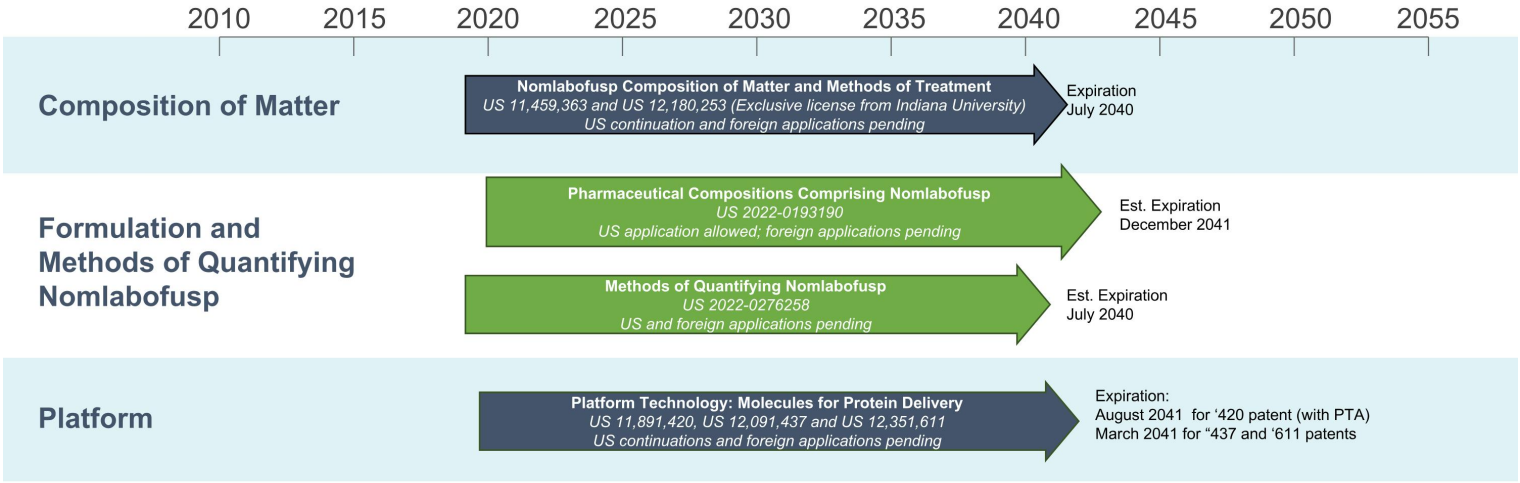
Appendix

Larimar Technology is Supported by a Strong IP Portfolio

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



Additional nomlabofusp IP protection

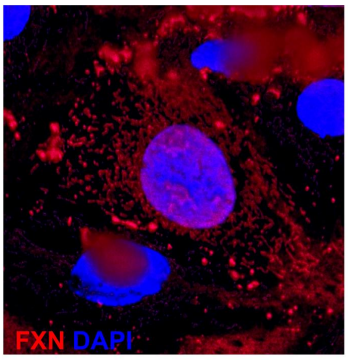
- US and foreign pending applications and patents cover key biomarkers, analytical tools and methods of treatment for additional disease indications for nomlabofusp
- Nomlabofusp should be eligible for **12 years of market exclusivity** upon approval in the US (independent of patents) and at least **10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

Granted Pending

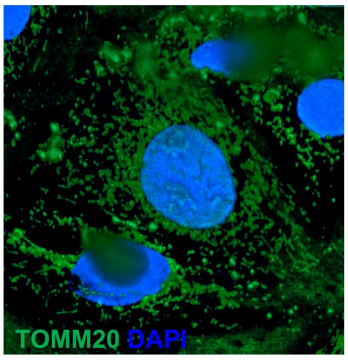
Mitochondrial Localization and Preclinical Data

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

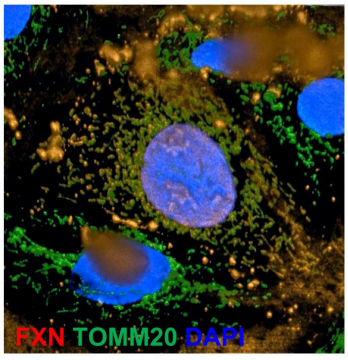
FXN staining



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

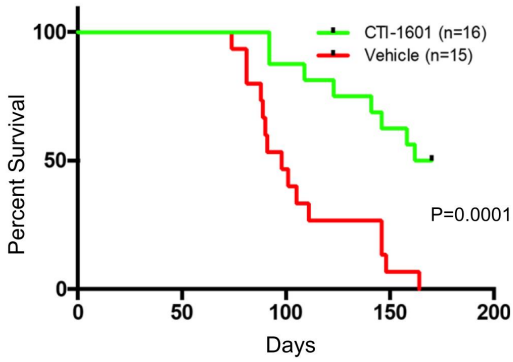
Initial proof-of-concept for FXN replacement therapy in cardiac mouse model of FA

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

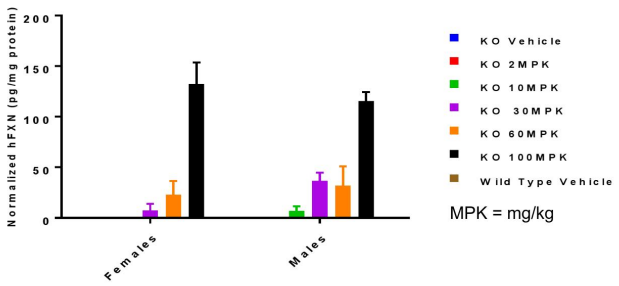
Single dose level: 10 mg/kg nomlabofusp or vehicle given intraperitoneally three times per week

- 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.

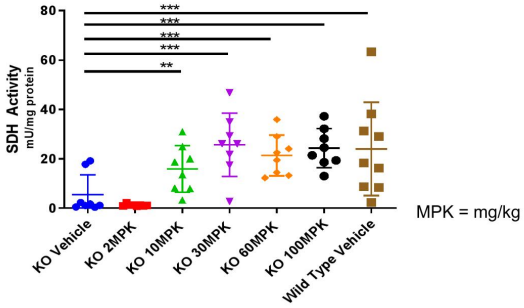
Mitochondrial FXN (Heart)



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

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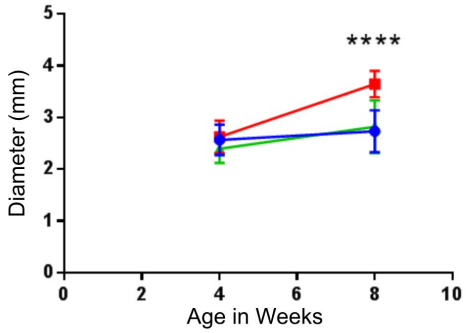
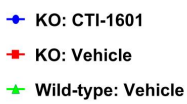
Nomlabofusp Prevents Left Ventricle Dilation in KO Mice

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.

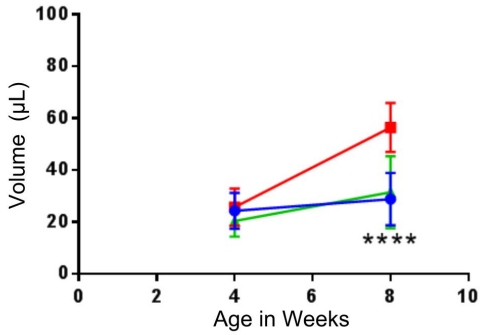
Left Ventricle Internal Diameter (Systole)



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)



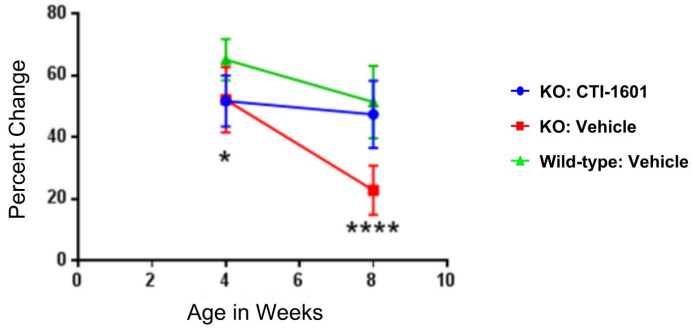
Nomlabofusp-treated mice have similar LV volume as wild type; echocardiogram shows significant differences between vehicle and nomlabofusp treated (10 mg/kg every other day) KO mice

Larimar Therapeutics

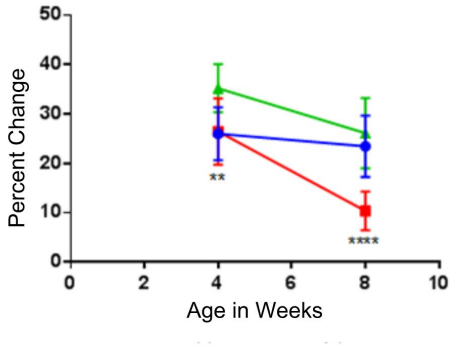
Nomlabofusp Preserves Left Ventricle Function in KO Mice

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

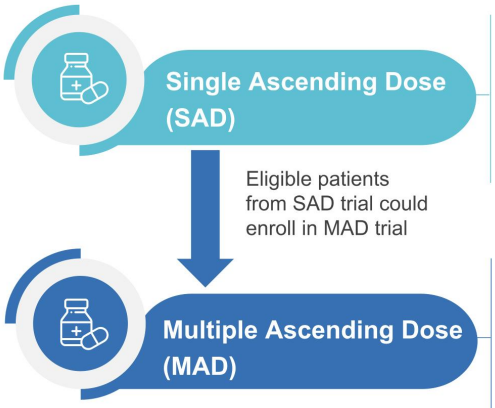
Phase 1 Clinical Data

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

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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

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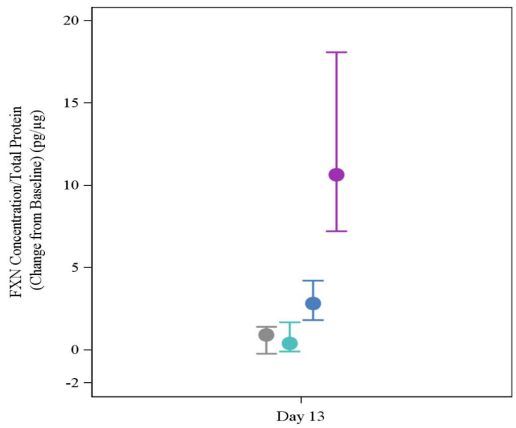
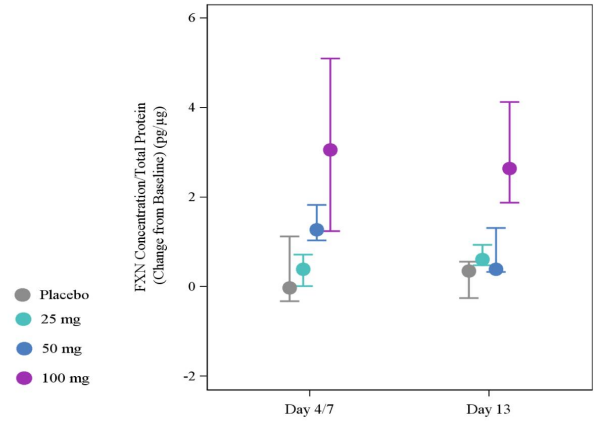
Dose Dependent Increases in FXN Levels Observed in Skin and Buccal Cells in Phase 1

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;

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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

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

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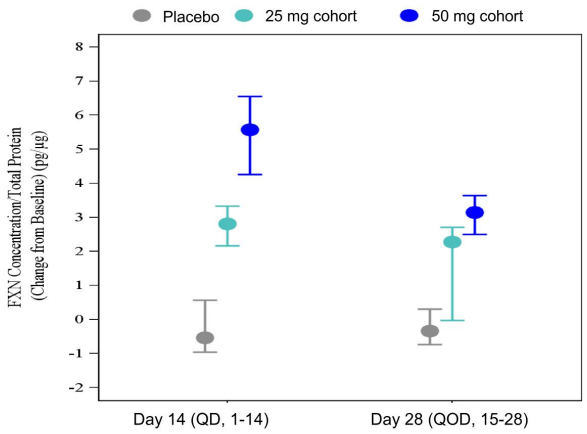
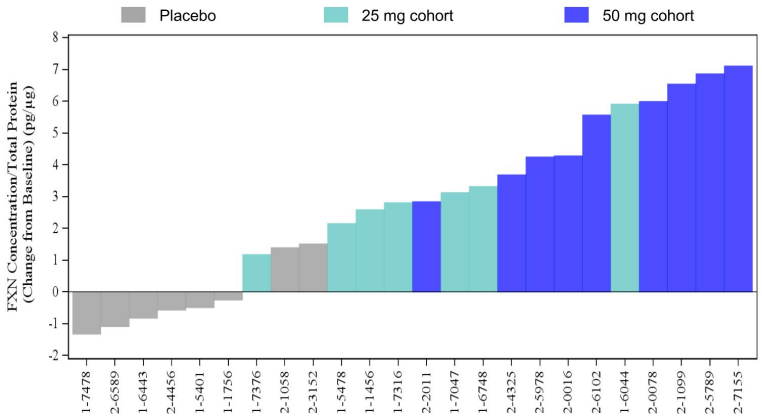
Dose-Dependent Increase in FXN Levels in Skin Cells

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

FXN Levels* in Skin Cells Change from Baseline**



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



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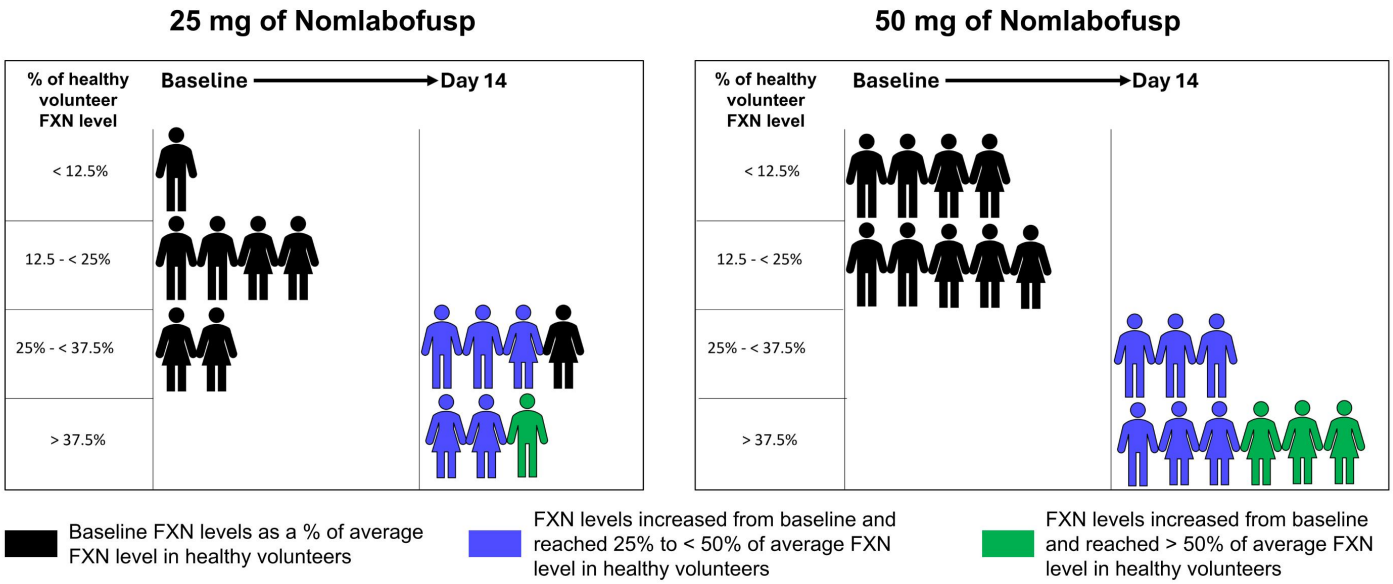
*FXN levels measured via detection of peptide derived from mature FXN; FXN concentrations are normalized to total cellular protein content in each sample. Data represent median and 25th and 75th percentiles. Only participants with quantifiable levels at both baseline and Day 14 are included in the figures.
**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.

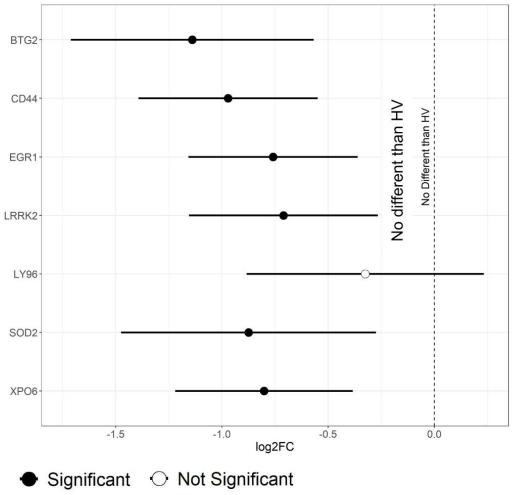
Skin Cell FXN Levels Achieve Higher % of Healthy Volunteers* Following 14 days of Daily Nomlabofusp



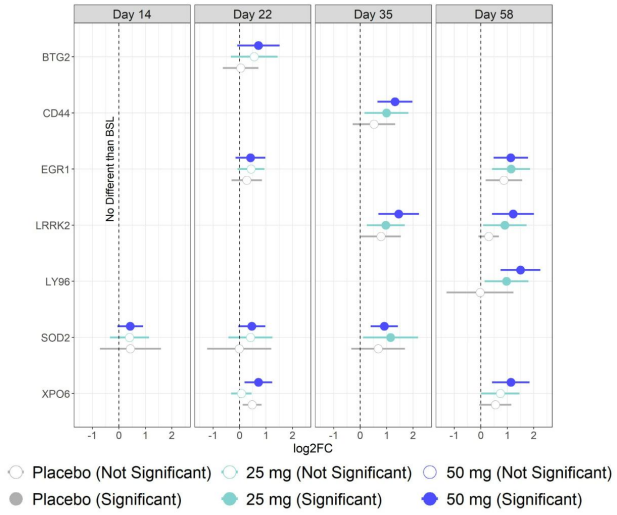
Only participants with quantifiable levels at baseline and day 14 are included in the figures.
*% of healthy volunteer FXN level is calculated by dividing each participant's FXN level by the average FXN level (16.34 pg/µg) from the noninterventional healthy volunteer study (N=60).

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*

Additional Phase 1 and 2 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				

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

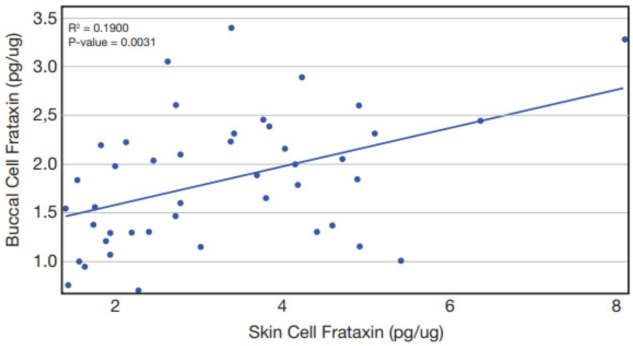
Disease Characteristics by Quartiles Based on Buccal Cell FXN Levels at Baseline

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

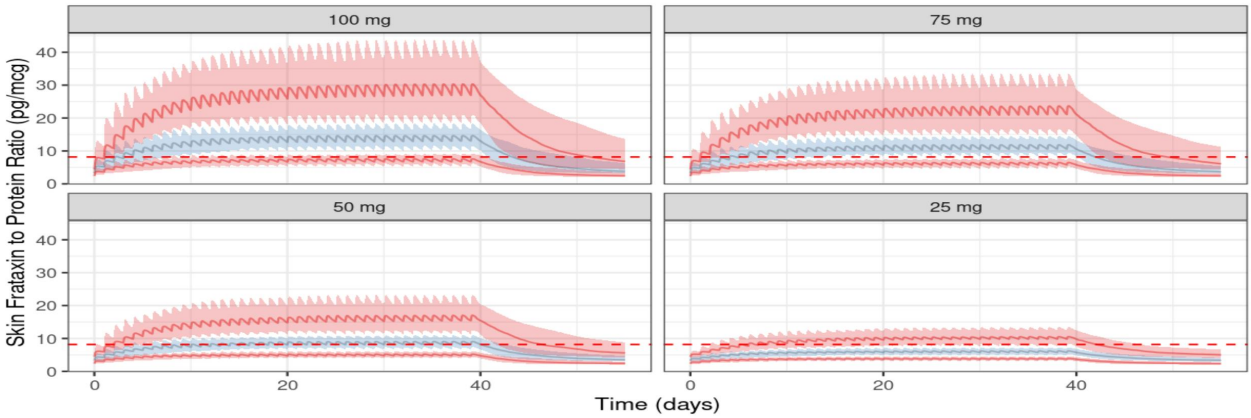
Buccal cell FXN levels correlated with age of onset and inversely correlated with the number of GAA repeats and rate of disease progression

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

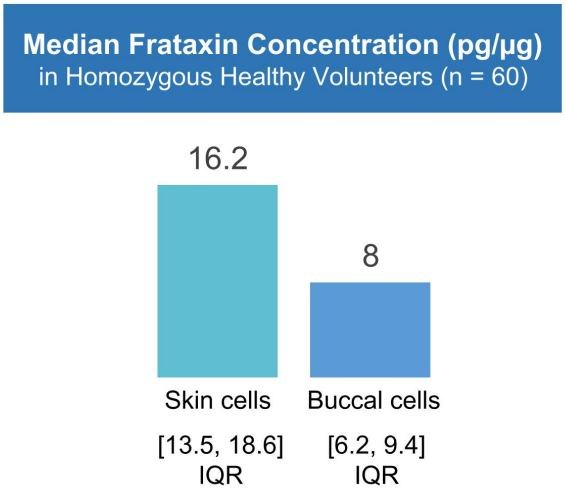
Increase in skin FXN levels in 59% of simulated patients with FA to levels ≥50% of average skin FXN levels in HC

**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*

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]

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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

START Pilot Program Continues to Expedite the Clinical and Regulatory Development of Nomlabofusp

START Pilot Program
Support for Clinical Trials Advancing Rare Disease Therapeutics

1 of 7 novel drugs development programs selected by FDA

A new milestone-driven program launched by the FDA in September 2023

Designed to accelerate the development of novel therapies for rare diseases

Sponsors selected can benefit from:
- more frequent and rapid ad-hoc FDA interactions
- help facilitating the development of programs to pre-BLA meeting stage
- guidance on generating high-quality and reliable data intended to support a BLA

CDER Selection Based On

Demonstrated development **program readiness**

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**

FDA: Food and Drug Administration; CDER: Center for Drug 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