Corporate Presentation

November 2021

Forward Looking Statements

This presentation and various remarks we make during this presentation contain forward-looking statements of Astria Therapeutics, Inc. (“Astria,” the “Company,” “we”, “our” or “us”) within the meaning of applicable securities laws and regulations, including statements with respect to: our future expectations, the potential benefits of the merger between the Company and Quellis Biosciences, Inc. (the “Merger”); our cash runway; the potential timing for the filing of an IND for STAR-0215; the status and anticipated plans and timelines for the early stage clinical trials of STAR-0215, including the anticipated timing of the initial results from the Phase 1 clinical trial and that such results may establish clinical proof of concept for STAR-0215; the potential for STAR-0215 being the best-in-class and most patient friendly preventative treatment option for HAE, and its potential attributes and differentiated profile as a potential treatment option for HAE; the potential commercial opportunity for STAR-0215; advancing a second program; and the Company’s broader goal to meet the unmet needs of patients with rare and niche allergic and immunological diseases. We use words such as "aims," “anticipate,” “believe,” “estimate,” “expect,” "goals," “hope,” “intend,” “may,” "opportunity," “plan,” “predict,” “project,” “target,” “potential,” “would,” "vision," “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; changes in applicable laws or regulations; the possibility that we 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, and feedback received from, the U.S. FDA and other regulatory authorities, investigational review boards at clinical trial sites and other review bodies with respect to STAR-0215 and any other future development candidates; our ability to manufacture sufficient quantities of drug substance and drug product for STAR-0215 and any other future product candidates on a cost-effective and timely basis; our ability to obtain, maintain and enforce intellectual property rights for STAR-0215 and any other future product candidates; our potential dependence on collaboration partners; competition with respect to STAR-0215 or any of our other future product candidates; the risk that survey results and market research may not be accurate predictors of the commercial landscape for HAE and the anticipated position of STAR-0215 in HAE based on its pre-clinical profile; 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; the risks and uncertainties related to our ability to recognize the benefits of any additional acquisitions, licenses or similar transactions; and general economic and market conditions; as well as the risks and uncertainties discussed in the “Risk Factors” section of our Annual Report on Form 10-K for the period ended December 31, 2020, subsequent Quarterly Reports on Form 10-Q, and in other filings that we may make with the Securities and Exchange Commission. These forward-looking statements should not be relied upon as representing our 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.

Introducing Astria Therapeutics

Our **mission** is to bring hope with life-changing therapies to patients and families affected by rare and niche allergic and immunological diseases.

astria™
THERAPEUTICS

Our **name** comes from the Greek word for star, and at Astria, patients are the stars that guide us. Their stories inspire us, their successes energize us, and their challenges give us purpose.

Our **stars** illuminate our work, creating an environment of transparency and openness that allows us to build trust with our partners and collaborators.

Investment Highlights

1	Astria is developing differentiated therapeutics for patients with rare and niche allergic and immunological diseases
2	Our lead program, **STAR-0215**, is a monoclonal antibody inhibitor of plasma kallikrein for the preventative treatment of Hereditary Angioedema (HAE) • Clinically validated mechanism with potential to be the most patient-friendly preventative therapy for HAE • On track for STAR-0215 IND filing in mid-2022 and key initial proof of concept clinical data by year end 2022
3	Evaluating opportunities to expand our pipeline in allergic and immunological diseases
4	Experienced management team and Board backed by leading life science investors including top shareholders Perceptive, RA Capital, Fairmount, Cormorant and Venrock
5	Cash and cash equivalents of $131.8M[1] with expected cash runway through 2023 based on current operating plan
6	18.3M total common shares outstanding (common shares and Series X Preferred) on an as-converted basis

1. As of 9/30/2021

STAR-0215: Our Lead Asset

OUR LEAD ASSET

STAR-0215 (formerly QLS-215): potential to be most patient-friendly preventative treatment option for HAE

OUR APPROACH

Developing **STAR-0215** to be a long-acting monoclonal antibody inhibitor of plasma kallikrein dosed once every 3 months or longer

OUR NEAR-TERM VALUE DRIVERS

Opportunity for clinical proof of concept for differentiated product in Phase 1 with initial results anticipated by year end 2022

Hereditary Angioedema:
A Rare, Disfiguring, and Potentially Life-Threatening Disease

DISEASE DESCRIPTION

- Hereditary angioedema (HAE) is a rare, autosomal dominant genetic disorder[1]
- HAE is characterized by severe, unpredictable, painful, and sometimes life-threatening edema[2]:
  - Skin (hands, feet and face)
  - Abdomen
  - Throat/Airway

DISEASE PATHWAYS

- In HAE overproduction of bradykinin is the key mediator of vasodilation and angioedema
- Types I & II comprise the majority of HAE cases and are caused by defects in the C1 inhibitor gene[1]
- While rare, other mutations, including in the F12 gene, can cause HAE

PATIENT DEMOGRAPHICS

- 1 in 10,000-50,000 people; <8,000 people in the US[1,3]
- Typically diagnosed ~20 years of age by allergist/immunologist
- Average age of onset 11 years[4]; estimated more than 8 years until definitive diagnosis[5]

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

High Patient Burden

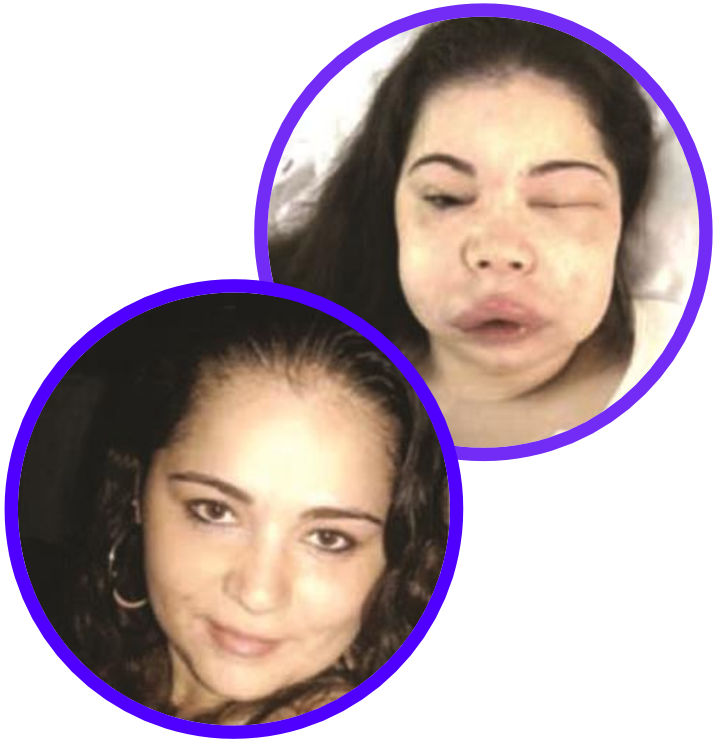
HAE Attacks are Unpredictable, Painful and Can Be Life-Threatening

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

Patient Burden

- Anxiety and depression increase with attack frequency
- Increased work absenteeism and reduced productivity
- Negative impact on patients' daily lives
- Substantial room exists for improving patient care



1. Images obtained from www.haeimages.com
2. https://www.healthline.com/health/hereditary-angioedema/monitoring-triggers#What-triggers-HAE-attacks?
3. Banerji A, et al. Ann Allergy Asthma Immunol. 2020; 124: 600-607. doi: 10.1016/j.anai.2020.02.018

Unmet Need for Effective Preventative Therapy with Lower Treatment Burden

HAE Preventative Treatment Landscape Has Advanced but Unmet Need Remains

Product	Mechanism of Action	Administration	Mean Attack Reduction[1]	% of Attack- Free Patients
CINRYZE	Plasma derived C1-INH	2x/week	52%	40% (16 weeks)[2]
HAEGARDA	Plasma derived C1-INH	2x/week	88%	18% (12 weeks)[3]
TAKHZYRO *(lanadelumab)*	Plasma kallikrein inhibitor	1-2x/month	73-87%	31-44% (26 weeks)[4]
ORLADEYO *(berotralstat)*	Plasma kallikrein inhibitor	1x/day	30-44%	2-8% (24 weeks)[5]

Global market estimated to grow from $2B in 2020 to over $4.5B by 2026[6]

I am always looking for something better, something that fits my schedule. I mainly care about dosing and effectiveness.

– HAE Patient[7]

I would really like something subcutaneous that's given less frequently, maybe once every two or three months, just four or six injections per year. Once it's in, you don't have to worry about missed doses; you can go about your daily life with minimal intrusion from the disease process and burden of treatment.

– HAE Prescriber[8]

1. Efficacy quoted as reduction in mean attack rate vs placebo; data from respective products' Prescribing Information.
2. CINRYZE Prescribing Information, 2021.
3. HAEGARDA Prescribing Information, 2020.
4. TAKHZYRO Prescribing Information, 2018.
5. Center for Drug Evaluation and Research. NDA/BLA Multidisciplinary Review and Evaluation NDA 214094. Washington DC: CDER (US); 2020.
6. Cortellis, HealthAdvances, EvaluatePharma, and Company research and analysis
7. Company market research with HAE patients.
8. Company market research with HAE prescribers.

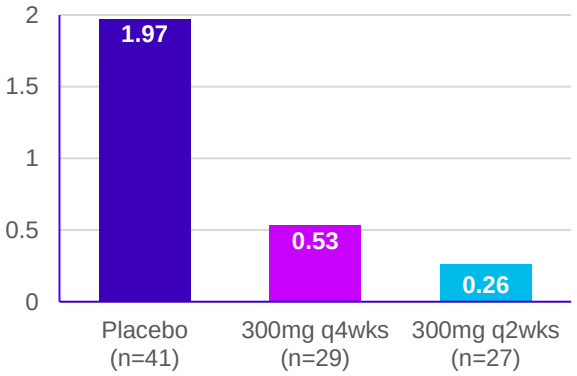
Inhibition of Plasma Kallikrein is a Validated Therapeutic Approach for HAE

TAKHZYRO® (lanadelumab-flyo)
is a plasma kallikrein mAb approved for prevention of HAE attacks[1]

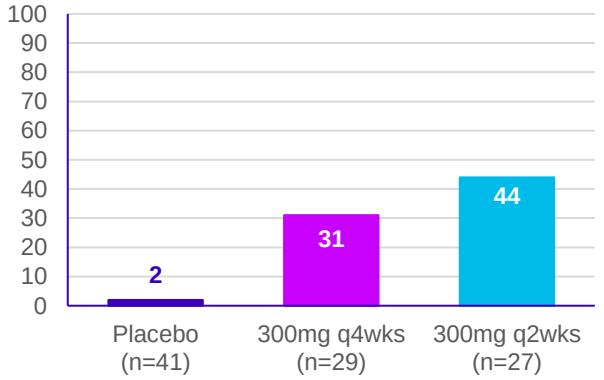
TAKHZYRO

- Current U.S. market leader [2]
- Sales projected to approach $1B in 2021[3]
- Shire acquired Dyax for $5.9B after Phase 1b with lead program TAKHZYRO[4]

Mean Monthly attack rate



% of attack-free patients[1]
(for 26 weeks)



- **Indicated for dosing every 2 weeks; every 4 weeks may be considered in some patients**
- **56-69% of patients experienced attacks on TAKHZYRO[1]**

1. TAKHZYRO Prescribing Information, 2018.
2. Takeda. FY2021 Q1 Earnings Announcement. 2021, Jul; 32.
3. Takeda. Quarterly Financial Report. 2021, Jun; 54.
4. Shire plc and Dyax Corp. Press Release. 2015, Nov.

STAR-0215's Target Efficacy and Dosing Has Potential to Address Unmet Need

Published findings highlight unmet need for improved HAE treatments[1,2]

Our Findings:

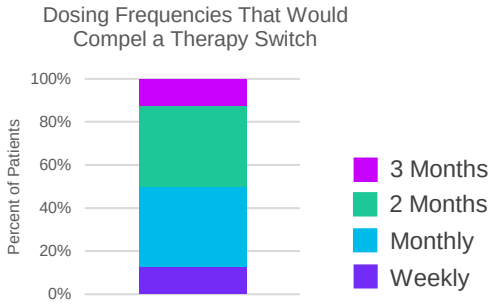
HAE Patients

- On average, patients had tried 2-3 preventative treatments, most often switching for more convenient administration
- All patients interviewed would be compelled to switch from their current therapy if a new therapy offered similar efficacy with less frequent dosing

NORD National Organization for Rare Disorders — **Patient Interview Results presented at the 2021 NORD Virtual Summit**

HAE Treaters

- Clinicians reported that 65-75% of their HAE patients are "moderate" or "severe" and are prescribed preventative therapy
- Many clinicians considered STAR-0215's profile as the next generation of HAE treatment and most would discuss it with all of their HAE patients



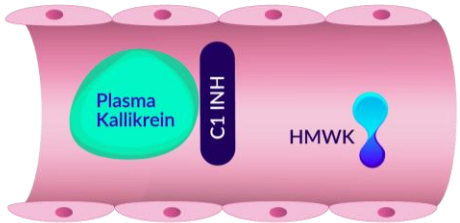
"[if this were available], this would be my first choice. I've looked through all the products [in development], this is the first one which is really exciting. This is a generation leap; anybody who is on medication now either daily, every three days, or every two or four weeks, why wouldn't they want to do this?".

– HAE Prescriber[4]

1. Banerji A, et al. Ann Allergy Asthma Immunol. 2020; 124: 600-607. doi: 10.1016/j.anai.2020.02.018.
2. Riedl MA., et al. Ann Allergy Asthma Immunol. 2021; 126: 264-272. doi: 10.1016/j.anai.2020.10.009.

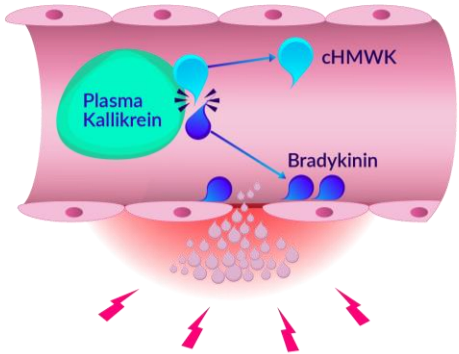
STAR-0215 Aims to Prevent Attacks in HAE

Healthy Blood Vessel



C1 Inhibitor blocks function of plasma kallikrein.

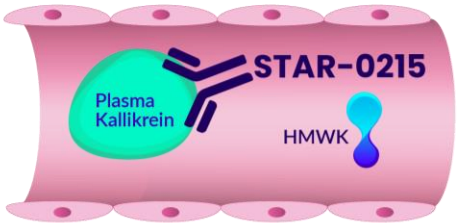
HAE Mechanism of Disease



Missing C1 Inhibitor allows plasma kallikrein to process HMWK, generating cleaved HMWK (cHMWK) and releasing bradykinin.

Bradykinin then binds to receptors allowing fluid to leak through blood vessel walls and causing edema/pain.

STAR-0215 Goal



STAR-0215 inhibits/blocks plasma kallikrein, even in the absence of C1 Inhibitor, reducing bradykinin production and preventing edema/pain.

STAR-0215

Opportunity for Most Patient-Friendly Preventative Treatment Option

STAR-0215 Goals	Potential Benefits	Status
High potency for plasma kallikrein	• Long duration without breakthrough attacks • Small injection volume	✓
Extended plasma half-life	• Infrequent dosing once every 3 months or longer, without breakthrough attacks	✓
Clinical proof of concept	• Establish differentiated product profile	Initial results expected by year end 2022
Differentiated, best-in-class new preventative therapy for HAE	• Trusted modality to provide patients with improved quality of life	

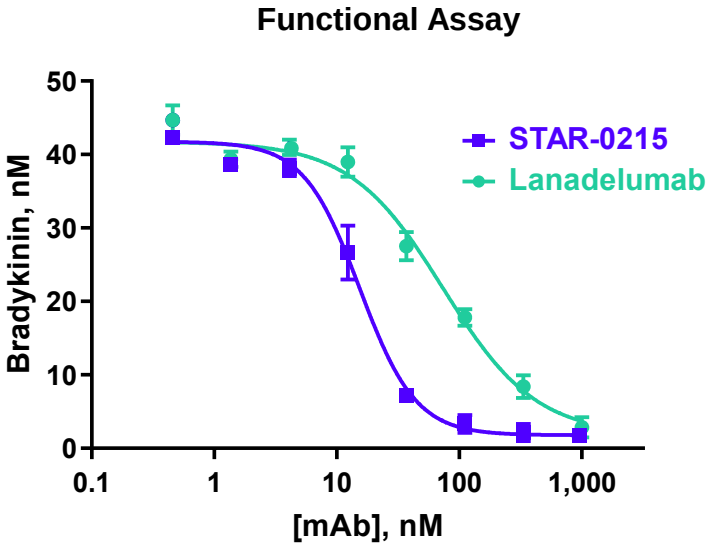
- Binding affinity and half-life are key drivers of efficacy in the prevention of HAE attacks[1]
- Target inhibition impacts clinical outcomes in HAE[2]

Potential for most patient-friendly preventative treatment option based on data generated to date and the existing HAE treatment landscape

1. Narayanan R, et al. J Allergy Clin Immunol. 2020; 45(2): AB105
2. Wang Y, et al. Clin Transl Sci. 2020; 13: 1208-1216

STAR-0215 Shows High Potency Inhibition of Plasma Kallikrein

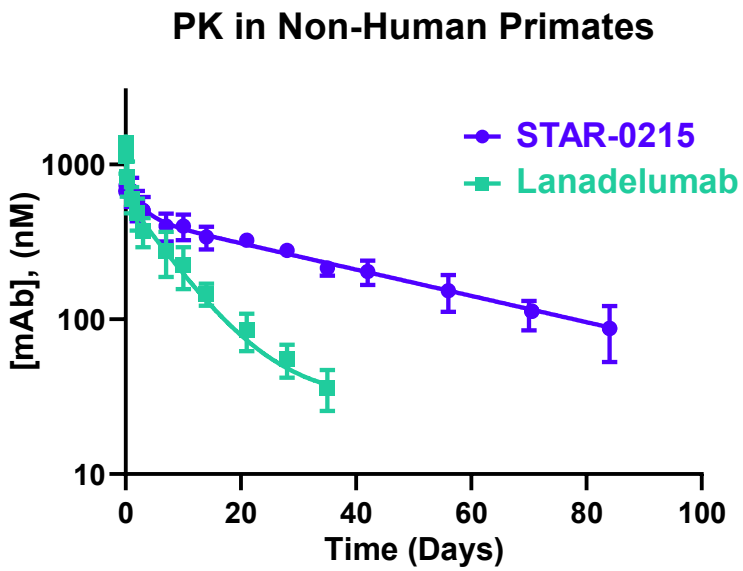
- **STAR-0215** binding affinity for plasma kallikrein is ~10-fold greater than lanadelumab
- **STAR-0215** binds a different site on plasma kallikrein than lanadelumab
- **STAR-0215** is ~10-fold more potent at inhibiting enzymatic activity by 90% than lanadelumab
  - ~90% inhibition of plasma kallikrein is estimated to be required to optimally reduce HAE attack rate and maximize attack free duration



STAR-0215 was more potent than lanadelumab in inhibiting bradykinin production in an *in vitro* assay

1. IC90 determined by bradykinin ELISA to detect cleavage of high molecular weight kininogen (600 nM) by plasma kallikrein (30 nM)
2. Plasma kallikrein levels 30-110nM estimated in HAE plasma (Kenniston et al JBC 2014)
3. Data presented at the 2021 ACAAI Scientific Meeting

STAR-0215 Has Shown Substantially Prolonged Plasma Half-Life Compared to Lanadelumab in Non-Human Primates



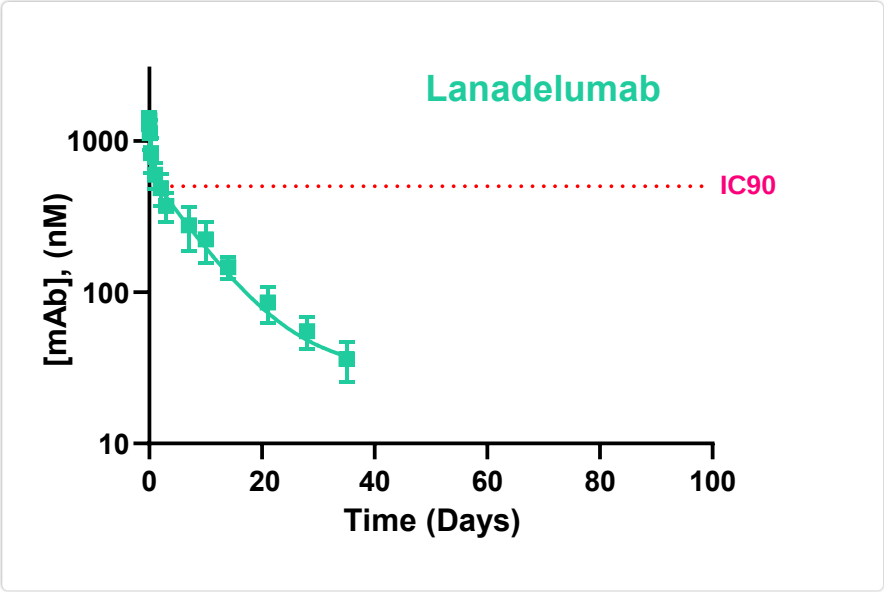
STAR-0125 engineered with YTE half-life extension technology

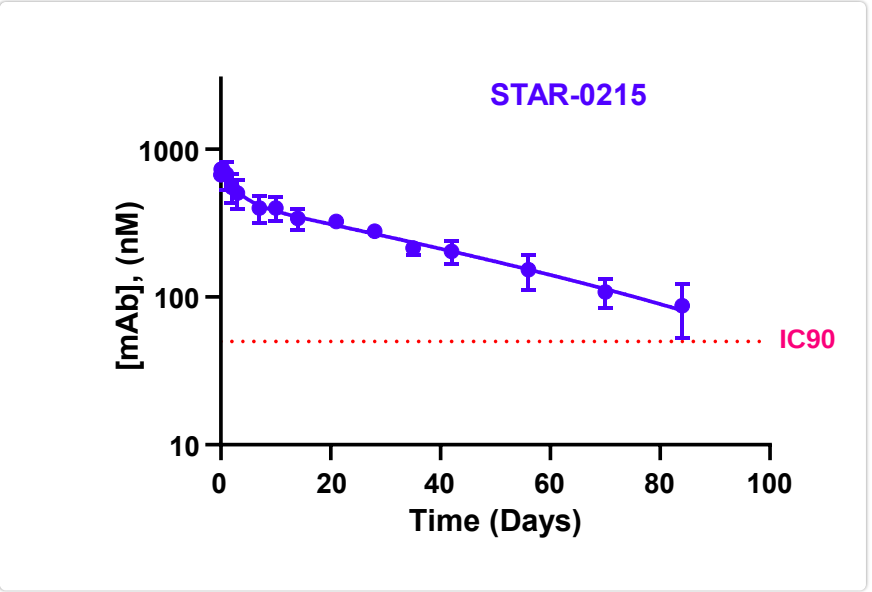
- Enhanced FcRn binding translated to a more than three-fold increase in plasma half-life with STAR-0215 compared to an antibody without YTE modifications
- Half-life of mAbs with similar half-life extension technology
  - Non-human primates: 20 – 40 days
  - Humans: 70 – 120 days

	Lanadelumab	STAR-0215
Mean non-human primate half-life in days (SD)	10.5 (1.6)	33.6 (8.3)

1. Data from concurrent but independent experiments in cynomolgus monkeys dosed at 5 mg/kg, iv
2. Lanadelumab data are representative of 3 independent experiments that all showed $t_{1/2}$ ~10 days
3. Data presented at the 2021 ACAAI Scientific Meeting

The Human *in vitro* Potency and NHP PK Data for STAR-0215 Predict a Substantially Longer Duration of Action than Lanadelumab

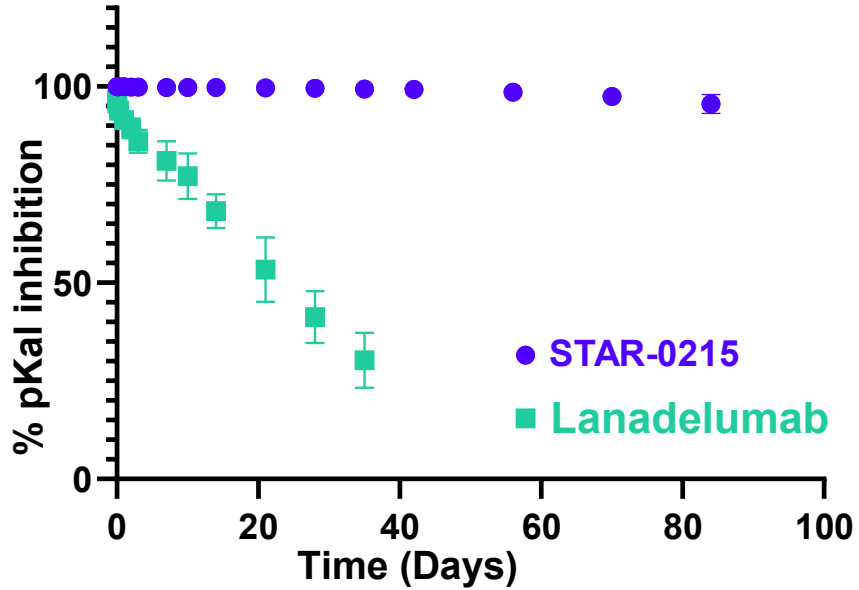




- Lanadelumab plasma levels fall below predicted minimum therapeutic concentration (IC90) by approximately **day 10**
- **STAR-0215** remains above predicted minimum therapeutic concentration (IC90) for **> 84 days**

1. IC90 from inhibition of cleavage of 600 nM HMWK with 30 nM plasma kallikrein
2. Data presented at the 2021 ACAAI Scientific Meeting

Preclinical PK/PD Model Predicts Longer Duration of Action for STAR-0215



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

1. Data presented at the 2021 ACAAI Scientific Meeting

Planned STAR-0215 Phase 1 Study Design

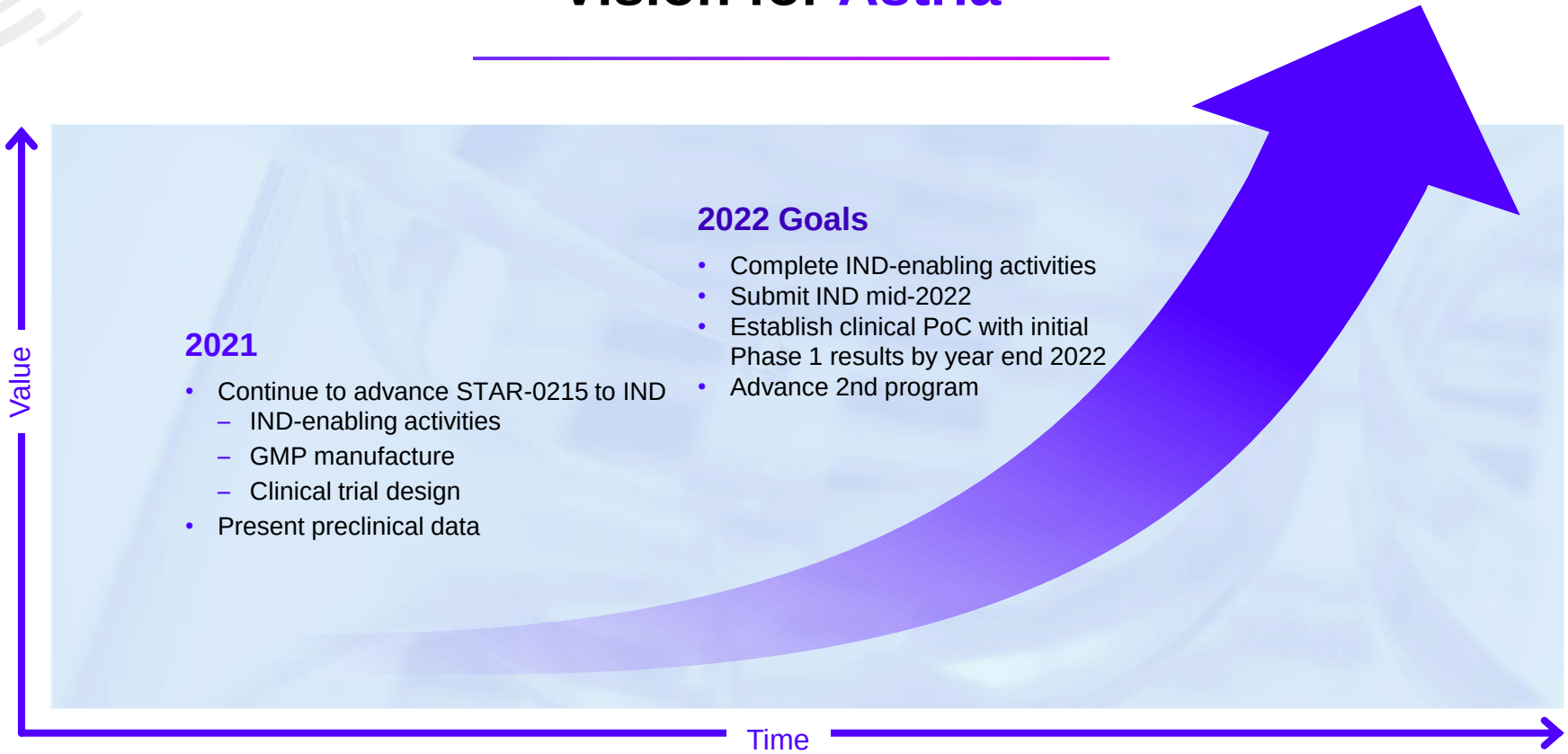
On Track for Initial Proof of Concept Data YE 2022

Goals for initial Proof of Concept trial:

- Demonstrate safety
- Establish prolonged half-life
- Demonstrate prolonged inhibition of plasma kallikrein activity
- Refine dose and dosing regimen for future studies in HAE patients

- **Population:**
  - Normal Healthy Volunteers (NHVs)
- **Study Design:**
  - Single ascending dose in NHV cohorts
  - Multiple doses to be explored
- **Endpoints:**
  - Safety and tolerability
  - Pharmacokinetics – antibody half-life
  - Pharmacodynamics – inhibition of plasma kallikrein

Vision for Astria



2021

- Continue to advance STAR-0215 to IND
  - IND-enabling activities
  - GMP manufacture
  - Clinical trial design
- Present preclinical data

2022 Goals

- Complete IND-enabling activities
- Submit IND mid-2022
- Establish clinical PoC with initial Phase 1 results by year end 2022
- Advance 2nd program

STAR-0215 Opportunity

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

Targeting a clinically validated mechanism with a trusted modality

Potential for most patient-friendly preventative treatment that provides long-acting protection from attacks with dosing every 3 months or longer

Opportunity for clinical proof of concept with Phase 1 with initial results anticipated by year end 2022

At Astria, with patients as our guiding stars, our dedicated and passionate team is devoted to bringing life-changing therapies to patients and families impacted by HAE

Astria (Nasdaq ATXS) Well-Positioned for the Future

SUMMARY OF TRANSACTIONS

- Acquired Quellis Biosciences, Inc. in January 2021
- Concurrent PIPE financing of $110M
- PIPE investors included 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

STRONG FINANCIAL FOUNDATION

- As of 9/30/2021, the Company had cash and cash equivalents of $131.8M with expected cash runway through 2023 based on current operating plan

CAPITALIZATION STRUCTURE

Company Capitalization Structure As of September 30, 2021	Converted Common Shares
Common stock outstanding	13,009,477
Common stock underlying outstanding Series X Preferred Stock	5,242,501
Adjusted Common stock outstanding[(1)]	18,251,978

1. Assumes 100% conversion of all outstanding Series X Preferred Stock.


astria
THERAPEUTICS