



# Astria Corporate Presentation

August 2024

# Forward Looking Statements

This presentation contains forward-looking statements within the meaning of applicable securities laws and regulations including, but not limited to, statements regarding: our expectations of the potential significance of the initial results from the Phase 1b/2 ALPHA-STAR clinical trial of navenibart, and that the results from such trial will allow us to advance navenibart into Phase 3 development as a potential treatment for HAE; the expected timing of the release of additional data from the ALPHA-STAR trial; the expected timing of initiation and receipt of topline results from the planned navenibart Phase 3 program; the expected timing of release of initial safety and efficacy data from the ALPHA-SOLAR trial; our goal of developing two dosing options for navenibart; the potential for navenibart in the HAE market, including to potential to be the market leader, the first choice therapy, and to have the best-in-class profile in HAE, the potential therapeutic benefits of navenibart as a treatment for HAE and our vision and goals for the program; our belief that the YpsoMate autoinjector option is a great choice for navenibart, along with the reasons therefore; the potential for STAR-0310 to have the best-in-class OX40 inhibitor profile for the treatment of AD and other diseases, and the potential therapeutic benefits and potential attributes of STAR-0310 as a treatment for AD; expectations regarding the timing of regulatory filings for STAR-0310; expectations regarding the timing of initiation and planned design of clinical trials for STAR-0310; expectations regarding the timing and nature of anticipated data for planned trials of STAR-0310; our goals and vision for STAR-0310, including its potential development for additional indications; anticipated cash runway; and the goal of bringing life changing therapies to patients and families affected by allergic and immunological diseases and to become a leading allergy and immunology company. The use of words such as, but not limited to, “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “goals,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” “would,” or “vision,” and similar words expressions are intended to identify forward-looking statements. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on Astria’s current beliefs, expectations and assumptions regarding the future of its business, future plans and strategies, future financial performance, results of pre-clinical and clinical results of the Astria’s product candidates and other future conditions. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including the following risks and uncertainties: changes in applicable laws or regulations; the possibility that we may be adversely affected by other economic, business, and/or competitive factors; 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 preclinical studies, including of navenibart and STAR-0310, may not be replicated in clinical trials, that the preliminary or interim results from clinical trials may not be indicative of the final results, that the results of early stage clinical trials, such as the results from the navenibart Phase 1a clinical trial and the initial results from the ALPHA-STAR trial, may not be replicated in later stage clinical trials of navenibart, including additional and final results from the ALPHA-STAR trial or the planned Phase 3 development program, 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. Food and Drug Administration and other regulatory authorities on our regulatory and clinical trial submissions and other feedback from potential clinical trial sites, including investigational review boards at such sites, and other review bodies with respect to navenibart, STAR-0310, and any other future development candidates, and devices for such product candidates; our ability to manufacture sufficient quantities of drug substance and drug product for navenibart, STAR-0310, and any other future product candidates, and devices for such product candidates, on a cost-effective and timely basis, and to develop dosages and formulation for navenibart, STAR-0310, and any other future product candidates that are patient-friendly and competitive; our ability to develop biomarker and other assays, along with the testing protocols therefore; our ability to obtain, maintain and enforce intellectual property rights for navenibart, STAR-0310, and any other future product candidates; our potential dependence on collaboration partners; competition with respect to navenibart, STAR-0310, 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, the ability of navenibart to compete in HAE and the anticipated position and attributes of navenibart in HAE based on clinical data to date, its preclinical profile, pharmacokinetic modeling, market research and other data; risks with respect to the ability of STAR-0310 to compete in AD and the anticipated position and attributes of STAR-0310 in AD based on its preclinical 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, 2023 and in other filings that we may make with the Securities and Exchange Commission.

New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Astria may not actually achieve the forecasts or expectations disclosed in our forward-looking statements, and investors and potential investors should not place undue reliance on Astria’s forward-looking statements. Neither Astria, nor its affiliates, advisors or representatives, undertake any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law. These forward-looking statements should not be relied upon as representing Astria’s views as of any date subsequent to the date hereof.

# Investment Highlights



Astria (Nasdaq: ATXS) is developing first-choice therapeutics for patients with allergic and immunological diseases



Our lead program, **navenibart (STAR-0215)**, is a monoclonal antibody inhibitor of plasma kallikrein for the preventative treatment of Hereditary Angioedema (HAE)

- Navenibart has shown proof of concept as a **Q3M and Q6M treatment**, with a 90-96% reduction in monthly attack rate when dosed once or twice over six months, and favorable safety and tolerability profile
- Additional Phase 1b/2 data anticipated in Q4 2024, **Phase 3 trial expected to initiate Q1 2025**



Our second program, **STAR-0310**, is a potential **best-in-class OX40 program for AD** with the goal to expand into additional indications. Anticipate **IND submission by YE 2024** and **Phase 1a initiation Q1 2025**



Cash and cash equivalents of \$354.7 million as of June 30, 2024, expected **cash runway into mid-2027** based on current operating plan<sup>1</sup>

# Hereditary Angioedema (HAE): A Rare, Disfiguring, and Potentially Life-Threatening Disease



Rare genetic disorder characterized by severe, unpredictable, sometimes **life-threatening** swelling<sup>1</sup>



Affects **<8,000 in the U.S. and <15,000 in Europe**,<sup>2,3,4</sup>  
average age of onset is 11 years old<sup>5</sup>

“

[During a laryngeal attack] it starts to be difficult to swallow and then your voice changes, and then you have to make the decision- am I going to go to the hospital? Because certainly [doctors] would say you should- because you never know if the rescue medication is going to work. ”

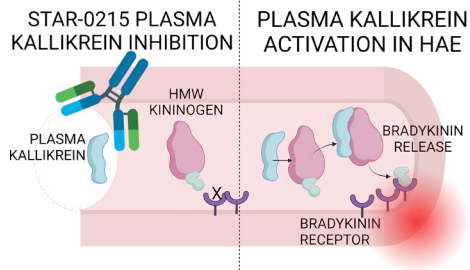
”

# Navenibart

## Potential First-Choice Preventative Treatment in HAE

### Validated Mechanism

Inhibition of plasma kallikrein leverages the same mechanism as market leader TAKHZYRO® (lanadelumab)



### Goal: Reduce Disease and Treatment Burden to Normalize Lives

- Current treatments have high burden of administration or limited efficacy

### Differentiated profile

- YTE extended half-life supports Q3 and Q6 month dosing
- Citrate-free to reduce pain
- Trusted "non genetically modified" modality

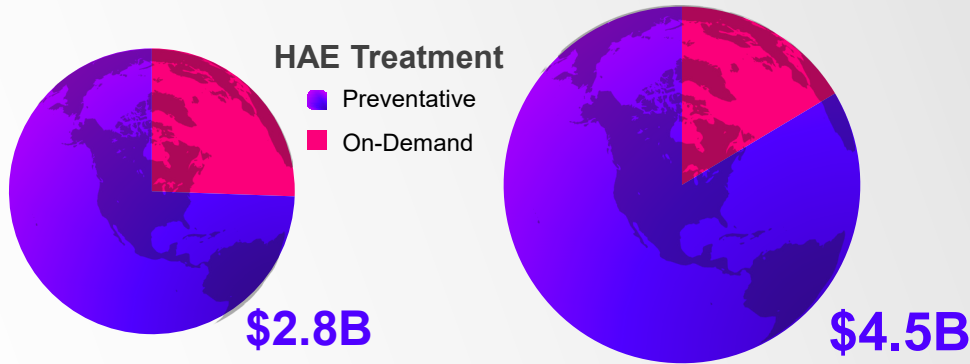
### Positive Proof-of-Concept Results in HAE Patients

- Support rapid, robust, and durable efficacy and the potential for dosing only 2 or 4 times per year

# Opportunity for Navenibart to Lead the Market

## 2023 HAE Market<sup>1</sup>

## 2027 Estimated HAE Market<sup>1,2</sup>



**Navenibart well-positioned to become the only therapy to achieve:**

- **Strong efficacy**
- **Rapid onset of action**
- **Trusted mechanism and modality**
- **Low treatment burden with administration 2 or 4x per year**
- **Low risk for injection pain**

**The HAE market is expected to grow substantially by 2027,<sup>1,2</sup> driven by:**

- Patients being diagnosed earlier<sup>3</sup>
- More patients taking preventative treatments<sup>4</sup>
- Geographic expansion for currently available therapies<sup>5</sup>

**MARKET RESEARCH WITH HAE PATIENTS INDICATES MARKET SHARE WILL COME FROM ALL TREATMENT GROUPS**



Injectables



Orals



On-Demand Only

1. Company-reported sales (Takeda, CSL Behring, Pharming, BioCryst)

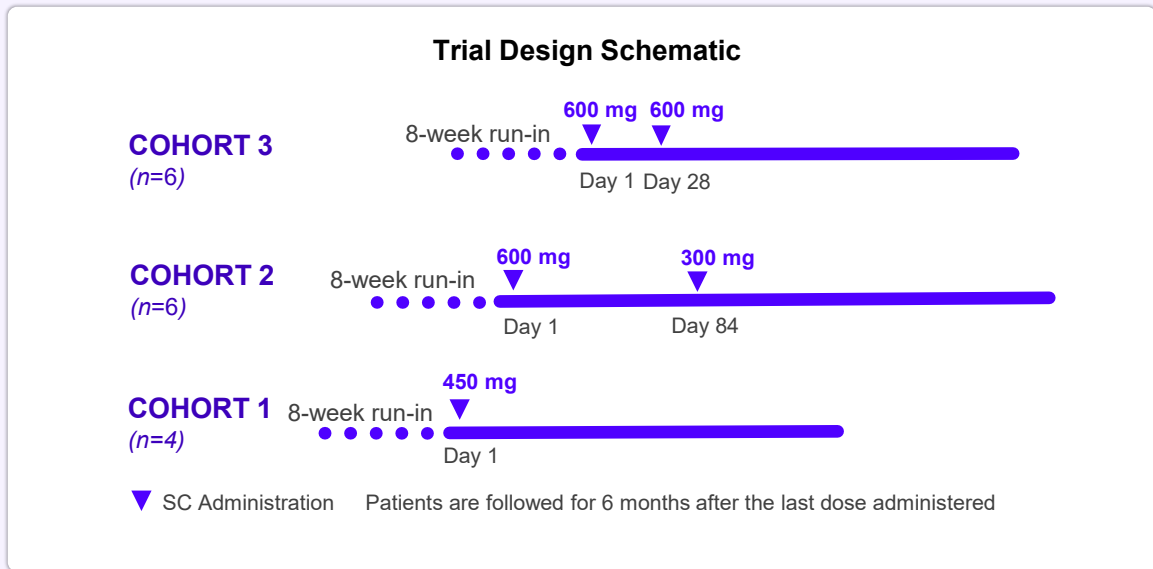
2. Analyst consensus forecasts compiled by Clarivate's Cortellis, Astria company research and analysis.

3. Zanichelli A. Clin Transl Allergy. 2018; doi: 10.1186/s13601-018-0229-4

4. Astria company research and analysis

5. Company-reported expectations (Takeda, CSL Behring, BioCryst)

# ALPHA-STAR Phase 1b/2 Initial Proof-of-Concept Results Include up to 6 Months of Follow-Up

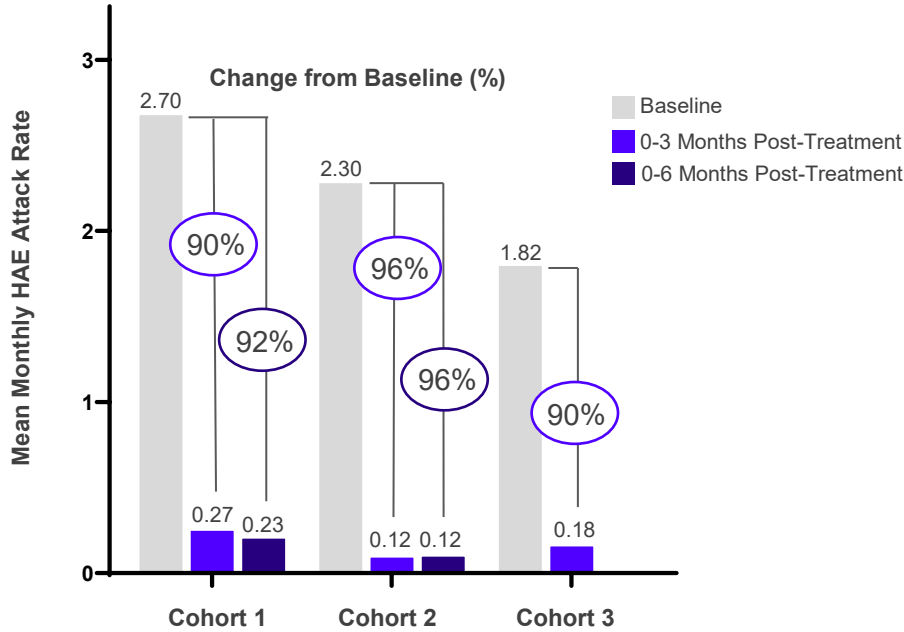


- Ongoing Phase 1b/2 single and multiple dose proof-of-concept trial in adults with HAE Type 1 or Type 2
- Target enrollment has been achieved; all doses have been administered

SC = subcutaneous. Run-in period is at least 8 weeks (56 days) to measure baseline HAE attacks.

Initial data with data cut-off of 13-Mar-2024 for efficacy and safety data. In cohort 1, all 4 participants have completed 3 and 6 months of follow-up. In cohort 2, all 6 participants have completed 3 months of follow-up and 3 of the 6 have completed 6 months of follow-up. In cohort 3, 4 of 6 participants have completed 3 months of follow-up and no participants have completed 6 months of follow-up. Figures show baseline data for all participants and follow-up data for participants who completed 3 or 6 months of follow-up. Data cut-off of 8-Jan-2024 for PK and PD data.

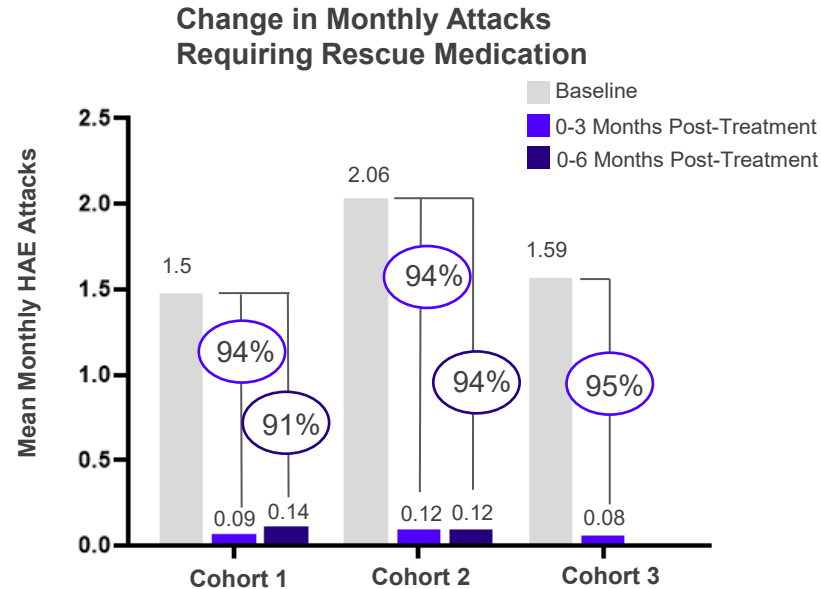
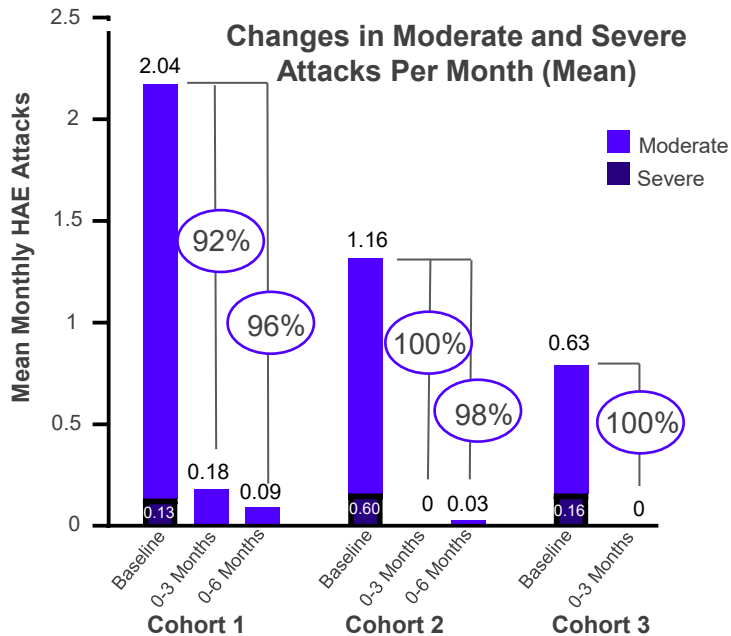
# Navenibart Monthly HAE Attack Reduction of 90-96% through 3 and 6 Months



- Rapid and robust attack rate reduction up to 6 months after a single dose
- For the first 3 months following navenibart treatment, 50-67% of participants were attack-free
- Preliminary pharmacokinetic and pharmacodynamic data are consistent with Phase 1a data in healthy subjects



# Navenibart Reduced the Severity of HAE Attacks and Reduced the Number of Attacks Requiring Rescue Medications Through 3 and 6 Months



- 92-100% decrease in moderate or severe attacks compared to baseline at 3 and 6 months

- 91-95% fewer attacks required rescue medication after navenibart compared to baseline at 3 and 6 months

# Navenibart Was Well-Tolerated and Demonstrated a Favorable Safety Profile

	Cohort 1 (N=4)	Cohort 2 (N=6)	Cohort 3 (N=6)	Total (N=16)
Treatment-Emergent Adverse Events (TEAE)*	6	1	1	8
Contusion	3	-	-	3
Nasopharyngitis	1	1	1	3
Headache	2	-	-	2
Related TEAEs	-	1	1	2
Dizziness	-	1	-	1
Injection Site Rash	-	-	1	1
N with Serious Adverse Events	-	-	-	-
N who have discontinued due to TEAE	-	-	-	-

\* Shown are events that occurred in at least 2 participants.

One participant experienced mild dizziness on day 6 after the first dose in Cohort 2 and one participant experienced an injection site reaction (rash) 5 days after the second dose in Cohort 3, lasting less than 1 day.

No injection site reactions of pain.

# Initial Results Establish Proof-of-Concept and Path for Potential Phase 3 Success

## ALPHA-STAR Phase 1b/2 Initial Results Summary

	Monthly Attack Rate Reduction (mean)	Attack-Free Rate for at Least 1 <sup>st</sup> 3 Months	Reduction in Moderate and Severe Attacks per Month	Reduction in Attacks Requiring Rescue Medication	Injection Site Pain	Doses Per Year <sup>1</sup>
Navenibart Summary	90-96%	50-67%	92-100%	91-95%	0%	2 or 4
Cohort 2: 600 mg Day 1, 300 mg Day 84, through 6M <sup>2</sup>	96%	67%	98%	94%	0%	4

## Lanadelumab Phase 3 Results Summary<sup>3,4</sup>

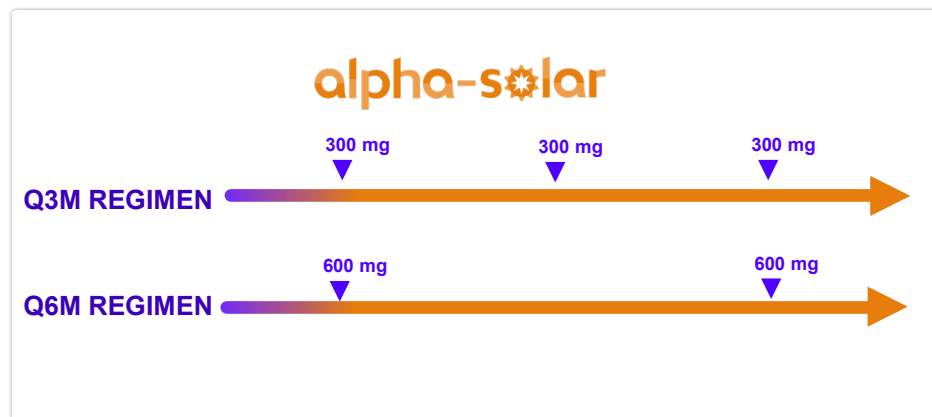
Lanadelumab 300 mg Q2W	87%	44%	83%	87%	52%	26
Lanadelumab 300 mg Q4W	73%	31%	73%	74%	31%	13

Navenibart efficacy endpoints are mean change from baseline. Initial data from adult participants with Type 1 or 2 HAE (n=16) were evaluated at 3 and 6 months after initiation of study drug, data cut-off 13-Mar-2024. Results from lanadelumab are from a separate, Phase 3, placebo-controlled trial in adults and adolescents with Type 1 or 2 HAE (n=125). Lanadelumab efficacy endpoints were compared with the placebo group using a Poisson regression model after 6-month treatment period. The comparison presented between navenibart and the lanadelumab data represents a cross-trial comparison and does not involve data from a head-to-head clinical trial.

1. Planned administration for navenibart 2. Dosing regimen expected to be evaluated in the Phase 3 Q3M trial 3. Banerji et al (2018), JAMA 4. TAKHZYRO US Prescribing Information (Feb 2023)

# ALPHA-SOLAR Long-Term Open-Label Trial Ongoing

- Open to participants from ALPHA-STAR
- Trial assessing long-term safety, tolerability, and clinical activity of navenibart Q3M and Q6M
  - Build dataset to support potential regulatory approvals
- **Primary Endpoint:**
  - Safety and tolerability
- **Secondary Endpoints:**
  - Efficacy including attack rate, attack-free participants, PK, and PD



Initial safety and efficacy data from Q3M and Q6M dosing expected mid-2025

# Navenibart Phase 3 Trial Initiation Expected Q1 2025

## PROGRAM GOAL

Allow patients to choose what works best for them and develop both **Q3M** and **Q6M** dosing regimens



“ *Not having to think about taking a medication except for 2 or 4 times per year would be incredible. The opportunity to pick a dosing frequency is something I never thought could happen.* ”

—Kim, Living with Type 2 HAE, Texas, USA

### Global Phase 3 trial design pending regulatory feedback:

- Initiation expected Q1 2025, top-line results expected by YE 2026
- HAE Types 1 and 2, age ≥ 12 years old
- Placebo-controlled
- Primary Endpoint at 6 months: time-normalized monthly HAE attacks
- Key Secondary Endpoint: proportion of people attack-free at 6 months

# Our Goal is to Change the Way Patients Live with HAE



# Atopic Dermatitis Is a Complex Chronic Disease with Insufficient Therapies<sup>1</sup>



Immune disorder associated with **loss of skin barrier function and itching**. AD is caused by diverse mechanisms, spanning the spectrum of T cell-driven pathology<sup>2</sup>.



Approximately 90% of patients develop the disease within the **first 5 years of life**<sup>3</sup>. Estimated to **affect 5% (16 million) of adult population in the US**, approximately half are reported to be moderate or severe<sup>4</sup>.

“ Moderate-to-severe AD is not just a more intense form of a mild disease, it’s an entirely different condition because it brings with it many other symptoms that may not occur in mild patients. ”

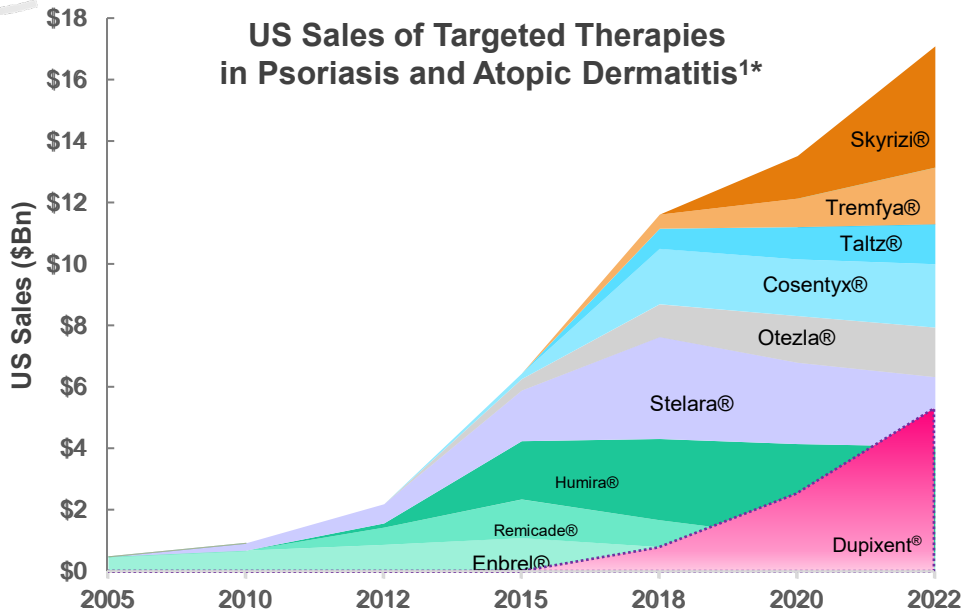
- Dr. Silverberg

## Greatest burdens for AD patients include<sup>5</sup>:

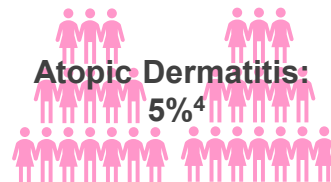
- **Itch** “more than just a simple sensation”
- **Red, inflamed skin**
- **Sleep disruption**
- **Depression**
- **Infections**
- **Co-occurring atopic conditions**

# Proven Precedence for Market Growth and Evolution for Targeted Dermatology Therapies

US Sales of Targeted Therapies in Psoriasis and Atopic Dermatitis<sup>1\*</sup>



## US Prevalence



- The market for targeted AD therapies is nascent with tremendous potential for growth – only 2 drugs/drug classes are currently approved.
- The psoriasis market has demonstrated the growth opportunity for targeted therapies in dermatology
- Given the higher prevalence of atopic dermatitis, the AD market may have even greater potential

### Drug Classes: Psoriasis<sup>5</sup>



### Atopic Dermatitis<sup>3</sup>

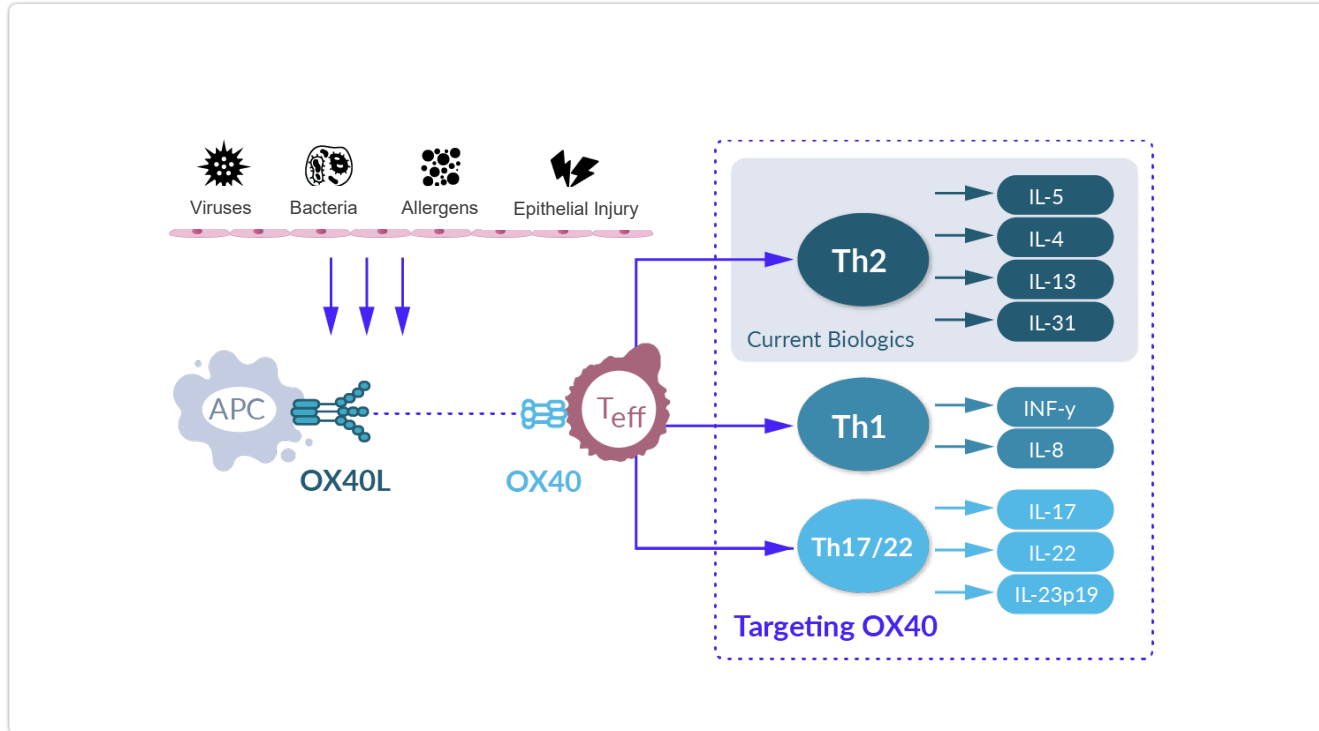


\*Not shown:  
 • Psoriasis products with US sales under \$150M<sup>1</sup> (Cimzia®, Siliq®, Ilumya®)  
 • AD products approved in 2022 (Adbry®)

1. Evaluate Pharma Consensus Sales by Indication in the US
2. Damiani, G. et al. Front Med (Lausanne) 2021 Dec 16;8:743180. doi: 10.3389/fmed.2021.743180
3. Decision Resources Group: Atopic Dermatitis Disease Landscape & Forecast, July 2023
4. Barbarot S, et al. Allergy. 2018 Jun;73(6):1284-1293. doi: 10.1111/all.13401
5. Yasmeen, N. et al. J Dermatolog Treat. 2022 Feb;33(1):204-218



# Immune Dysregulation in Atopic Dermatitis Beyond Th2



- Current biologics target only the Type 2 pathway, and may not address the diversity of endotypes in atopic dermatitis
- Inhibition of the OX40 pathway targets Types 1-3 pathways, impacting a broader group of Th cells
- OX40 inhibition may induce higher rates of clinical responses in more patients than anti-cytokine biologics and be disease modifying

# Clinical PoC Achieved in AD by 3 Programs Targeting the OX40-OX40L Pathway

## Anti-OX40L Monoclonal Antibody



### Amlitelimab<sup>1,2,5</sup>

- Fully human, IgG4
- Targets OX40L on a wide array of APCs
- Positive Phase 2a and 2b results in AD
- Binding OX40L may increase risk for upper respiratory infection, nasopharyngitis, respiratory, and vascular AEs
- Ph 2 in asthma ongoing
- Ph 3 in AD ongoing

## Anti-OX40 Monoclonal Antibodies



### Rocatinlimab<sup>2,3,6</sup>

- Fully human, afucosylated, IgG1
- Targets OX40 on activated T cells
- Depletes T cells via enhanced ADCC
- Positive Phase 2a and 2b results in AD
- Phase 2b results suggest possibility of disease modification in AD
- T cell depletion leads to cytokine release (pyrexia and chills) and potential increased risk of infection
- Ph 3 in AD ongoing



### Telazorlimab<sup>4</sup>

- Fully humanized, IgG1
- Targets OX40 on activated T cells
- Full antagonist
- Positive Phase 2a and 2b results in AD
- Phase 2b results suggest possibility of disease modification in AD
- Favorable safety and tolerability profile
- **STAR-0310 is a next generation mAb designed for higher affinity, higher potency, and longer half-life**

# STAR-0310: Potential First-Choice for Moderate-to-Severe AD

**High Affinity, Next Generation**  
Anti-OX40 antibody

**Selective Potency** for Activated  
T-Cells

**Potential Best-in-Class Safety**  
**Profile** Designed for low ADCC  
and to be T cell preserving



**Extended Half-Life with YTE**  
technology

**Potential for Low Volume,**  
**Infrequent SC Delivery**

**Patent Pending Technology**  
U.S. provisional patent application  
filed, potential patent expiry 2044<sup>3</sup>

# Preclinical Results Support Potential Best-in-Class Profile of STAR-0310

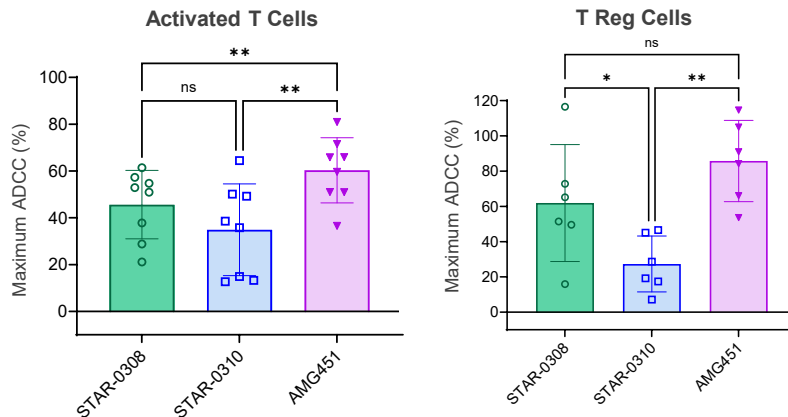
## High Affinity and Potency

- 8-fold increase in binding affinity to OX40 which results in significant increase in potency compared to telazorlimab
- Single digit nM affinity to OX40, similar to rocatinlimab
- In vitro cytokine release inhibition is comparable to rocatinlimab, achieved without rocatinlimab's ADCC

**Less ADCC in the context of robust potency has a potentially favorable safety profile without impacting efficacy**

## Low ADCC

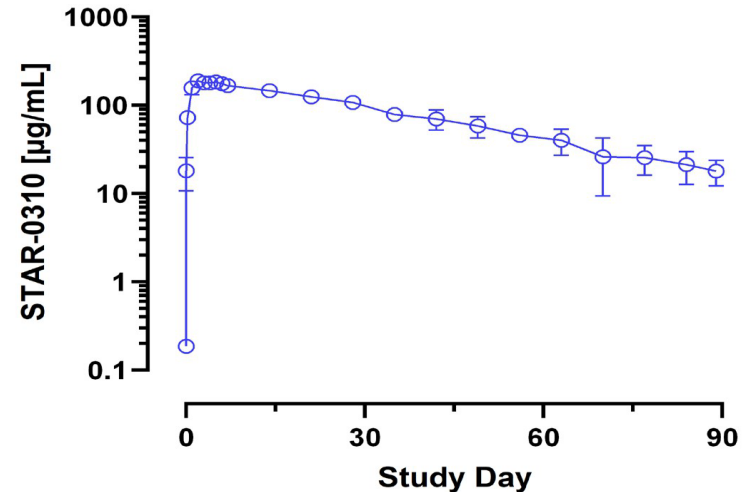
- Less activated T cell depletion compared to rocatinlimab
  - ~75% less maximal killing on activated T cells relative to rocatinlimab
  - 46-fold less elimination of regulatory T cells than rocatinlimab



# STAR-0310 Demonstrated Prolonged Half-Life in Cynomolgus Monkeys

- PK analyses of STAR-0310 in cynomolgus monkeys showed an estimated serum mean half-life of 26 days
- Average half-life of non-half-life extended IgG antibodies in cynomolgus monkeys is 10-14 days

Extended Half-Life (YTE)		
Antibody (subclass)	NHP $t_{1/2}$ (days)	Human $t_{1/2}$ (days)
Nirsevimab (IgG1)	40	85-117
STAR-0215 (IgG1)	34	83-127
Motavizumab (IgG1)	21	70-100
Evusheld (IgG1)	19	90
APG777 (IgG1 with LALA)	27	75
STAR-0310	26	Expected Q3 2025



# STAR-0310 Designed to be a Potential Best-in-Class and First-Choice AD Treatment

## EFFICACY














Potential effectiveness across Th1, Th2, and Th17/22 for robust and sustained responses in AD

## DOSING

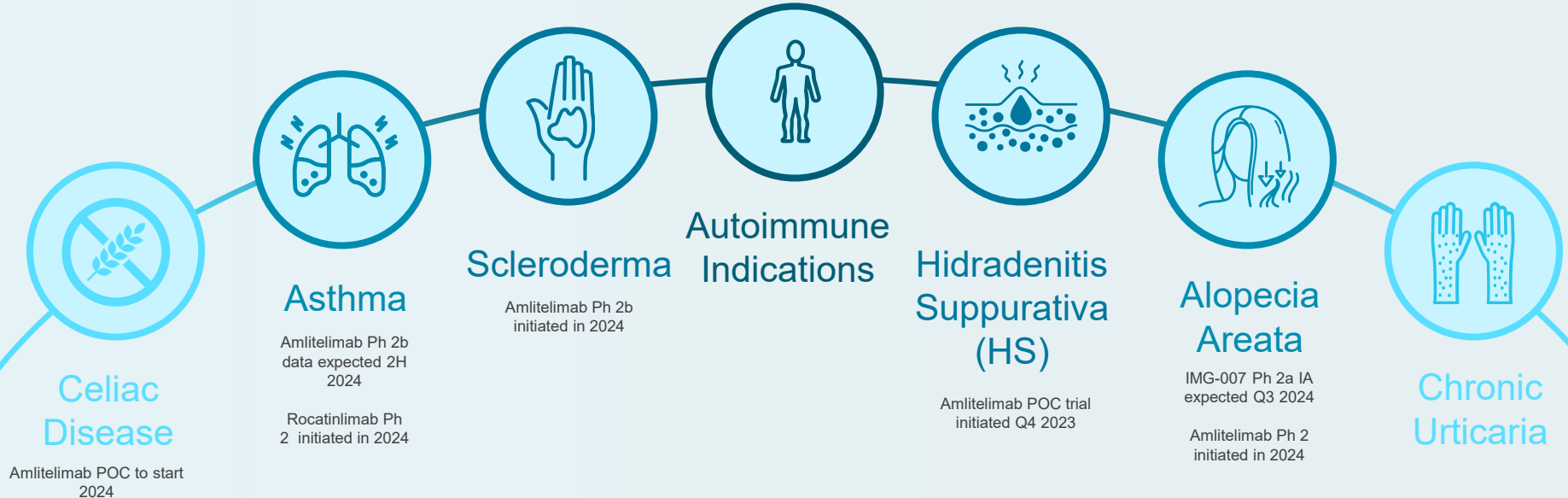
Extended half-life enabling infrequent dosing

## SAFETY

Reduced T cell depletion from ADCC  
Low potential for on-target safety events

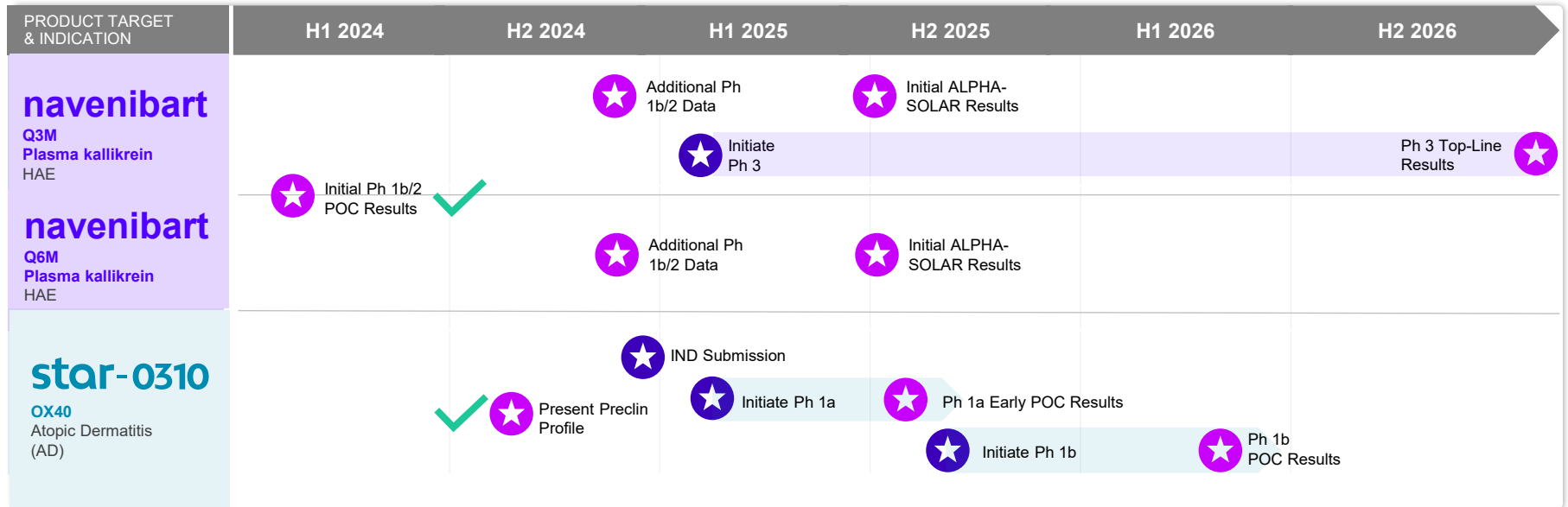
		Rocatinlimab (Amgen)	Amltelimab (Sanofi)
EFFICACY			
DOSING			
SAFETY	 	 	 

# OX40 Has Opportunity for Expansion Into Additional Indications



# Building Leading Allergy & Immunology Company

## Upcoming Expected Program Milestones



Legend

-  Results
-  Clinical/Regulatory milestones



# ATXS: Strong Financial Foundation

- Cash, cash equivalents and short-term investments as of 6/30/2024: \$354.7 million
- Cash expected to support current operating plan<sup>1</sup> into mid-2027
- Equity summary:

	Common	Preferred Stock as Common Equivalents	Pre-Funded Warrants	Total OS Common Equivalents
Outstanding as of 6/30/24	54,920,663	5,184,591	1,571,093	61,676,347



**astria**  
THERAPEUTICS