



Investor Presentation

March 2021

Forward Looking Statements

This presentation and various remarks we make during this presentation contain forward-looking statements of Catabasis Pharmaceuticals, Inc. (“Catabasis,” the “Company,” “we”, “our” or “us”) within the meaning of applicable securities laws and regulations, including statements with respect to: our future expectations, plans and prospects for Quellis Biosciences Inc. (“Quellis”) and the combined company following the consummation of the merger transaction between the Company and Quellis Biosciences, Inc. (“Quellis”; with the merger being referred to as the “Merger”); the potential benefits of the Merger and the anticipated milestones of the Company and for QLS-215; our cash runway; the potential timing for the filing of an IND for QLS-215; the status and anticipated plans and timelines for a Phase 1a and Phase 1b/2 clinical trial for QLS-215; and the potential commercial opportunity for QLS-215. We use words such as “anticipate,” “believe,” “estimate,” “expect,” “hope,” “intend,” “may,” “plan,” “predict,” “project,” “target,” “potential,” “would,” “can,” “could,” “should,” “continue,” and other words and terms of similar meaning to help identify forward-looking statements, although not all forward-looking statements contain these identifying words. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including risks and uncertainties related to our ability to recognize the anticipated benefits of the Merger, the outcome of any legal proceedings that may be instituted against the Company or Quellis following the announcement of the Merger and related transactions; changes in applicable laws or regulations; the possibility that the Company may be adversely affected by other economic, business, and/or competitive factors, including the COVID-19 pandemic; risks inherent in pharmaceutical research and development, such as: adverse results in our drug discovery, preclinical and clinical development activities, the risk that the results of pre-clinical studies may not be replicated in clinical studies, the risk that we may not be able to enroll sufficient patients in our clinical trials on a timely basis, and the risk that any of our clinical trials may not commence, continue or be completed on time, or at all; decisions made by the U.S. FDA and other regulatory authorities, investigational review boards at clinical trial sites and other review bodies with respect to QLS-215 and any other future development candidates; our ability to manufacture sufficient quantities of drug substance and drug product on a cost-effective and timely basis; our ability to obtain, maintain and enforce intellectual property rights for QLS-215 and any other future product candidates; our potential dependence on collaboration partners; competition; our ability to manage our cash usage and the possibility of unexpected cash expenditures; our ability to obtain necessary financing to conduct our planned activities and to manage unplanned cash requirements; and general economic and market conditions; as well as the risks and uncertainties discussed in the “Risk Factors” section of the Company’s Quarterly Report on Form 10-Q for the period ended September 30, 2020, which is on file with the Securities and Exchange Commission, and in other filings that the Company may make with the Securities and Exchange Commission in the future. These forward-looking statements should not be relied upon as representing the Company’s view as of any date subsequent to the date of this presentation, and we expressly disclaim any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This presentation contains estimates and other statistical data made by independent parties and by us relating to market size and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data and estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

Overview



Our Mission

To bring hope with life-changing therapies to patients and families affected by rare diseases



Our Lead Asset

QLS-215, a potential best-in-class chronic treatment for hereditary angioedema to prevent debilitating and sometimes life-threatening attacks



Our Approach

Engineered a differentiated high affinity, long plasma half-life, humanized monoclonal antibody inhibitor of plasma kallikrein



Our Near-term Value Drivers

Opportunity for clinical proof of concept for differentiated product in Phase 1

Catabasis Acquired Quellis

Transaction Summary

- Catabasis Pharmaceuticals (Nasdaq: CATB) acquired Quellis Biosciences Inc. in January 2021
 - Quellis was a preclinical virtual biotech company focused on improving the lives of patients with hereditary angioedema
 - Catabasis is a publicly-traded biotech company with expertise in rare disease discovery and clinical development
- Concurrent PIPE financing of \$110M
 - The shares issued in the PIPE consist of convertible non-voting preferred stock
- Catabasis will seek stockholder approval of the conversion of the non-voting preferred stock into common stock
- On a post-conversion basis, common shares outstanding will be 109,494,006

Premier Investors and Alignment of Interest

- Combined company has an experienced management team, leading healthcare investors and financial resources to continue development of QLS-215, a compelling asset for the treatment of HAE
- Shareholders of the combined company include Perceptive Advisors, Fairmount Funds, RA Capital Management, Cormorant Asset Management, Venrock Healthcare Capital Partners, Logos Capital, Boxer Capital, Acorn Bioventures, Commodore Capital, Surveyor Capital (a Citadel company), Acuta Capital Partners, Sphera Healthcare, and Serrado Capital LLC




Use of Proceeds

- Company has approximately \$150 million in cash, cash equivalents and short-term investments
 - Proceeds expected to fund IND-enabling studies, Phase 1a, and Phase 1b/2 clinical trials for QLS-215 in HAE
 - Expected to support runway through 2023

Key Management and Board

- Combined company led by Catabasis Chief Executive Officer, Jill C. Milne, Ph.D.
- 6 Directors from Catabasis: Ken Bate (Chairperson), Joanne T. Beck, Ph.D., Hugh M. Cole, Michael D. Kishbauch, Gregg Lapointe and Jill Milne, Ph.D. and 2 Directors from Quellis: Jonathan Violin, Ph.D., a Quellis co-founder, and Fred Callori, a former Quellis Director

Hereditary Angioedema: A Rare, Potentially Life-Threatening Disease

| | |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Disease Description</p> | <ul style="list-style-type: none">• Hereditary angioedema (HAE) is a rare, autosomal dominant genetic disorder¹• HAE is characterized by recurrent, unpredictable, debilitating and potentially life-threatening edema:<ul style="list-style-type: none">○ Skin (hands, feet and face)○ Abdomen○ Throat/Airway² |
|  <p>Disease Pathways</p> | <ul style="list-style-type: none">• Types I & II comprise the majority of HAE cases and are caused by defects in the C1 inhibitor gene¹• While rare, other mutations, including in the F12 gene, can cause HAE• In HAE there is an overproduction of bradykinin, a key mediator of vasodilation and angioedema |
|  <p>Patient Demographics</p> | <ul style="list-style-type: none">• 1 in 10,000-50,000 people; <8,000 people in the US³• Typically diagnosed ~20 years of age by allergist/ Immunologist• Average age of onset 11 years⁴; estimated more than 8 years until definitive diagnosis⁵ |

1. Busse PJ, et al. J Allergy Clin Immunol Pract 2021; 9(1):132-150.e3.
2. Zuraw BL. Hereditary angioedema. N Engl J Med. 2008;359:1027-36.
3. Lumry WR. Front. Med., 16 Feb 2019. doi:10.3389/fmed.2018.00022.
4. Bork K, et al. Am J Med. 2006;119:267-274.
5. Zuraw B et al. B. J. Haem. 2016.173(6):831-843.

High Patient Burden: HAE Attacks are Unpredictable, Debilitating and Potentially Life-Threatening

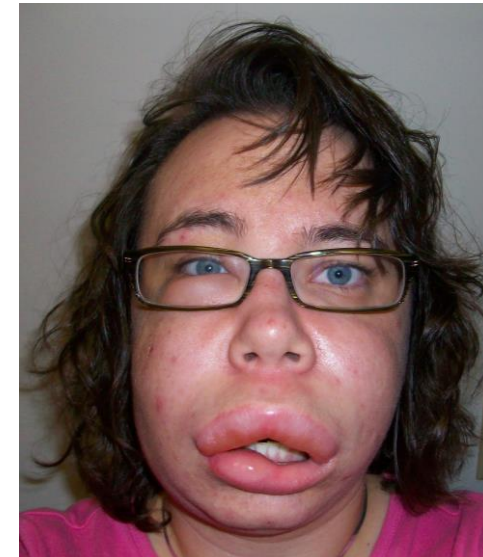
Patient journey

- Patients typically present with symptoms to PCP or ER
- Low disease awareness among ER physicians and PCPs, although improving, limits referrals to allergists and HAE specialists for diagnosis
- Once diagnosed, most patients are prescribed treatment



Common triggers include:

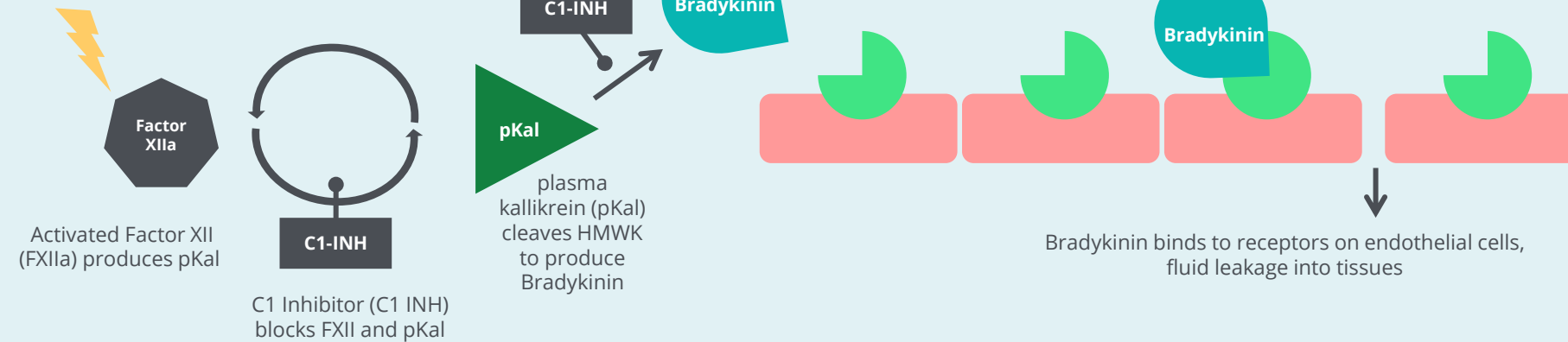
- Physical activity with repeated pressure, excessive exposure to sun, cold, water
- Illness, emotional stress, hormonal fluctuations
- Medical/dental work
- Certain medications, food sensitivities



Dysregulation of the Plasma Contact System Mediates Excessive Swelling Underlying HAE Symptoms

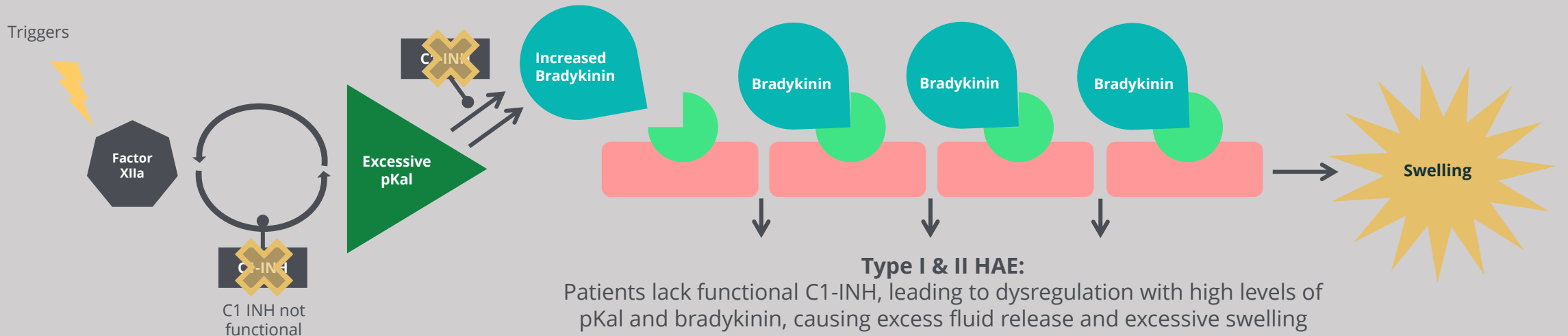
Contact System Healthy

Triggers (e.g., pressure, tissue stress and damage) activate Factor XII



Contact System HAE








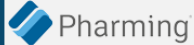
















Triggers



Treatment Landscape Has Advanced but Unmet Need Remains

Global market estimated to be >\$6.5B by 2025¹

Acute treatments to limit severity and duration of attacks as they occur

| Brand | Company | Mechanism of Action | Admin. | Dosing |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------|
|  C1 Esterase Inhibitor, Human |  Biotherapies for Life™ | Plasma derived C1 esterase inhibitor (pdC1-INH) |  | As needed |
|  (icatibant injection) |  | B2 bradykinin receptor antagonist (synthetic peptide) |  | As needed |
|  (conestat alfa) |  | Recombinant C1 esterase inhibitor (rhC1-INH) |  | As needed |
|  ecallantide |  | Kallikrein inhibitor |  | As needed (by HCP) |
|  C1 esterase inhibitor (human) |  | pdC1-INH |  | 2x/week |
|  C1 Esterase Inhibitor Subcutaneous (Human) |  Biotherapies for Life™ | pdC1-INH |  | 2x/week |
|  (lanadelumab-flyo) injection |  | Plasma kallikrein inhibitor (monoclonal antibody) |  | Every 2 weeks |
|  (berotralstat) capsules 150 mg |  | Plasma kallikrein antagonist |  | 1x/day |

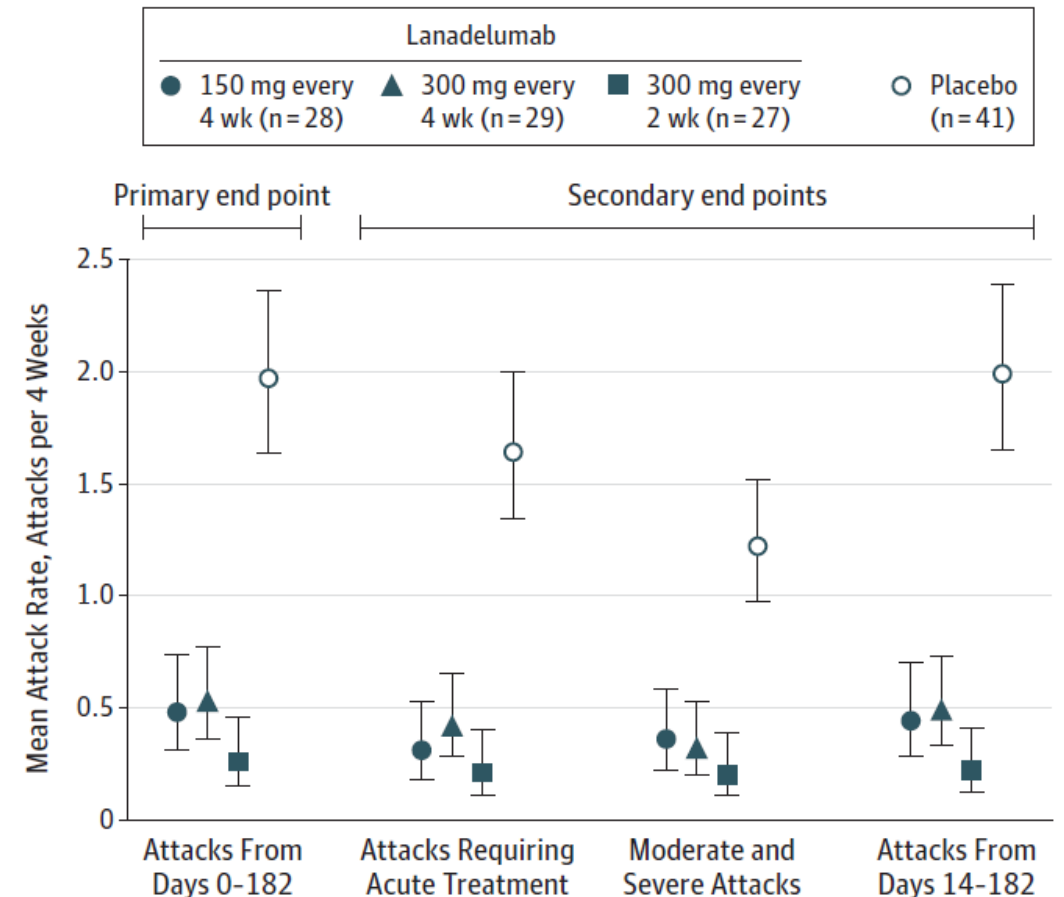
Prophylactic treatments to prevent attacks

Unmet need for prophylaxis that is more effective, less frequent, easier to administer

TAKHZYRO® (lanadelumab-flyo) Injection Studies Have Established Plasma Kallikrein mAb as an Important Therapy for HAE

Monoclonal antibody targeting pKal

- Prophylaxis to prevent HAE attacks in patients 12 years and older
- SC injection every 2 weeks. Dosing every 4 weeks may be considered in some patients.
- Most common AE in Phase 3 was injection site reaction (overall 52%)
- Shire acquired Dyax for \$5.9B after Phase 1b with lead program TAKHZYRO



Banerji, A., M.A. Riedl, et al. (2018) Effect of Lanadelumab Compared With Placebo on Prevention of Hereditary Angioedema Attacks: A Randomized Clinical Trial. JAMA 320(20):2108-2121.

<https://www.takhzyro.com/>

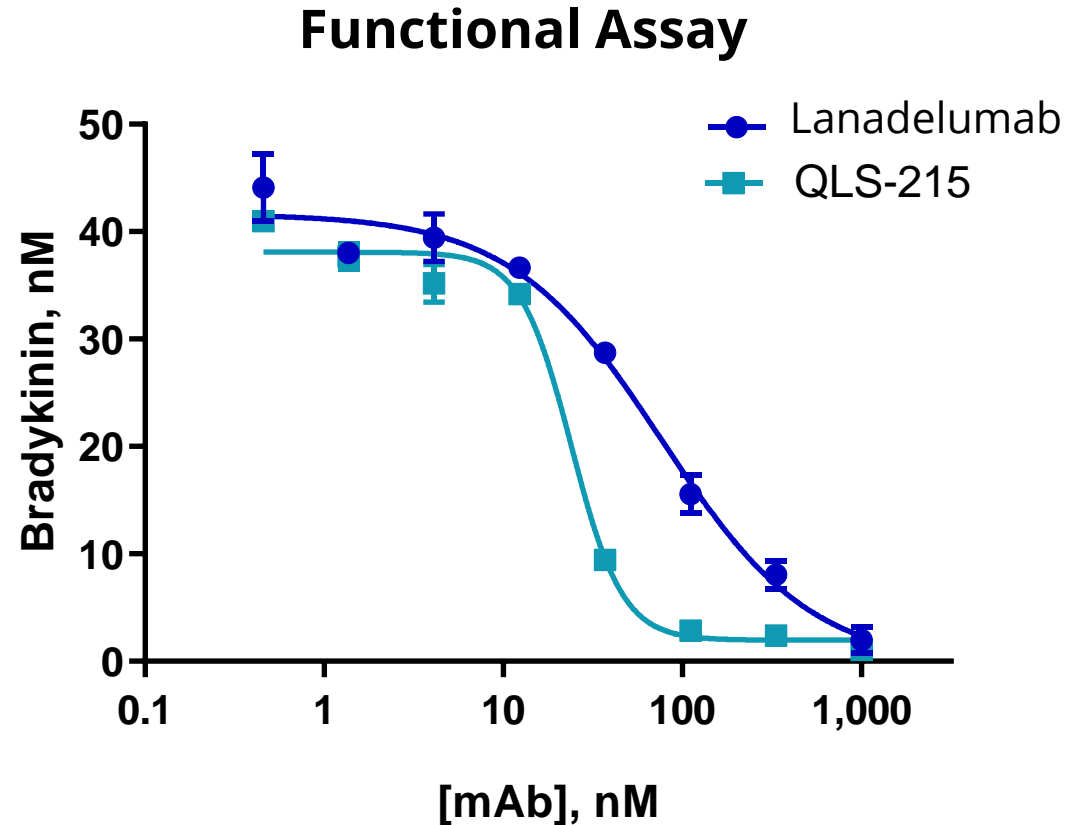
<https://www.prnewswire.com/news-releases/shire-to-acquire-dyax-corp-expanding-and-extending-industry-leading-hereditary-angioedema-hae-portfolio-539278541.html>

QLS-215 mAb: Opportunity for Best-in-Class Agent

Goal: Make the best possible pKal antibody to treat HAE with infrequent dosing and sustained blood levels

| QLS-215 Goals | Potential Benefits |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| High potency for pKal | <ul style="list-style-type: none">• Long duration without breakthrough attacks• Small injection volume |
| Extended plasma half-life | <ul style="list-style-type: none">• Infrequent dosing• Long duration without breakthrough attacks |
| Clinical proof of concept | <ul style="list-style-type: none">• Early in development, establish differentiated product profile |
| Differentiated, best-in-class new therapy for HAE prophylaxis | <ul style="list-style-type: none">• Trusted modality to provide patients with improved outcomes and quality of life |

In an *in vitro* Functional Assay QLS-215 Was More Potent than Lanadelumab in Inhibiting Bradykinin Production

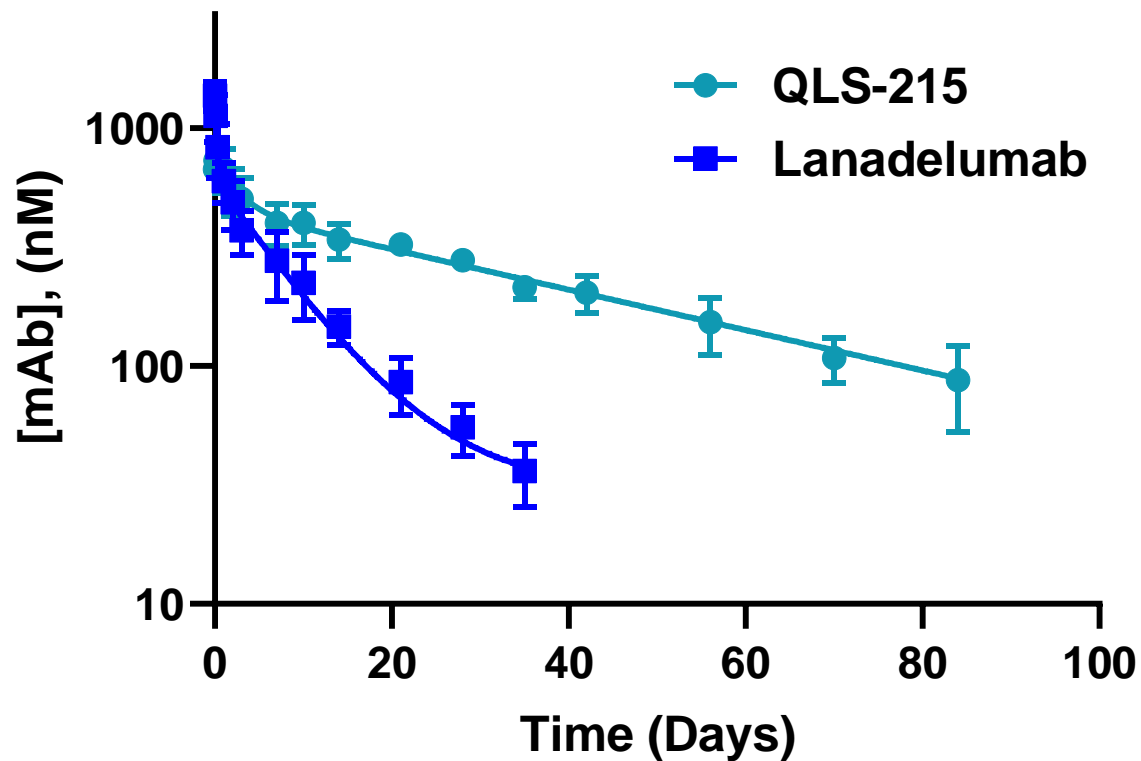


| | Lanadelumab | QLS-215 |
|----------------------------|-------------|---------|
| pKal IC ₉₀ (nM) | 300 | 30 |

- IC₉₀ determined by bradykinin ELISA to detect cleavage of high molecular weight kininogen (600 nM) by pKal (30 nM)

QLS-215 Has Shown Substantially Prolonged Plasma Half-Life Compared to Lanadelumab in Non-Human Primates

PK in Non-Human Primates

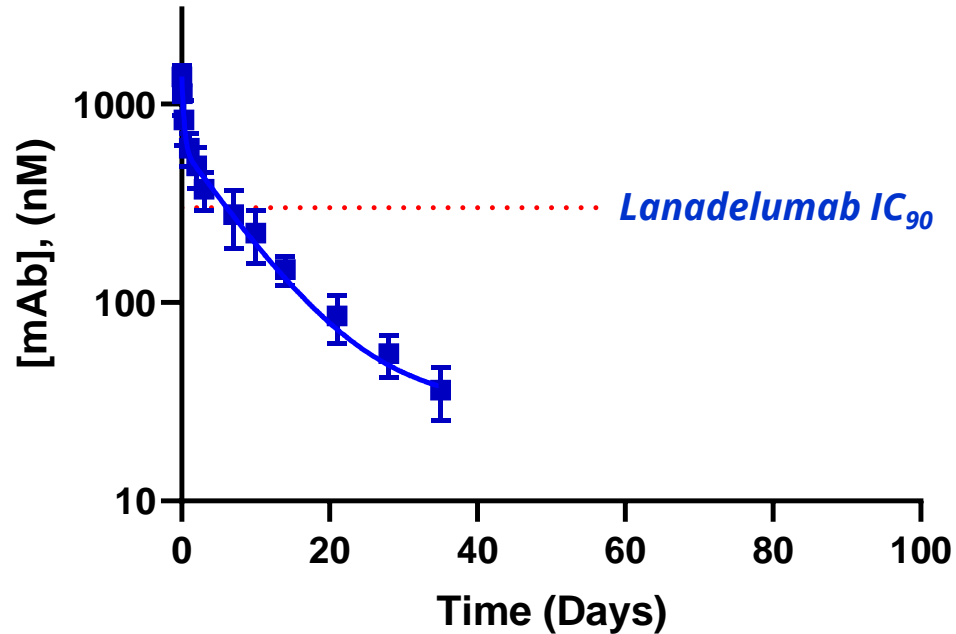


| | Lanadelumab | QLS-215 |
|-----------------------------------|-------------|------------|
| Mean half-life ($t_{1/2}$) (SD) | 10.5 (1.6) | 33.6 (8.3) |

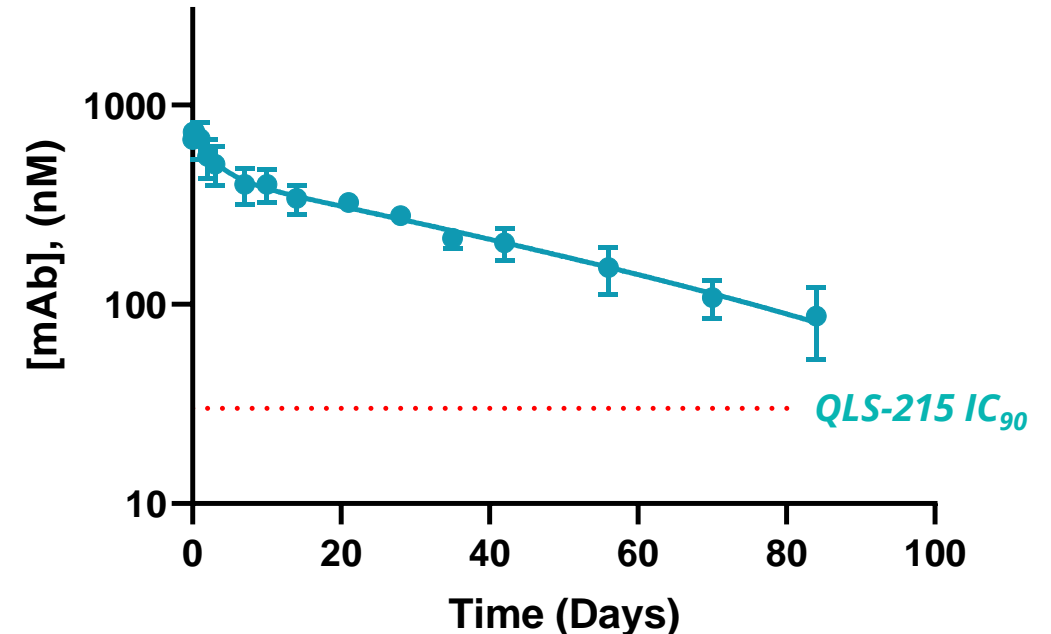
- FDA review documents: Lanadelumab $t_{1/2}$ 9.5-11.5 days in cynomolgus monkeys

The *in vitro* Potency and NHP PK Data for QLS-215 Predict a Substantially Longer Duration of Action than Lanadelumab

Lanadelumab

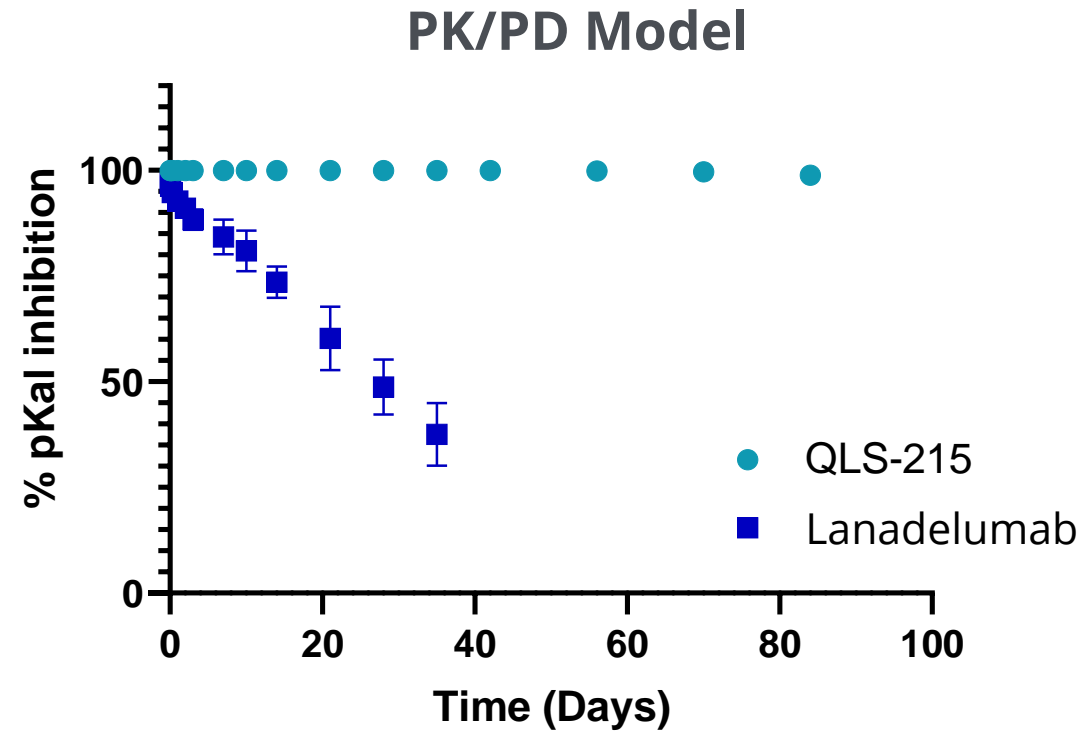


QLS-215



- Lanadelumab plasma levels fall below predicted minimum therapeutic concentration (IC90) by approximately **day 10**
- QLS-215 remains above predicted minimum therapeutic concentration (IC90) for **> 84 days**

PK/PD Model from Preclinical Studies Predicts Longer Duration of Action for QLS-215



- Model based on plasma concentrations from cynomolgus PK studies and pKal inhibition determined in *in vitro* functional assay

QLS-215 mAb Developed with the Desired Characteristics

Goal: Make the best possible pK_{1a} antibody to treat HAE with infrequent dosing and sustained blood levels

| QLS-215 Goals | Status |
|-----------------------------------|--------|
| High potency for pK _{1a} | ✓ |
| Extended plasma half-life in NHP | ✓ |
| Clinical proof of concept | |
| New therapy for HAE prophylaxis | |

Opportunity for Proof of Concept in Early Clinical Trials

Phase 1a Clinical Trial Design

- Subjects: Adult healthy volunteers
- Objectives: assess safety and PK
- Single escalating doses

Goals

- Demonstrate safety and prolonged half-life as proof of concept in humans
- Determine activity with an *ex vivo* functional PD assay

Phase 1b/2 Clinical Trial Design

- Subjects: Patients with Type I or II HAE
- Objectives: assess safety, PK and PD activity
- Multiple escalating doses

Goals

- Demonstrate safety and prolonged half-life as proof of concept in patients
- Determine activity with PD assessments

Estimated Timeline and Cash

- Cash, cash equivalents and short-term investments of approximately \$150M
- Expected cash runway through 2023

2021

QLS-215

- Conduct IND-enabling activities
- Initiate GMP manufacture
- Develop Phase 1a trial design
- Present preclinical data

Pipeline

- Advance undisclosed program
- Disclose rare disease program

2022

QLS-215

- Submit IND
- Initiate Phase 1a trial
- Initial Phase 1a results

Pipeline

- Conduct IND-enabling activities for rare disease program

2023

QLS-215

- Initiate Phase 1b/2 trial in HAE patients
- Initial Phase 1b/2 results

QLS-215 Opportunity



Treatment for rare, genetic disease with established clinical and regulatory path



Targeting a clinically validated mechanism with a trusted modality



Potential for best-in-class agent that provides greater efficacy and ease of use

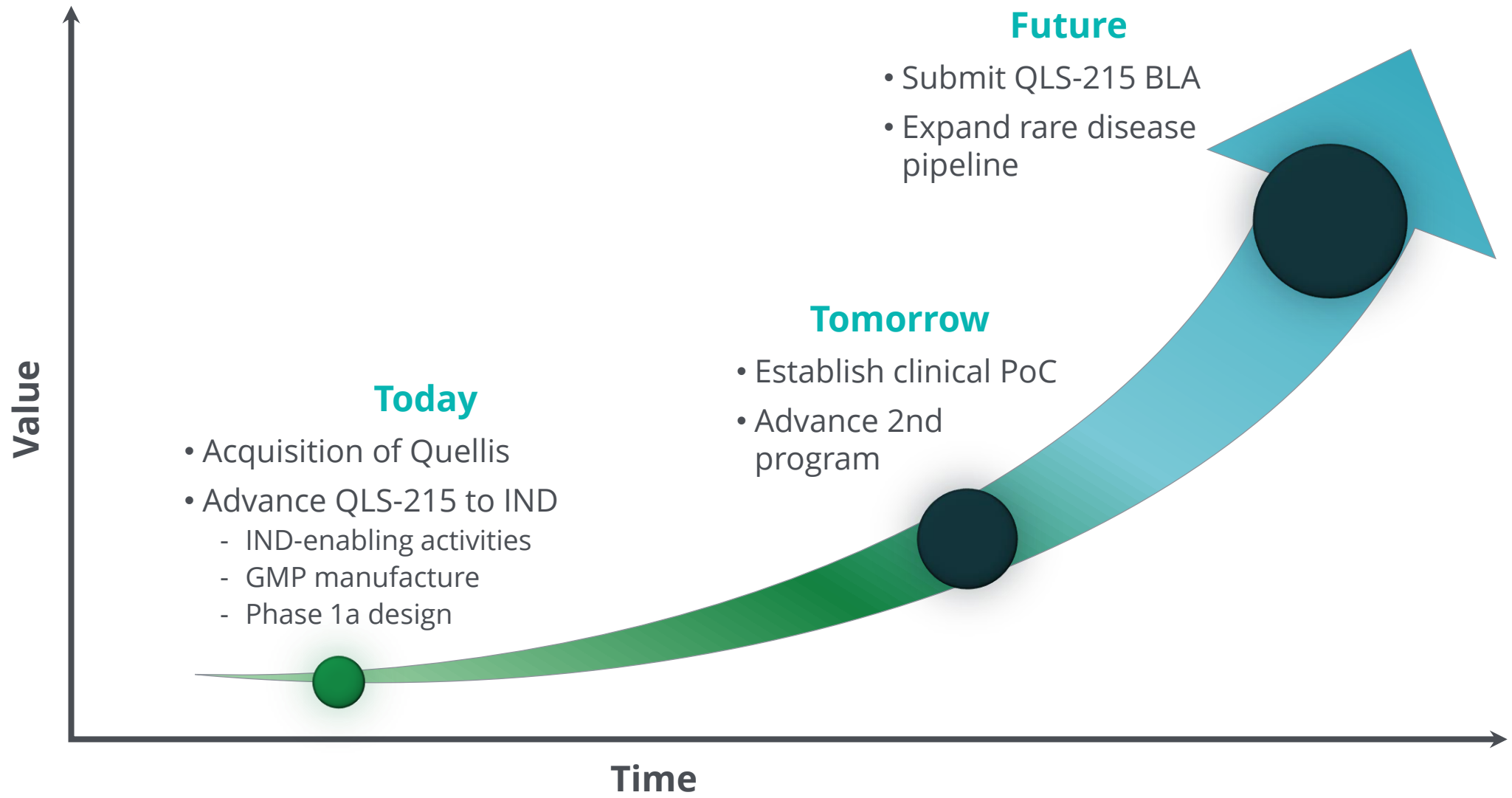


Candidate with differentiated preclinical profile in predictive models



Potential to demonstrate clinical proof of concept for product profile in Phase 1

Vision for Catabasis





catabasis.com