Jasper Therapeutics

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ETESIAN Data + BEACON Investigation Update

December 2025

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Agenda

BEACON Trial Investigation Results

- Ronald Martell, CEO Jasper Therapeutics
- Dr. Daniel Adelman, Acting CMO Jasper Therapeutics

BEACON Redosing Data & KOL Feedback

- Dr. Martin Metz, Professor of Dermatology and Allergy, Charité – Universitätsmedizin Berlin

ETESIAN Trial Interim Results

- Dr. Daniel Adelman, Acting CMO Jasper Therapeutics

Q&A Session

BEACON Study Cohort 8 and Cohort 9 Initial Results

Anomalous efficacy observations led to internal investigation being undertaken

July 2025 BEACON data for cohort 8 (240mg Q8W) and cohort 9 (240mg→180mg Q8W) showed an unexpected lack of clinical response

- No US patients (n=10) achieved Complete Response(CR) or Well Controlled (WC) UAS7 by week 12
  - All were dosed using lot A34954, which was the first time it was used in the BEACON study
- 2 of 3 patients at EU sites achieved CRs, however EU sites used a different drug lot (A34955)

Jasper immediately replaced lot A34954 with lot A34955 (used in OLE and EU BEACON sites)

Jasper also launched an internal investigation into the results

- Comprehensive review of manufacturing records, drug handling, site training/logs and data handling
- Recovery and testing by JSPR & independent labs of drug product samples from across the supply chain
- Review of all US sites and all 10 US patients, including protocol adherence, patient medical histories, patient screening and all PK/PD/efficacy data

A KOL panel reviewed the internal investigation findings, including full patient dossiers, and provided their input

BEACON Trial Internal Investigation Results

Dr. Daniel Adelman, Acting CMO Jasper Therapeutics

Phase 1b/2a BEACON Study in Chronic Spontaneous Urticaria

Randomized, Double-Blind, Placebo-Controlled, Multiple Ascending Dose Study

BEACON TRIAL

Screening/Eligibility

- CSU diagnosis ≥ 6 mos.
- UAS7 ≥ 16
- 18+ years
- H1-antihistamine-failed

Study Operations

- **US Lead: Tom Casale, MD**
- **EU Lead: Martin Metz, MD**
- ~30 sites in the US & EU

Key Assessments

- **Disease Scores:** UAS7, UCT
- **Safety:** TEAEs, SAEs
- **PK**
- **Mast Cell Depletion & Recovery:** Serum Tryptase, Skin Biopsies

	Cohort #	Dose	Patients (Randomization)	Schedule
Open Label (n=6)	C1	10mg	n=3	Weeks 0, 4, 12, 20
	C2	40mg	n=3	
Double-Blind Placebo-Controlled (n=76)	C3	80mg	n=8 (3:1)	Q8W
	C4a	120mg	n=6 (2:1)	Q8W
	C4b		n=6 (2:1)	Q12W
	C5b	180mg	n=10 (3:1)	Q8W
	C5a		n=9 (3:1)	Q12W
	C6	240mg SD	n=8 (3:1)	Single Dose
	C7	360mg SD	n=6 (3:1)	Single Dose
	C8	240mg	n=8* (3:1)	Q8W
	C9	240mg → 180mg	n=9* (3:1)	Q8W

*Adding 10-12 additional patients across 240mg → 180mg Q8W and 240mg Q8W cohorts

Cohorts included in January/July 2025 data cuts

Additional data expected 1Q 2026

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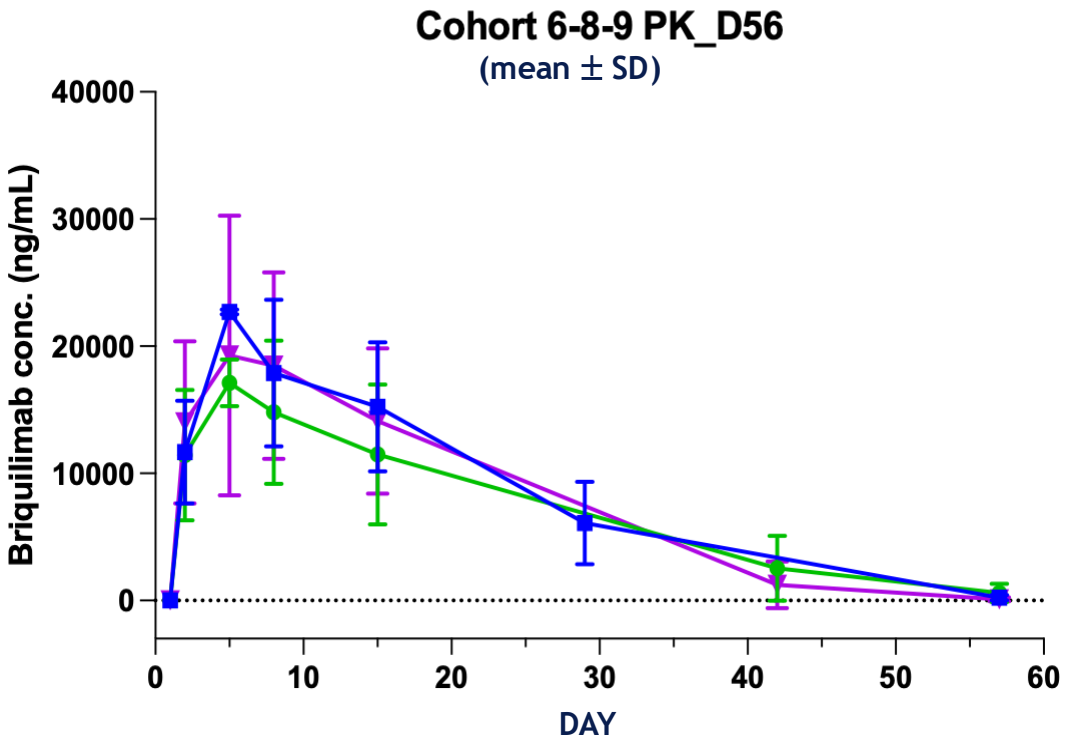
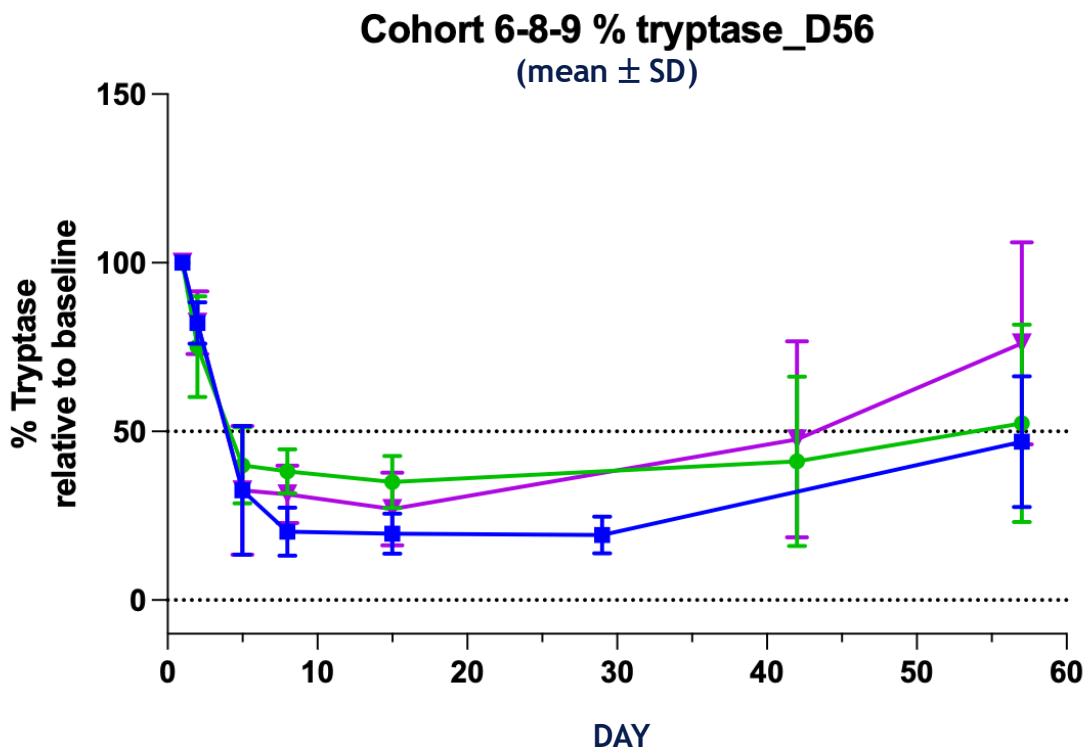
Pharmacokinetics and Effect on Tryptase Consistent Across Cohorts 6, 8 and 9

No indication of any variation in results due to initial DP lot used in Cohort 8 and Cohort 9





Cohort 6 - 240mg Single Dose (n=6)

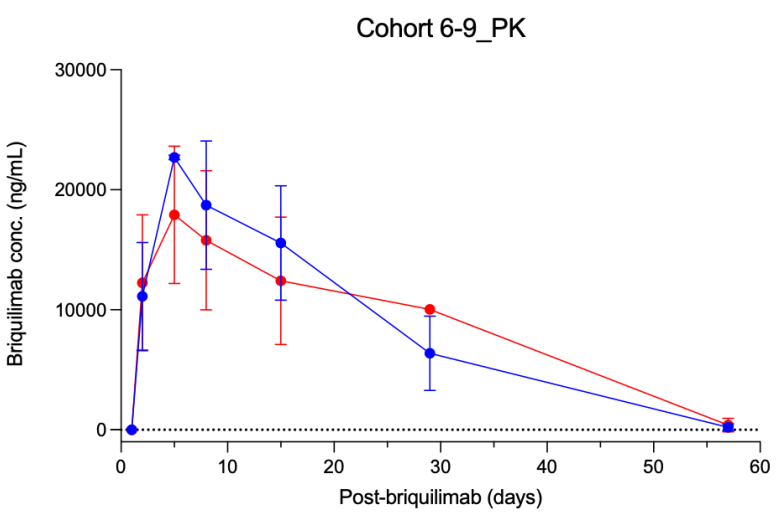
Cohort 8 - 240mg Q8W (n=5)

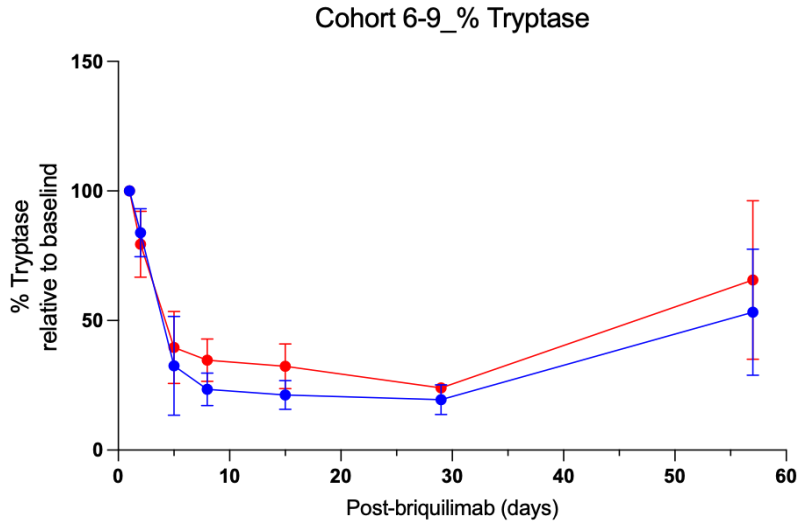
Cohort 9 - 240mg / 180mg Q8W (n=7)

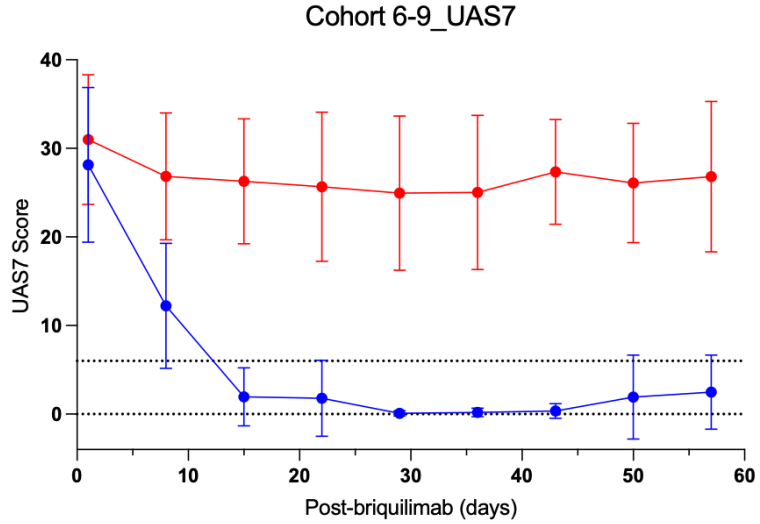
Data is shown as mean ± SD
Placebo subjects are excluded
Tryptase LLOQ is set as 0.8 ng/mL

Briquilimab PK and PD are Consistent Between UAS7 Responders and Non-Responders (Cohorts 6-9)

Suggest that the investigational product is not the most likely driver; pointing to patient-specific factors







Complete / Well-Controlled

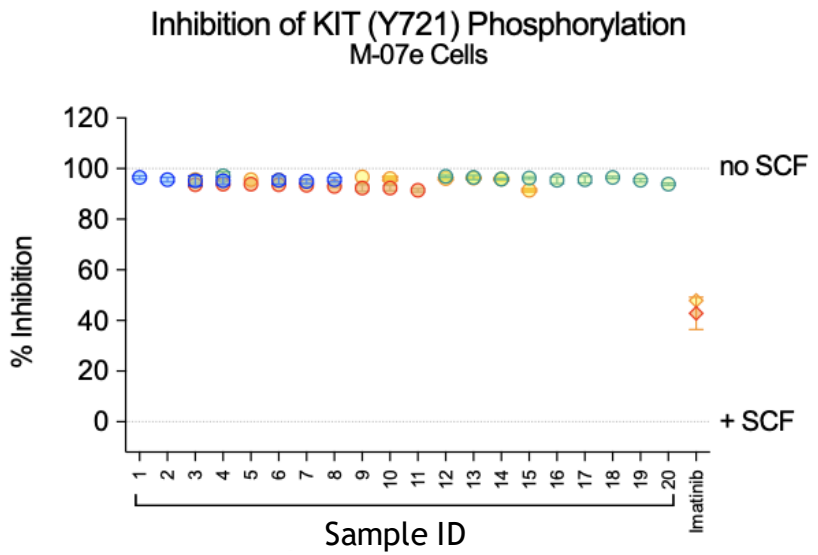
Non-Responder

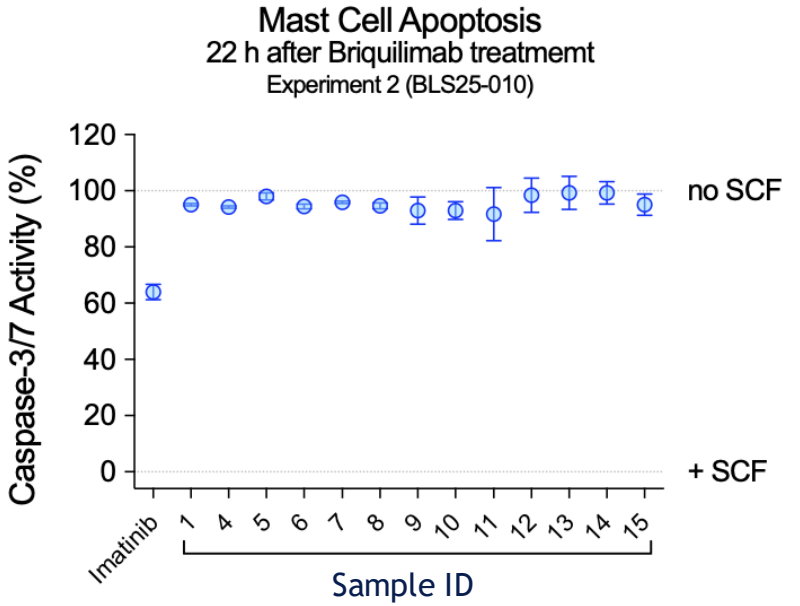
Data is shown as mean ± SD
Placebo subjects are excluded
Tryptase LLOQ is set as 0.8 ng/mL

Physical-Chemical and In-Vitro Cell Line Experiments Show No Difference in Briquilimab Lots or Clinical Samples (internal and external labs)

Sample ID	SEC (% Main)	Non-Reduced CGE (% Monomer)
Sample # 1	96.1	95.2
Sample # 2	96.1	94.8
Sample # 3	96.1	95.0
Sample # 4	96.1	94.9
Sample # 5	96.1	94.9
Sample # 6	96.1	94.8
Sample # 7	96.2	94.1
Sample # 8	96.1	94.5
Sample # 9	96.1	94.7
Ref Standard	97.0	95.3

SEC, size exclusion chromatography. CGE, capillary gel electrophoresis. SCF, stem cell factor





Clinical Operations, Data Management and Site Investigations

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No deviations in drug management, clinical conduct or data entry/handling noted

- On-site investigations
- Drug substance and drug product manufacturing
- Drug kitting, shipment and storage
- Injection preparation, timing and storage, types of syringes, injection volume and site
- Patient and site data entry, data management and analysis

Site investigations

- Site specific screening and dosing data reviewed for each patient
- Comprehensive patient folios prepared for each patient and reviewed by CSU KOL panel
- One new site enrolled 5 patients into active arms of Cohort 8 & 9 with no CR or WC responses
  - Community-based, clinical research center
  - All patients had minimal documented medical history of CSU or past treatments for CSU

Internal investigation indicates anomalous results are due to patient specific factors

- No deviations or issues with Drug Product or Drug Substance were noted

BEACON Trial Investigation KOL Review & Redosing Data

Dr. Martin Metz, Professor of Dermatology and Allergy
Charité – Universitätsmedizin Berlin

Updated Clinical Data for Cohorts 8 & 9 Through 24 Weeks Show Consistent Results Regardless of Drug Product Lot Utilized

As part of the internal investigation, patients in BEACON cohort 8 & 9 patients were switched to new DP lot through the end of their 24-week dosing period

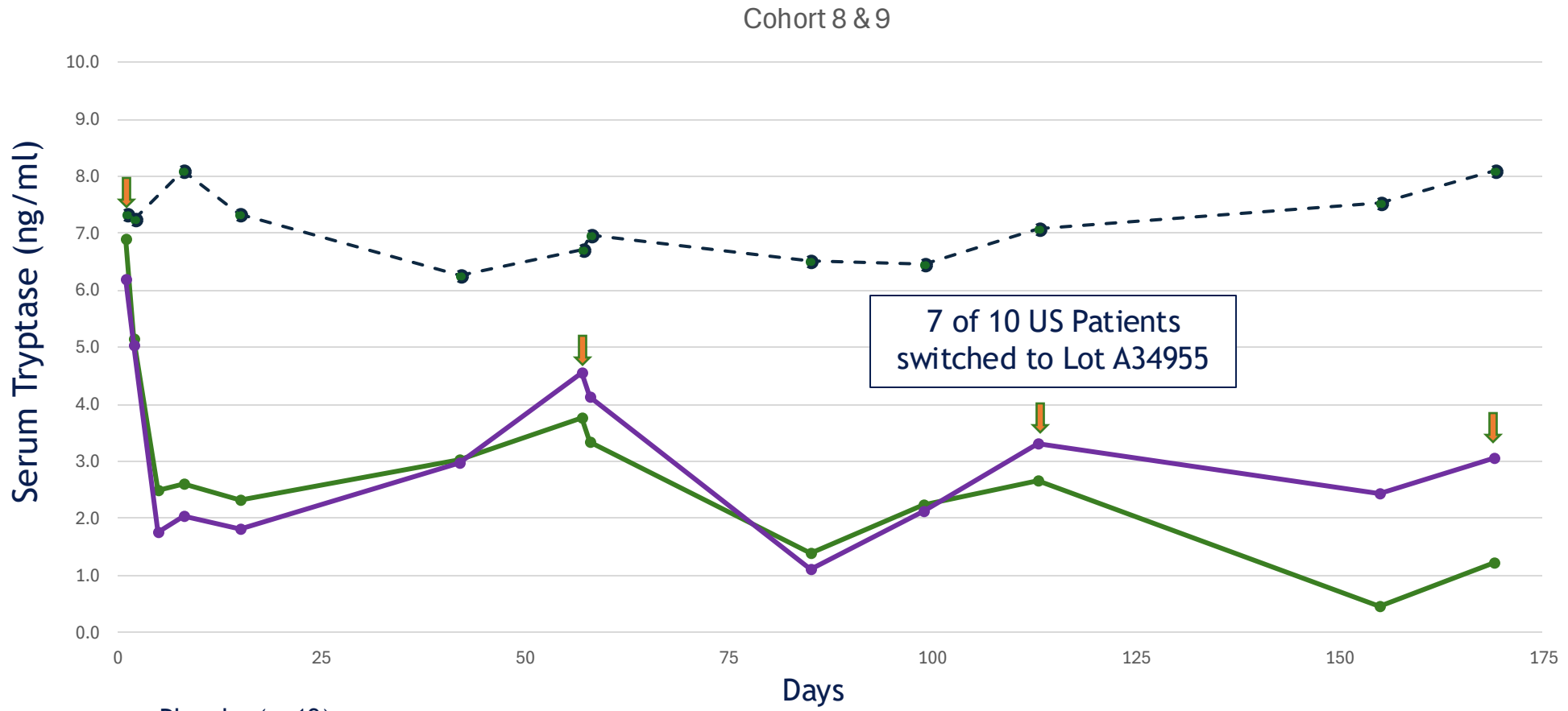
- Lot A34954 immediately replaced at all clinical sites with A34955 (lot used in OLE, BEACON EU)
- Most patients received Lot A34955 by Week 8 or Week 16 (7 of 10 US patients)
- 2 patients transitioned to lot A34955 at Week 24

After transitioning US patients to a different DP lot:

- PK and PD measures remained consistent with initial DP lot
- No notable change in efficacy outcomes were observed in 8 of the 9 patients redosed
- One patient did achieve WC disease after third dose, but that response was building on a 20 point drop in UAS7 achieved after their first two doses with the initial DP lot

Cohorts 8 & 9 – Serum Tryptase

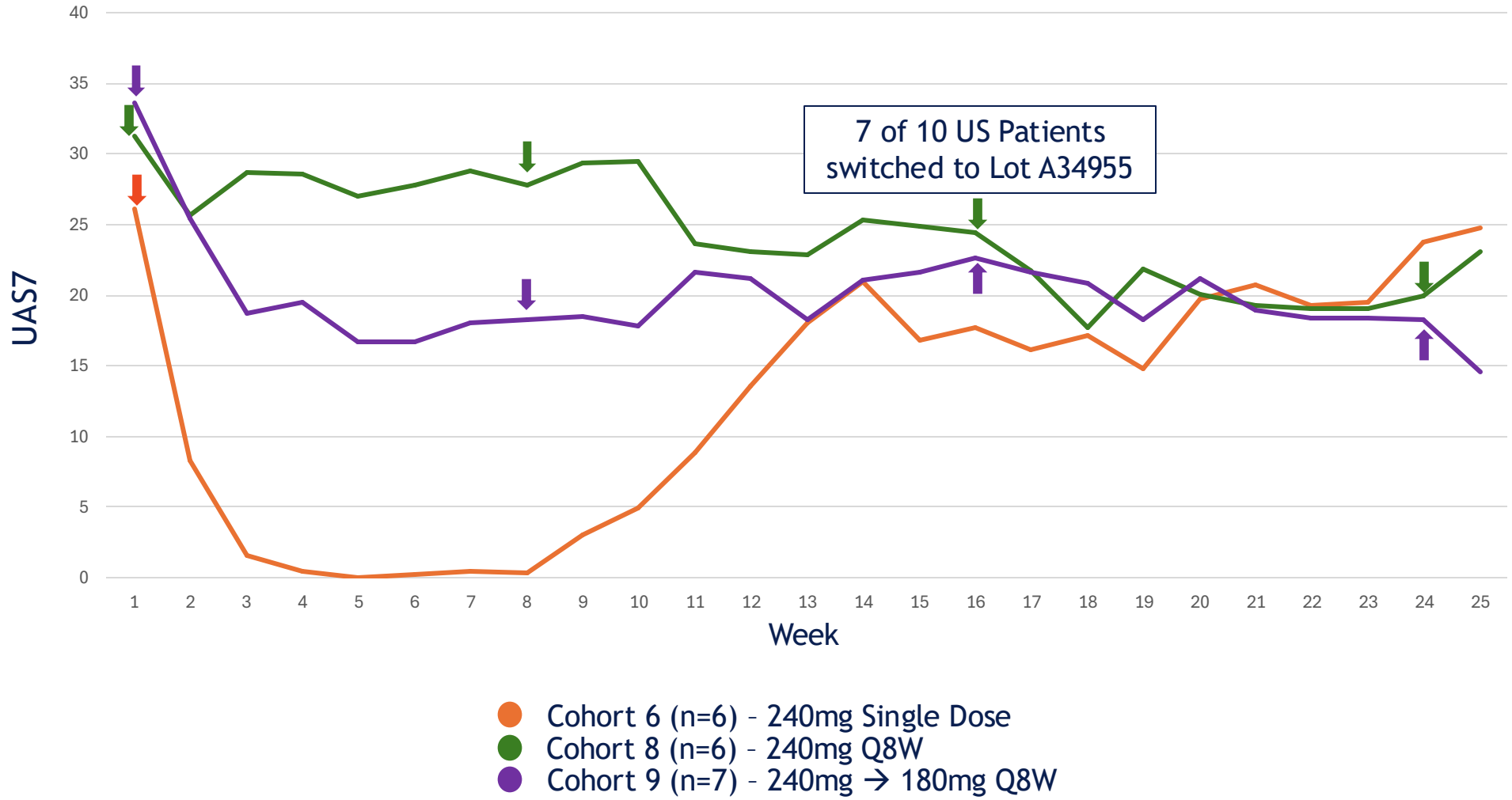
Deep reductions in tryptase levels maintained after transition to different DP lot



Note: per protocol, larger intervals for blood sampling for PK and tryptase measurements following week 8 on study

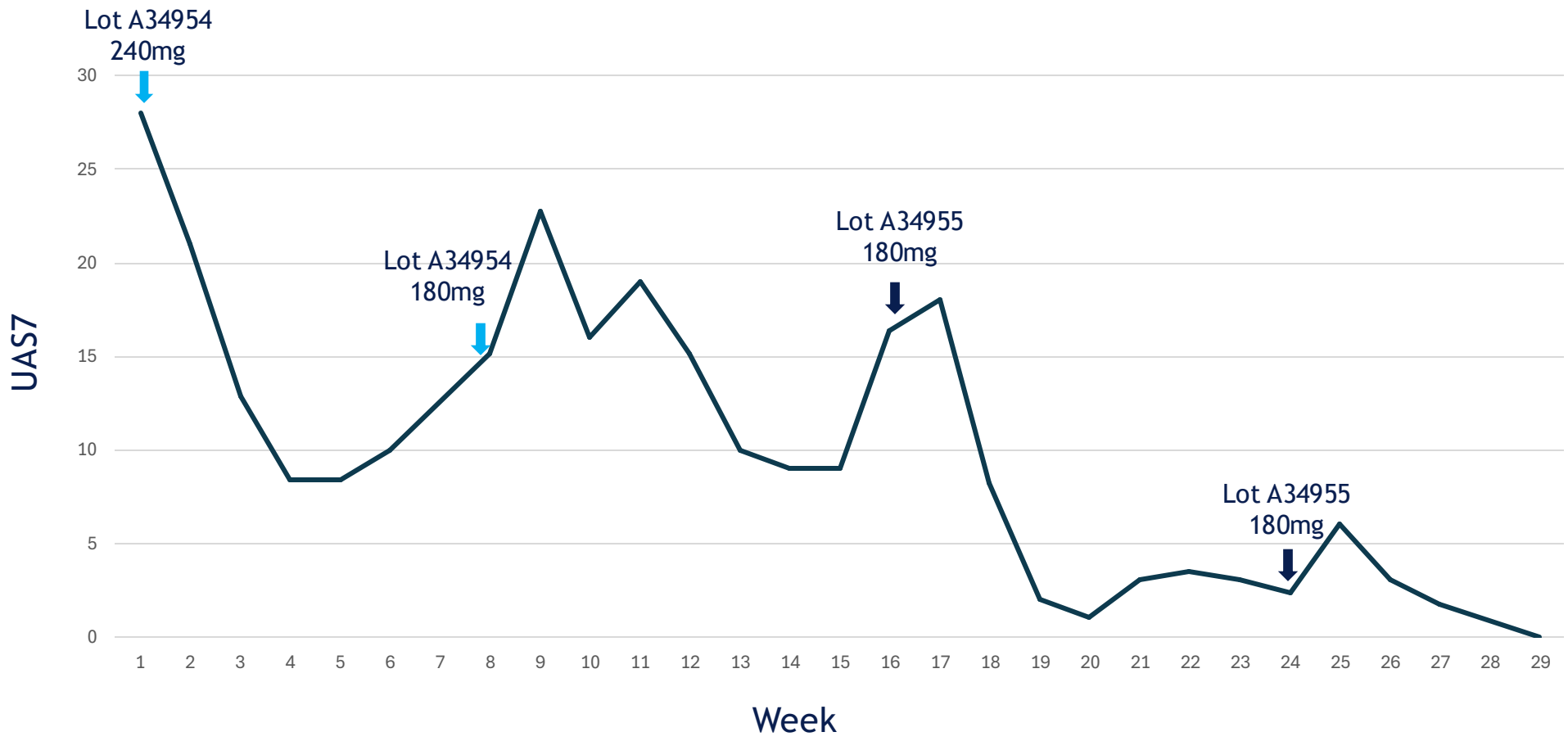
No Incremental Efficacy Observed On New DP Lot in 8 of 9 Patients Redosed

All patients received 240mg first dose, 7 of 10 Cohort 8 & 9 US patients switched to different lot by wk16



Cohort 9: Single Late Responder Achieved WC Disease After 3rd dose

20-point reduction in UAS7 achieved with initial DP Lot



Briquilimab Was Well Tolerated and Demonstrated a Favorable Safety Profile

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Number of Participants With	Pooled 120mg Briquilimab (N=8) n (%)	Pooled 180mg Briquilimab (N=14) n (%)	240mg Briquilimab (N=6) n (%)	360mg Briquilimab (N=5) n (%)	240mg Q8W Briquilimab (N=6) n (%)	240mg D1 180mg Q8W Briquilimab (N=7) n (%)	Total Pooled Briquilimab (N=58)[5] n (%)	Pooled Placebo (N=19) n (%)
Any TEAE	8 (100)	10 (71.4)	6(100)	4 (80)	3 (50.0)	5 (71.4)	42 (72.4)	11 (57.9)
Any Treatment-Related Serious TEAE	0 (0)	1 (7.1)[1]	0 (0)	0 (0)	0 (0)	0 (0)	1 (1.7)[1]	0 (0)
Any TEAE Leading to Discontinuation of IP	0 (0)	1 (7.1)[1]	0 (0)	0 (0)	0 (0)	1 (14.3)[2]	2 (3.4)[1,2]	0 (0)
Any Treatment-Related TEAE ≥ Grade 3	0 (0)	0 (0.0)	1 (16.7)[3]	0 (0)	0 (0)	0 (0)	1 (1.7)[3]	1 (5.3)[4]

Most commonly reported AEs (≥5 participants): nasopharyngitis, neutrophil count decrease, taste disorder, fatigue, hair color change, URTI

[1]Single participant, 180mg Q8W, CoFAR grade 2 hypersensitivity reaction
[2]Single participant, 240mg D1 180mg Q8W, CoFAR grade 2 hypersensitivity reaction
[3]Single participant, 240mg, CTCAE grade 3 neutrophil count decrease, resolved in 14 days
[4]Single participant, placebo, CTCAE grade 3 bronchitis
[5]Total pooled briquilimab includes all cohorts shown + 10mg (n=3), 40mg (n=3), and 80mg (n=6)

Data cutoff: Nov 13, 2025

Safety/Tolerability Observations Possibly Related to KIT Blockade Were Generally Limited to Low Grade Events

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Majority resolved during repeat dosing and none resulted in discontinuations

Adverse Event as reported term	Pooled 120mg Briquilimab (N=8) n (%)	Pooled 180mg Briquilimab (N=14) n (%)	240mg Briquilimab (N=6) n (%)	360mg Briquilimab (N=5) n (%)	240mg Q8W Briquilimab (N=6) n (%)	240/180 mg Q8W Briquilimab (N=7) n (%)	Total Pooled Briquilimab[4] (N=57) n (%)	Pooled Placebo (N=19) n (%)
Hair color changes	1 (12.5)	2 (14.3)	0 (0)	0 (0)	1 (16.7)	0 (0)	5 (8.8)	1 (5.3)
Skin discoloration	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (5.3)
Taste change/Hypogeusia	1 (12.5)	1 (7.1)	3 (50)	2 (40)	0 (0)	2 (28.6)	10 (17.5)[1]	1 (5.3)
Neutrophil count decreased[4]	2 (25)	3 (21.4)	5 (83.3)	2 (40)	0 (0)	2 (28.6)	14 (24.6)[2]	2 (10.5)

[1] Median time to resolution of Taste change/Hypogeusia observed was 31 days
[2] Median time to resolution of Neutrophil count decreases observed was 15 days
[3] Total pooled briquilimab includes all cohorts shown + 10mg (n=3), 40mg (n=3), and 80mg (n=6)
[4] Includes PTs of neutrophil count decreased, differential white cell count, white blood cell count decreased
Note: Effects on spermatogenesis will be the subject of future study

Data cutoff: Nov 13, 2025

Investigation Conclusions

BEACON TRIAL

Anomalous efficacy does not appear to be the result of any issue with the DP or study conduct

- No issues or deviations noted in the testing done on DS and DP throughout the supply chain
- Redosing Cohort 8 & 9 patients with different DP lot did not drive a different outcome
- No protocol deviations, no issues with site training, no issues with study conduct

Unexpected efficacy results appear to largely be the result of patient selection

- Based on KOL panel review of the totality of the data, including the data on patients redosed with replacement DP lot, their feedback is as follows:
  - 9 of 10 patients that did not respond do not appear to have CSU
  - Not uncommon as CSU is a diagnosis by exclusion, other CSU studies have shown 25-30% of patients are incorrectly diagnosed

KOL panel recommendations to ensure quality patient selection

- Ensure sites utilized have a certified Immunologist/Dermatologist with a history of diagnosing and treating CSU patients
- Expanded review of patient history during screening including visual records of lesions
- Larger sample size in future studies should mitigate impact of non-MC driven CSU patients

ETESIAN TRIAL

Briquilimab in Allergic Asthma

Dr. Daniel Adelman, Acting CMO Jasper Therapeutics

Briquilimab Phase 1b/2a ETESIAN Study in Allergic Asthma

Double-blind, placebo-controlled, single dose, challenge study

ETESIAN TRIAL

Screening/Eligibility

- Diagnosis of stable allergic asthma
- Baseline FEV_1 70% of predicted value
- Positive methacholine challenge at baseline
- 18-65 years of age

Study Operations

- **Lead Investigator: Paul O'Byrne, MD**
- 6 centers in Canada
- **N = 17 patients**
- **Study terminated early for administrative reasons**

Key Assessments

- **Early & Late Asthmatic Response:** % decrease in FEV_1 from baseline
- **Changes in Airway Hyperresponsiveness:** Methacholine PD20 24 hours after allergen challenge
- **Mast Cell Depletion & Recovery:** Serum Tryptase
- **Safety:** TEAEs, SAEs

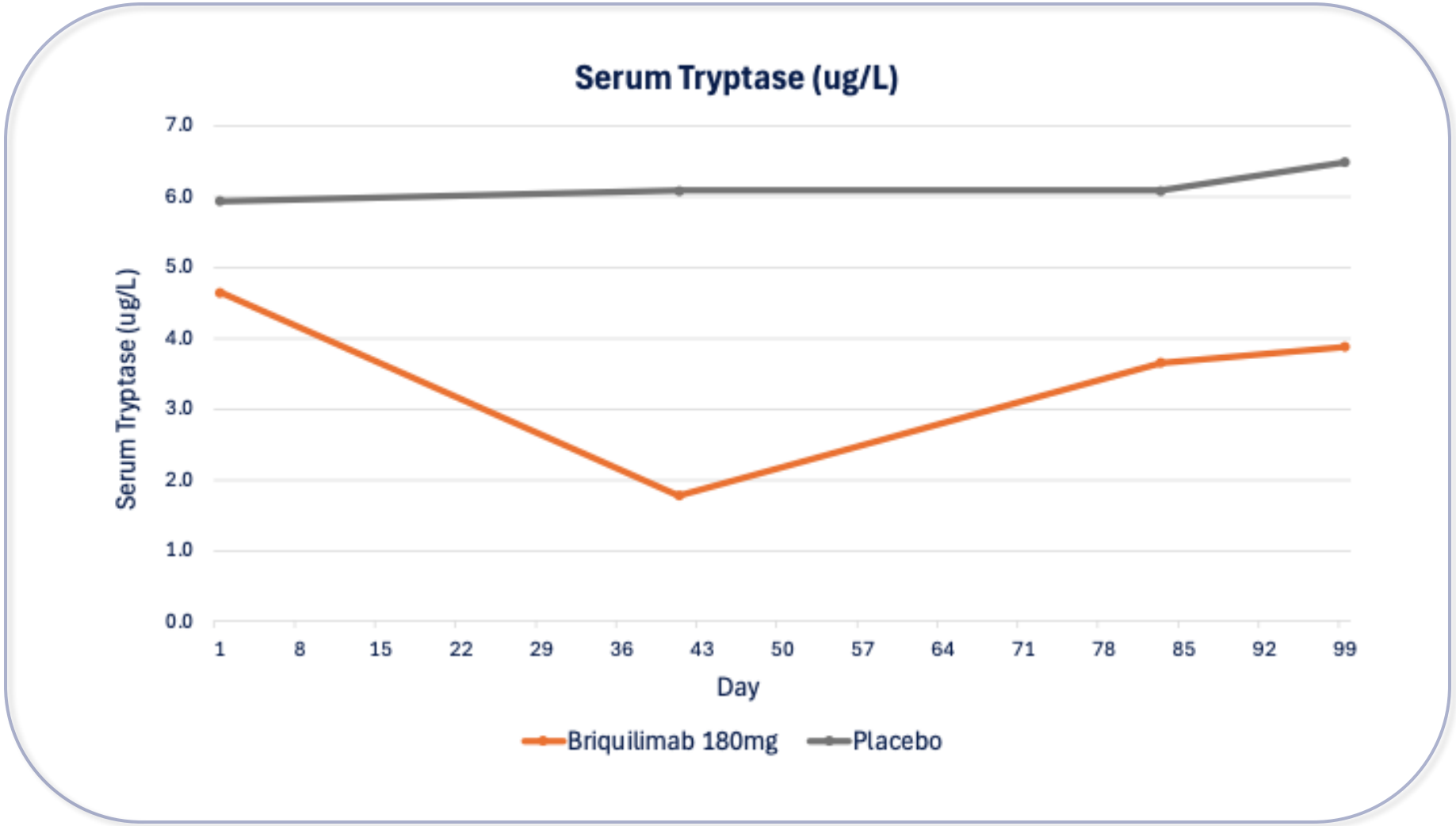
Allergen Challenge & Methacholine PD20 Measured at 6 weeks and 12 weeks

Patients (Randomization)	Dose	Timeline
n=17 (1:1)	180 mg (Single Dose)	Week -2: Dosing; Day 0: Dosing; Week 6: Allergen Challenge; Week 12: Allergen Challenge; Week 14: Safety Follow-Up

Single 180mg Briquilimab Dose Drives Serum Tryptase Reductions at 6 Weeks

PK/PD effect consistent with 180mg briquilimab activity observed in other studies

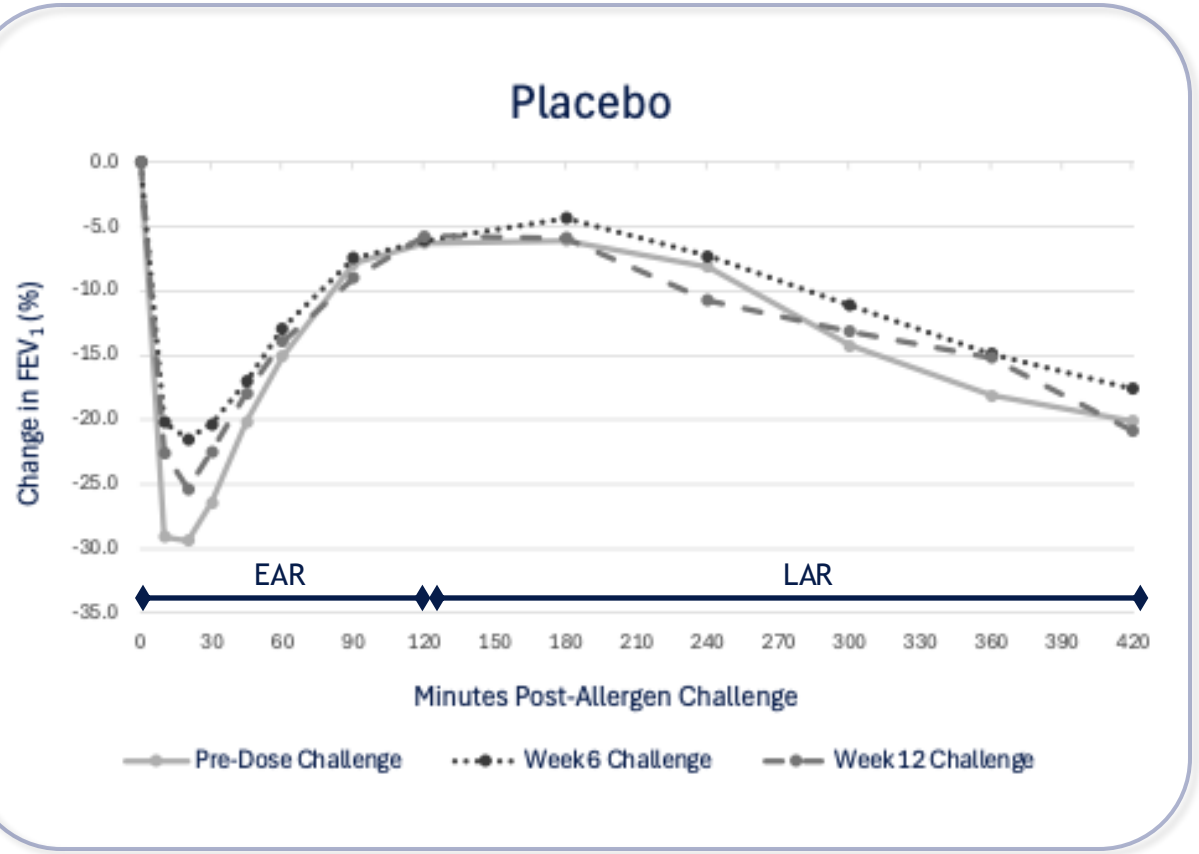
ETESIAN TRIAL

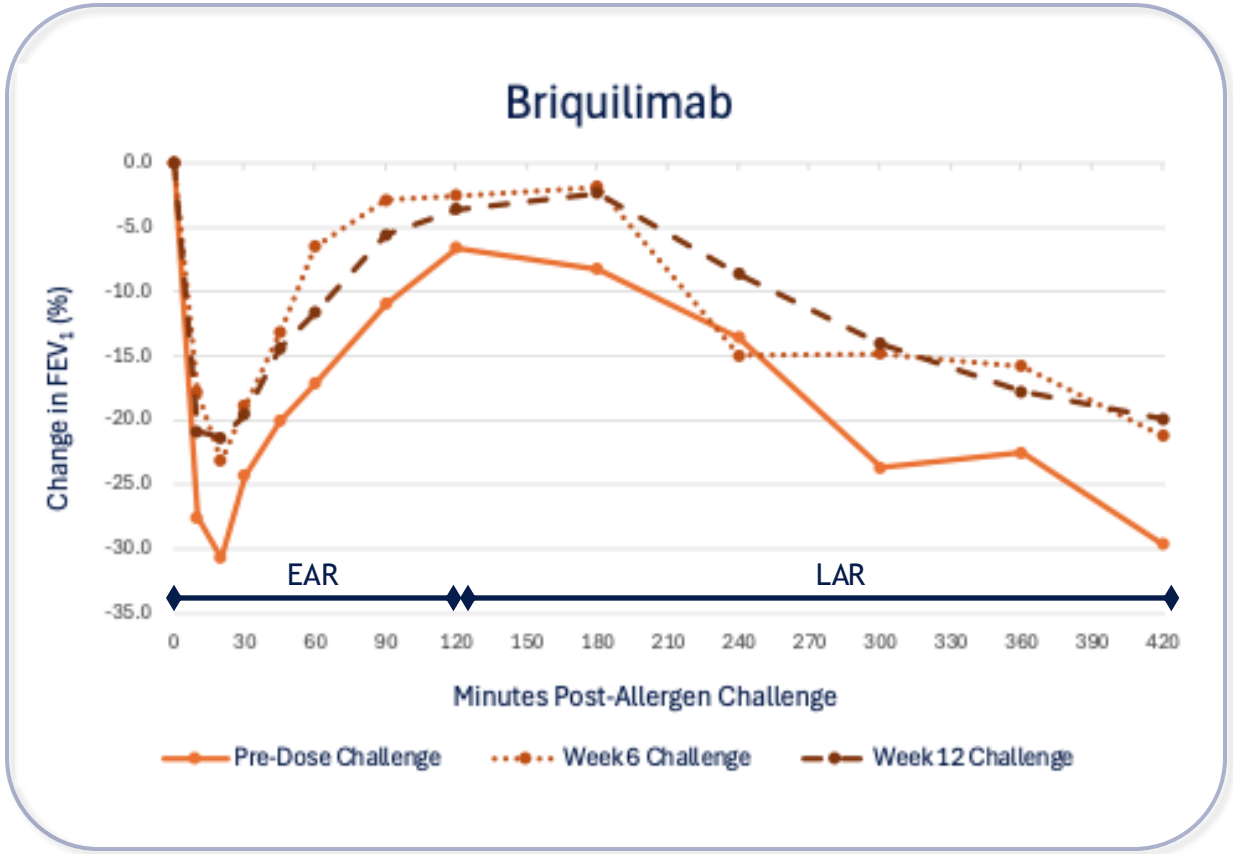


Briquilimab Mitigates the Effects of Allergen Challenge on FEV_1 Response

Robust and sustained impact of mast-cell depletion on asthmatic response at 6 and 12 weeks

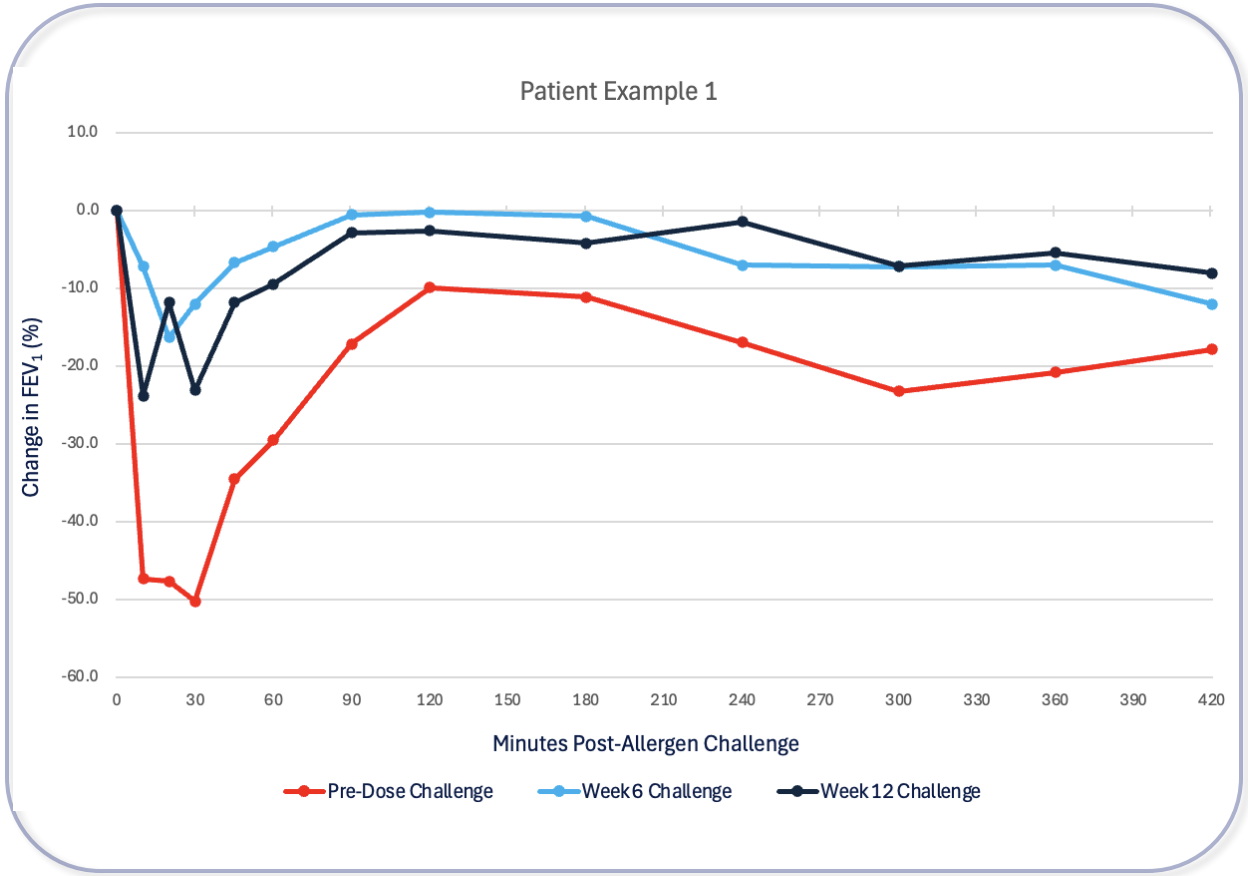
ETESIAN TRIAL

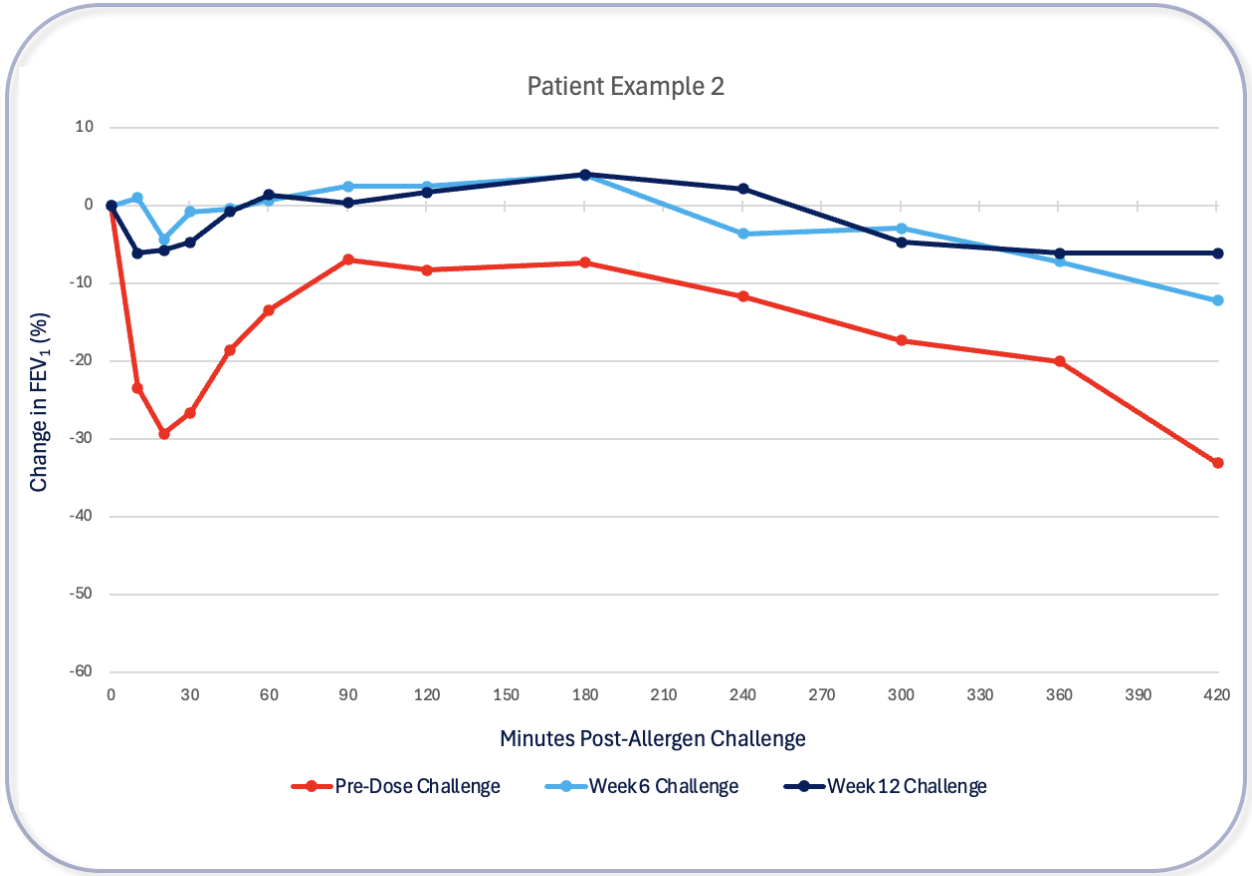




Patient Examples - SD 180mg Briquilimab Dose

Substantial improvements in EAR & LAR observed in multiple patients





Briquilimab Dramatically Reduced Airway Hyper-Responsiveness

Increased concentration of methacholine needed to drive 20% drop in FEV1 (PD20)

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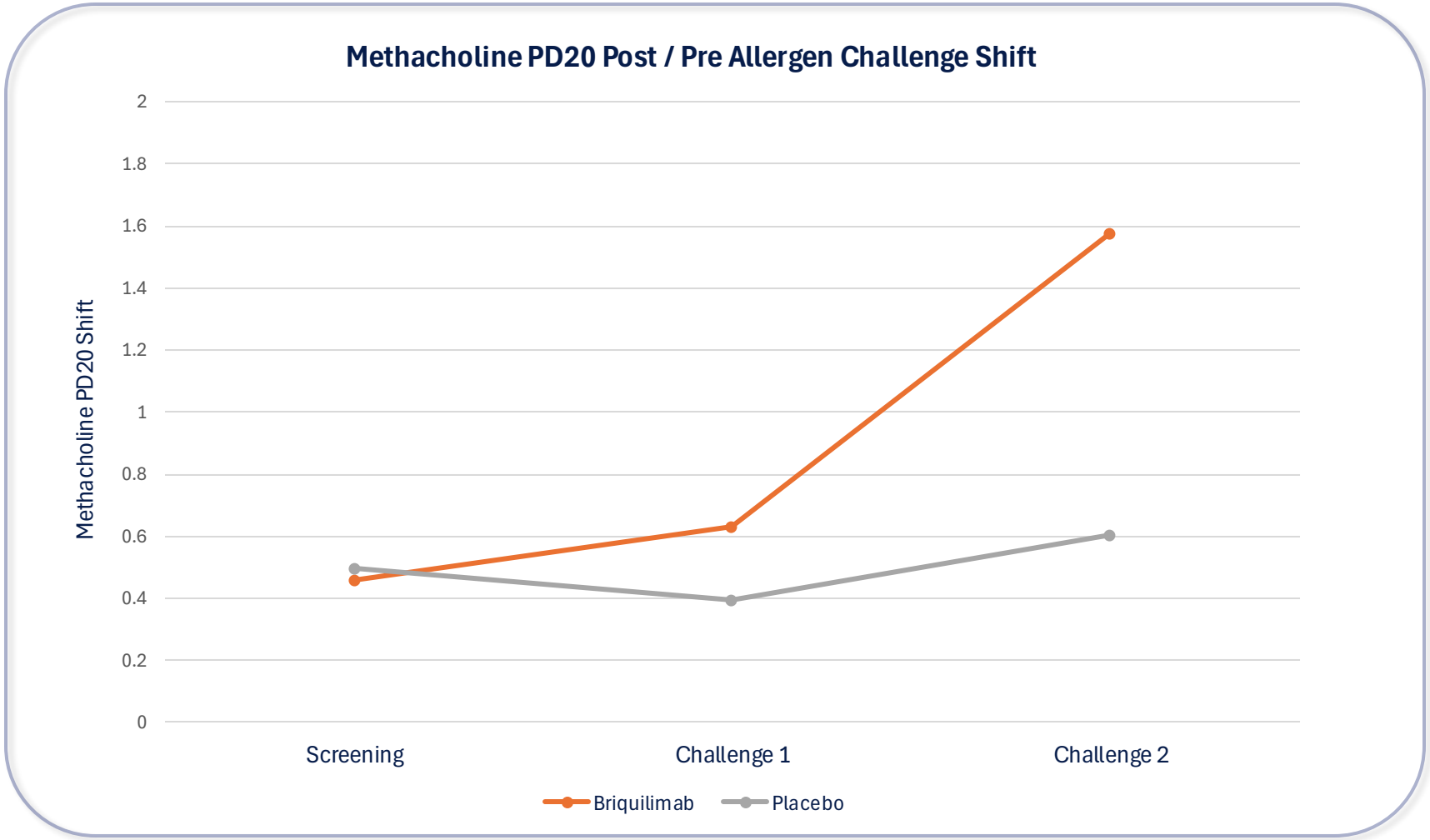

Sputum Eosinophil Response Suppressed by Briquilimab

Substantial eosinophil reduction at both 6-week and 12-week allergen challenge timepoints

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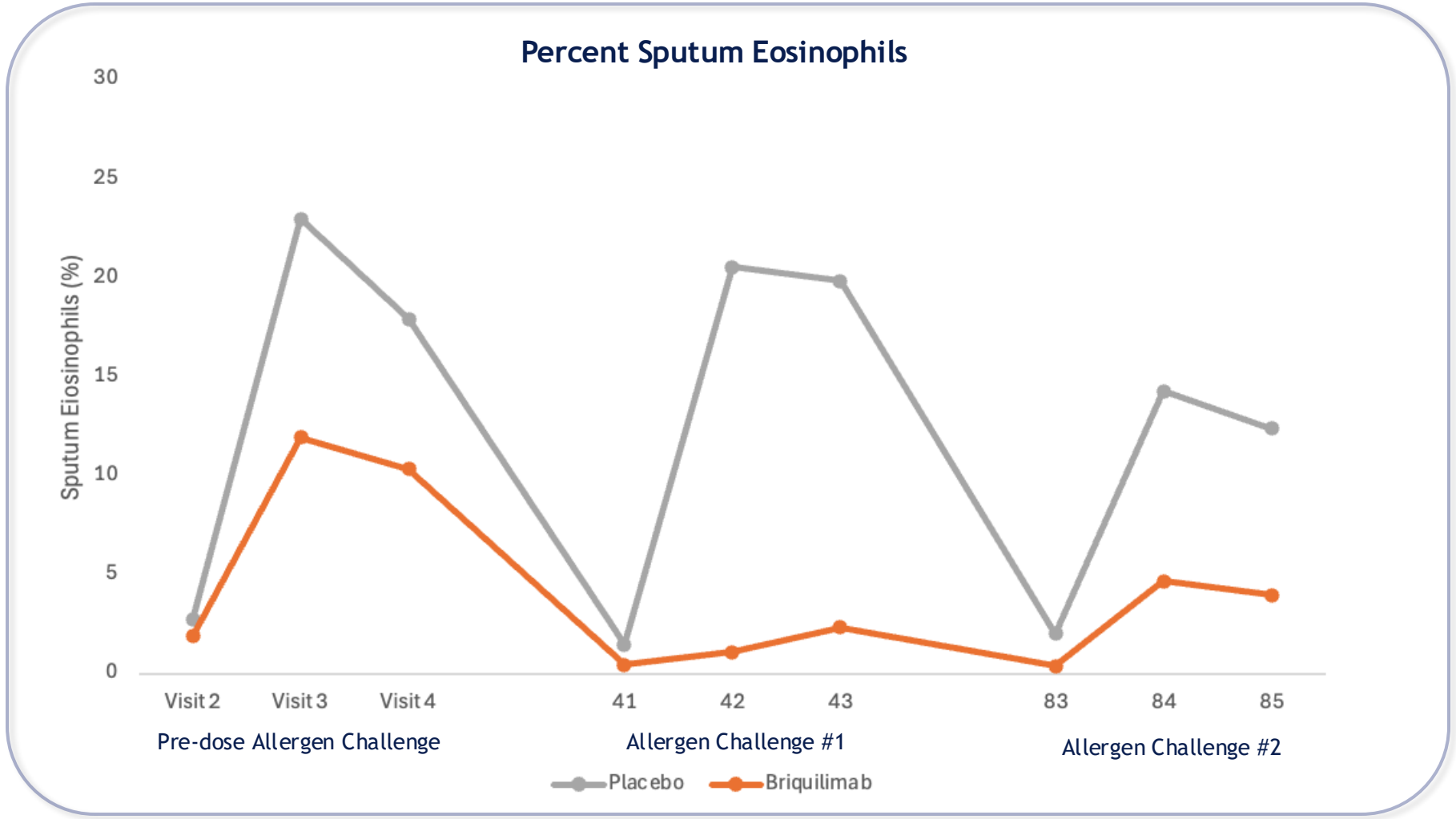

Preliminary Data Shows Briquilimab Was Well Tolerated with a Favorable Safety Profile in the ETESIAN Study

Number of Participants With	Briquilimab 180mg Single Dose (N=9) n (%)	Placebo (N=8) n (%)
Any TEAE	5 (55.6)	3 (37.5)
Any Serious Treatment-Related TEAE	0 (0)	0 (0)
Any TEAE Leading to Discontinuation of IP	0 (0)	0 (0)
Any Treatment-Related TEAE ≥ Grade 3	0 (0)	0 (0)

A single placebo subject had an unrelated hypersensitivity reaction, CoFAR grade 2
A single briquilimab subject had related rash and pruritus, both CoFAR grade 1

Data cutoff: Oct 17, 2025

Safety Observations Possibly Related to KIT Blockade Were Limited to Grade 1 Events

Adverse Event as reported term	Total Pooled Briquilimab (N=9) n (%)	Placebo (N=8) n (%)
Hair color changes	0 (0)	0 (0)
Skin discoloration	0 (0)	0 (0)
Taste change/Hypogeusia	1 (11.1)[1]	0 (0)
Neutrophil count decreased	1 (11.1)[2]	0 (0)

[1] CTCAE grade 1 dysgeusia resolved after 55 days
[2] CTCAE grade 1 white blood cell count decreased, resolving at time of study completion

Data cutoff: Oct 17, 2025

ETESIAN Study Summary

First time a potent KIT-specific therapeutic targeting mast cells has demonstrated potential for the treatment of asthma

PK/PD demonstrated deep & sustained biologic activity in key biomarkers, including:

- Serum tryptase
- Sputum eosinophils

Robust improvements observed in both aspects of the challenge study:

- Improvement in mean FEV1 response seen at week 6 and week 12 in allergen challenge
- Reductions in airway hyper-responsiveness observed in the methacoline challenge

Data suggest that mast cells play a central role in airway inflammation

- Given that the mast cell may be a central actor in both T2 high and T2 low disease, further development in the broader asthma population is warranted
- Next steps being evaluated, including potential dose-ranging/repeat dose studies in asthma

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Next Steps

Ron Martell, CEO

Program Status and Next Steps

Briquilimab development in mast-cell driven diseases continues to advance in multiple indications

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CSU - Briquilimab continues to demonstrate rapid onset, deep clinical response and favorable safety profile

- More than 24pt drop in UAS7 with 82% CR and 91% WC disease by week 4 with single dose (240mg SD & 360mg SD, n=11)
- Highly effective in OLE study at 180mg Q8W with 73% CR and 82% WC disease at 12 weeks (n=11)
- Continued favorable safety profile, repeat dose of 240mg Q8W and 240mg/180mg Q8W were generally well tolerated

CSU - Additional BEACON and OLE data expected in 1H Q1 2026 will enable Phase 2b dose selection

- Efficacy and safety data on additional patients enrolled in C8 (240mg Q8W) & C9 (240mg → 180mg Q8W)
- 24+ weeks of safety data on original patients enrolled in C8 and C9
- 20+ weeks of efficacy and safety data on ~40 CSU patients in OLE study (180mg Q8W)
- Consistent PK/PD profile will enable rapid and robust population exposure analysis and dose selection

CindU – Multi-dose data in CIndU expected in Q1 2026 data update

- 15+ weeks of efficacy and safety data on ~15 CIndU patients in OLE study (180mg Q8W)

Asthma – ETESIAN data provide strong proof of concept for briquilimab MOA in asthma

- The initial results demonstrate the potential to reduce both airway hypersensitivity and the release of eosinophils
- Both of which are key factors in managing chronic asthma and reducing exacerbations.
- Jasper evaluating next steps to advance briquilimab in chronic asthma

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NASDAQ: JSPR December 2025

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