Corporate presentation

January 2024

Mereo BioPharma

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Unlocking the potential of novel targets for rare diseases

Our mission is to improve the lives of people living with rare diseases

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Strategic principles guide our journey

- Acquire and develop programs in rare diseases with high prevalence – partner of choice for in-licensing
- Focus on our core competencies and experience in rare diseases
- Develop pipeline of rare disease programs and retain global or regional rights where possible (initially in Europe)
- Partner our programs where it makes strategic sense and target monetization of royalty streams for non-core programs

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A mid-late-stage company with validating partnerships

Achievements and fundamentals

Two rare disease programs in-licensed and ready for pivotal studies within five years

- **Setrusumab** for Osteogenesis Imperfecta (OI) in Phase 3 under a partnership with rare disease leader Ultragenyx
- **Alvelestat** for Alpha-1 Antitrypsin Deficiency-associated Lung Disease (AATD-LD) successfully completed Phase 2, with Phase 3 endpoints agreed in principle with FDA and EMA

Financial discipline delivers cash runway into 2026

- Cash runway into 2026: $62.4 million as of September 30, 2023
- Active cost management – runway through key inflection points
- Leverage investigator-led studies to expand data sets

A mid-late-stage company with validating partnerships

Corporate development
Management team with a proven track record in rare diseases and corporate development • Setrusumab acquired from Novartis and alvelestat in-licensed from AstraZeneca • Setrusumab partnered with Ultragenyx whilst retaining European rights • Navicixizumab global rights licensed to OncXerna and leflutrozole licensed to ReproNovo Upside potential from etigilimab (an anti-TIGIT antibody) and acumapimod (p38 MAP kinase inhibitor)

Late-stage clinical pipeline with core rare disease programs

Product candidate	Phase 1	Phase 2	Phase 3	
Setrusumab OI	Orbit (5 - <26 yrs old) Cosmic (2 - <7 yrs old)		ultragenyx pharmaceutical	Orphan drug designation in US and EU, PRIME (EU), Pediatric disease Priority Review Voucher
Alvelestat AATD-LD BOS			THE UNIVERSITY OF ALABAMA AT BIRMINGHAM National Center for Advancing Translational Sciences NATIONAL CANCER INSTITUTE	Orphan drug designation (US), Fast track designation (US)
Etigilimab Rare & Gyn-Onc Tumors OCCC**	ACTIVATE EON		FOCUS FUND	

**Ovarian Clear Cell Carcinoma

“It’s always a pleasure to come and speak with people who are actually making a difference on the ground and making a difference for people like myself and for others in the community. Because it is what you do that helps us to live the lives that we want and that we deserve.”

Thines Ganeshamoorthy, Trustee at the Brittle Bone Society, speaking at an event to mark Rare Disease Day 2023 at Mereo BioPharma.

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Setrusumab (UGX143)

Osteogenesis Imperfecta: a rare genetic bone condition with no FDA or EMA approved therapy

OIFE Topical Meeting
June 2023

A rare genetic bone condition with a high unmet need

Osteogenesis Imperfecta

- A rare genetic bone disease, mostly linked to a mutation in Type I collagen[1,2]
- Affects approximately 60,000 individuals[3] (pediatrics and adults) in the US and Europe
- Well-established Community groups (OIFE + national members and OIF)* are a key support and valued resource
- Potential market opportunity of >$1Bn[4]

Osteogenesis Imperfecta

- Frequent bone fractures, skeletal deformities, pain, respiratory and gastric problems
- No FDA / EMA approved therapy. Current standard of care, (bisphosphonates) has not been shown to reduce fractures – strong physician appetite for a proven, on-label therapy
- Symptoms often present from birth, leading to an early diagnosis
- OI is a progressive condition, without clear care pathways, especially for adult patients

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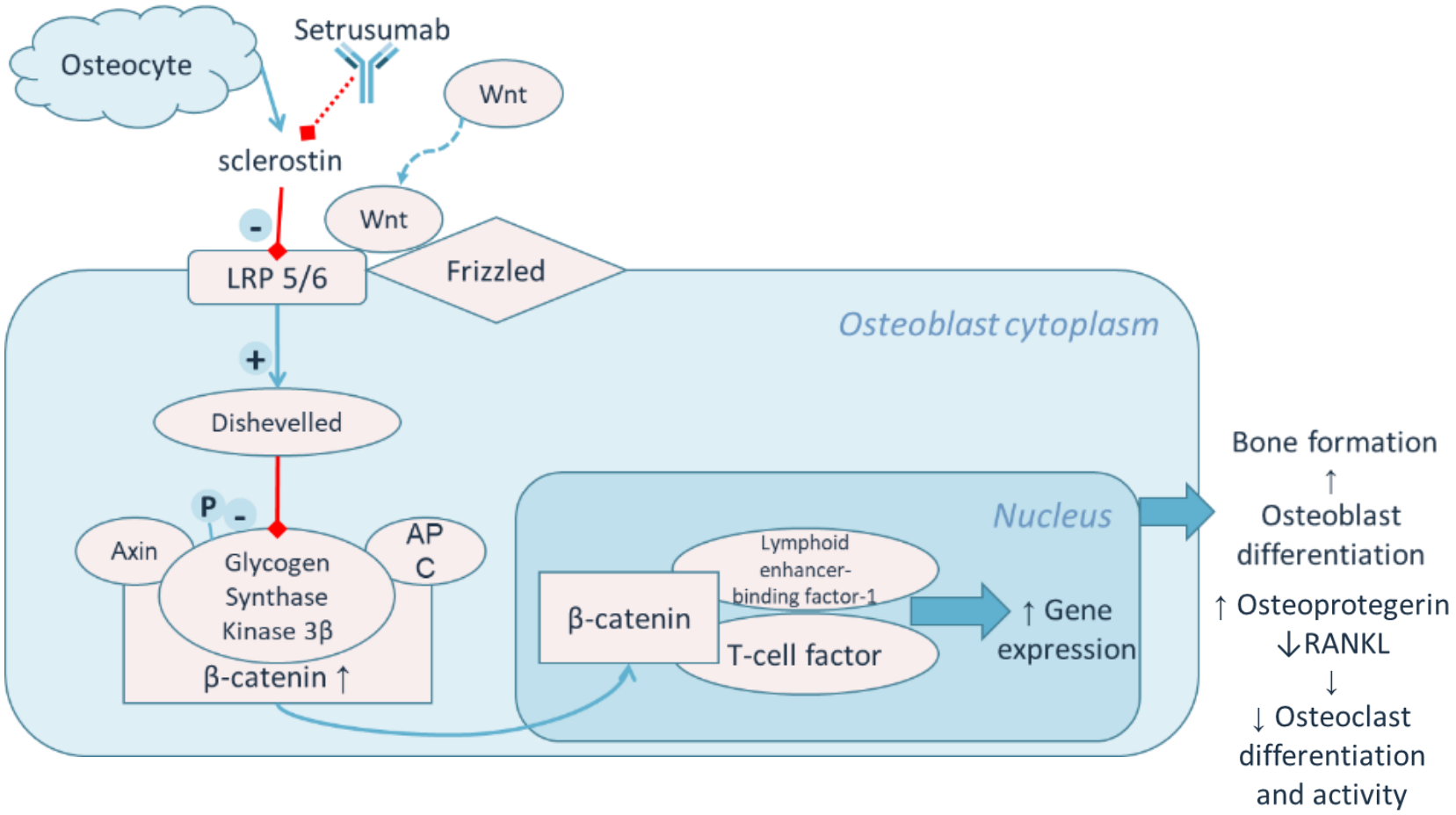
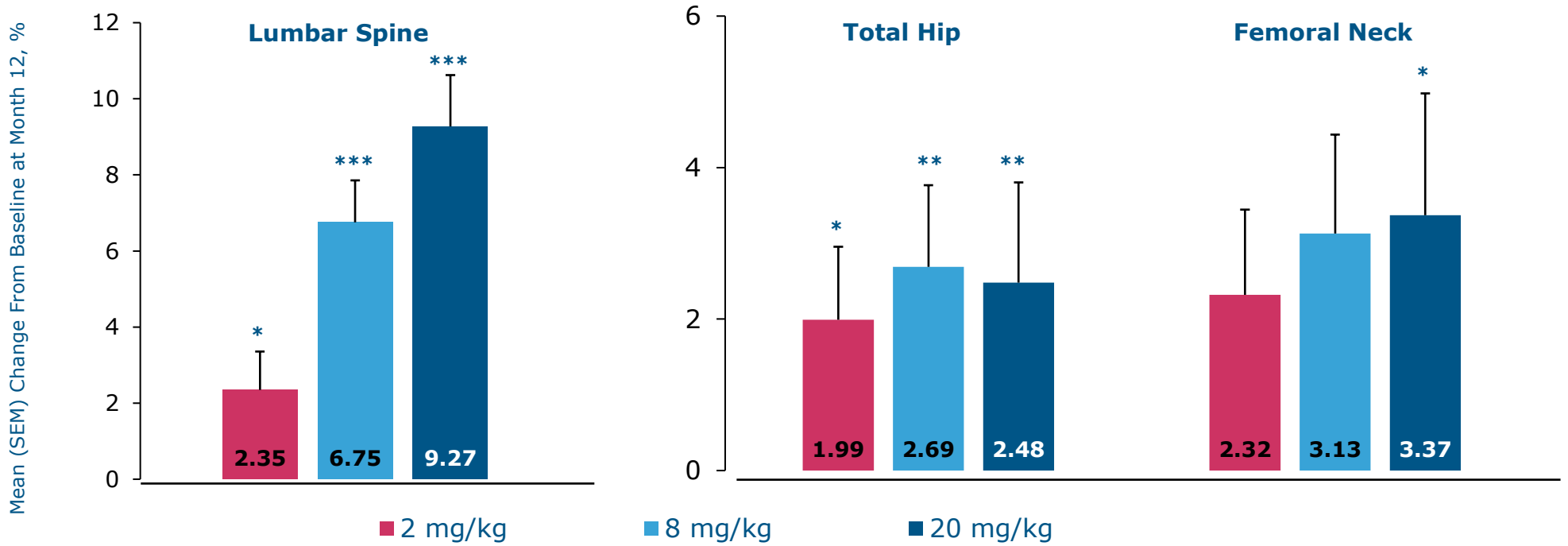
1. Based on Osteogenesis Imperfecta Foundation estimates; 2. Based on Orphanet estimates; 3. Internal BD forecast; 4. Based on Cantor Fitzgerald estimates of Net Peak Sales in the US and EU5
*OIFE: Osteogenesis Imperfecta Federation Europe; OIF: Osteogenesis Imperfecta Foundation

Setrusumab mechanism of action particularly well-suited for OI



Phase 2b ASTEROID study in adults with OI Types I, III and IV

Statistically significant dose-dependent increases in areal BMD by DXA following 12 months of setrusumab therapy



**p<0.05, **p<0.01, ***p<0.001 vs baseline based on an ANCOVA model with baseline values, treatment group and OI type as covariates.*
ANCOVA, analysis of covariance; BMD, bone mineral density; DXA, dual-energy X-ray absorptiometry; OI, osteogenesis imperfecta; SEM, standard error of the mean.
At the 20 mg/kg dose - increase in failure load (p=0.037) and stiffness at the radius (p= 0.022) as measured by finite element analysis (FEA).
Increase in trabecular bone score (TBS) – 3D bone architecture, helps predict fracture (p<0.001 at 8mg/kg and 20mg/kg).

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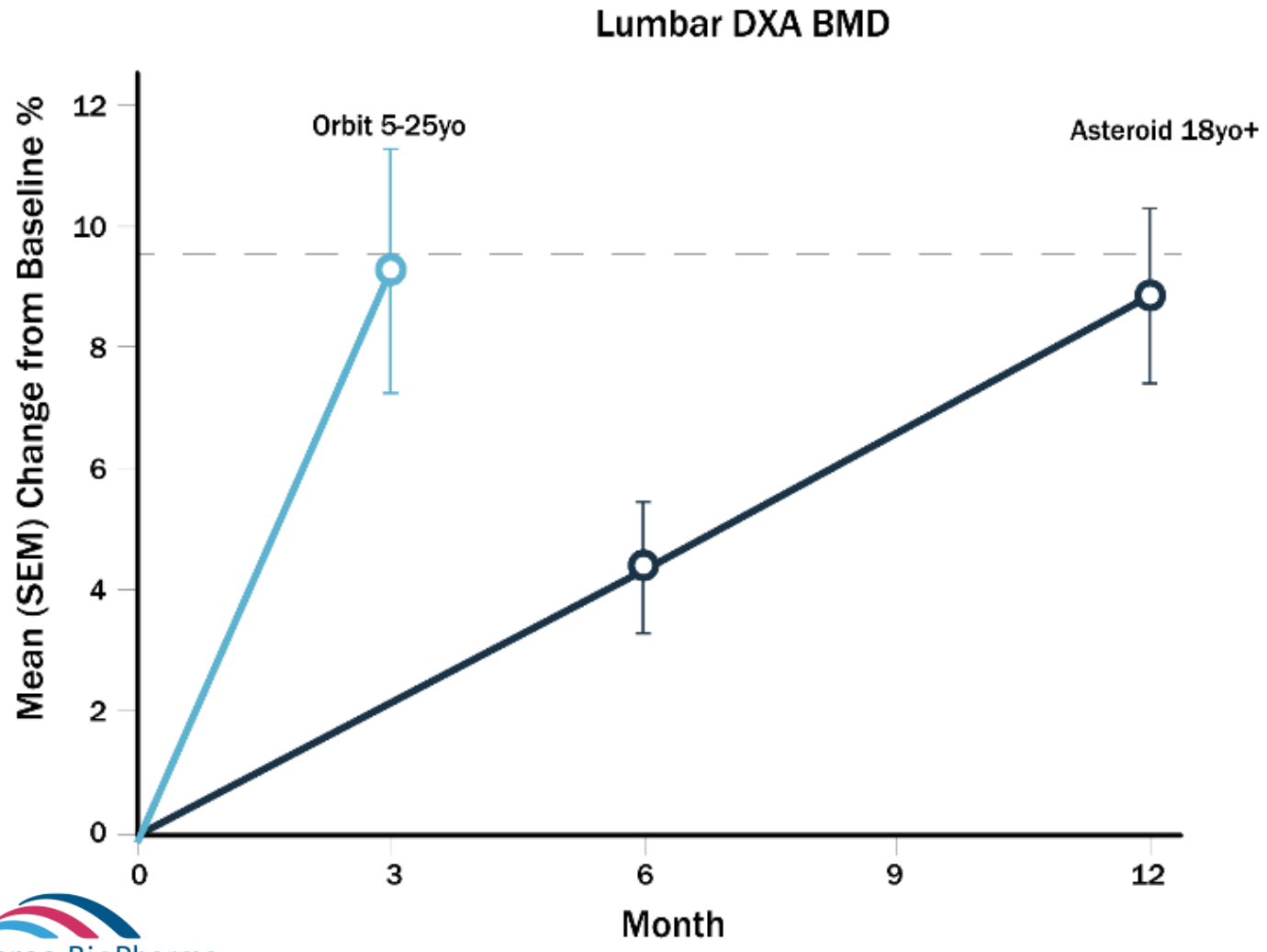
Glorieux F, *et al.* "Setrusumab for the treatment of osteogenesis imperfecta (OI): Results from the Phase 2b ASTEROID Study" ASBMR 2021; Abstract 1016.

Orbit Phase 2 study and Open Label Extension study design

Phase 2 designed to determine setrusumab dosing strategy based on PK/PD, safety, and available BMD data in subjects with OI	
Patients Enrolled 24 patients ages 5 yrs to <26 yrs with OI Types I, III, or IV and a confirmed *COL1A1* or *COL1A2* mutation. Intended to enroll 12 subjects of <30kg	**Stratification** Patients with at least 2 fractures over prior 24 months will be enrolled and randomization stratified by number of fractures in the prior 2 years (≤ 3 vs >3) and by age group
Dose Cohorts Subjects randomized 1:1 to receive 20 or 40 mg/kg of setrusumab administered by monthly infusion. **Open label extension study – subjects remain on allocated dose for 6 months then all switch to 20 mg/kg**	**Endpoints and data output** Evaluation of P1NP (propeptide cleavage product of procollagen for bone production), bone mineral density (by DEXA scan), PK parameters and safety. **Open label extension study – BMD, Z-score and fracture rate**

Younger patients in Orbit achieved increases in Lumbar DXA BMD at 3 months comparable to ASTEROID patients at 12 months



ORBIT Ph2, 20 mg/kg

ASTEROID, 20 mg/kg

- BMD Z-score change of +0.65 at 3 months for 20 mg/kg
- 1.0 Z-score is equal to 1 standard deviation of the population

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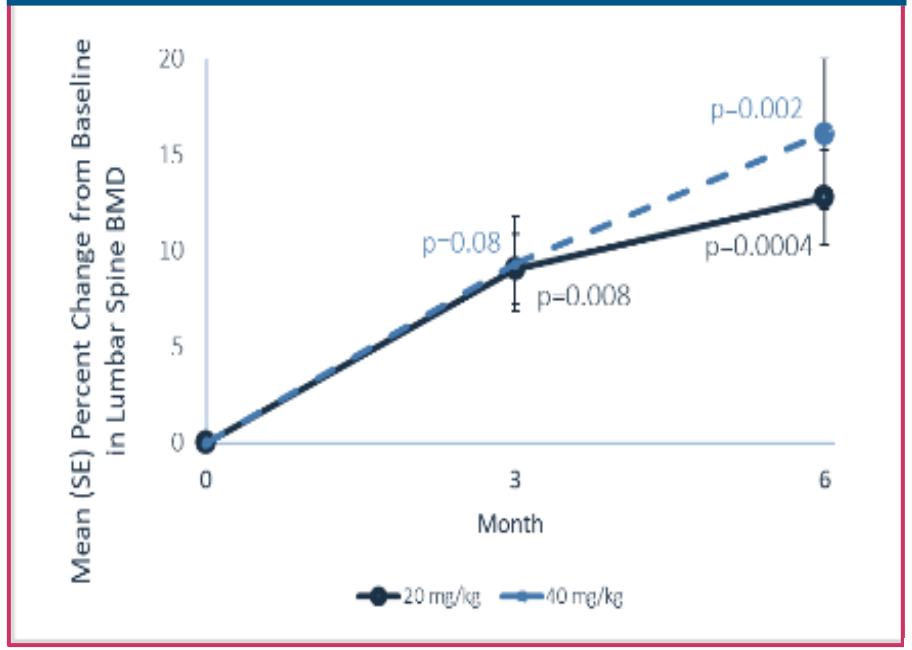
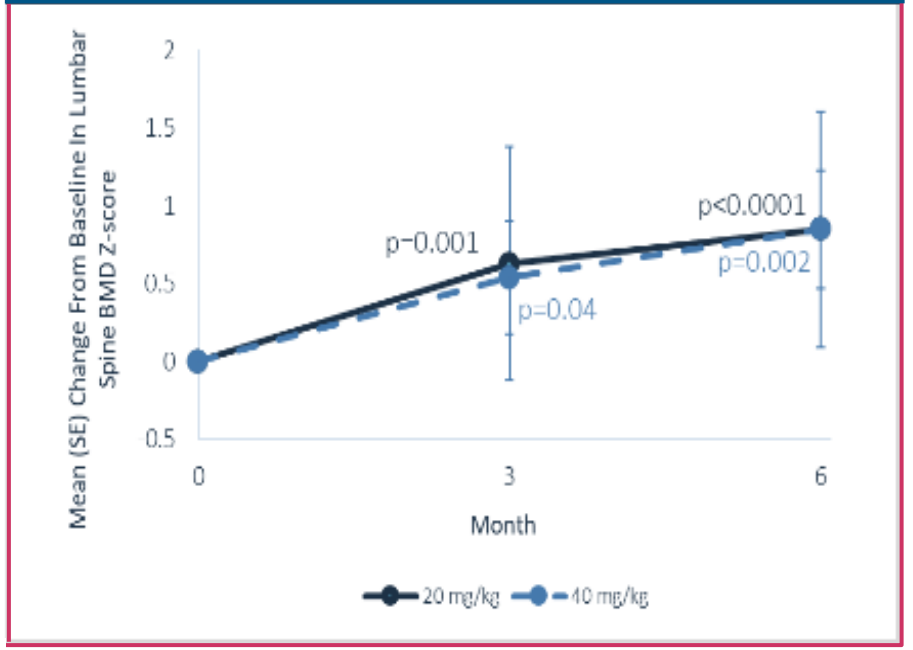
Continuous increase in BMD and Z-score through month 6[1]

Lumbar Spine BMD %Change from Baseline



P-values reflect change from baseline

Lumbar Spine BMD Z-Score Change from Baseline



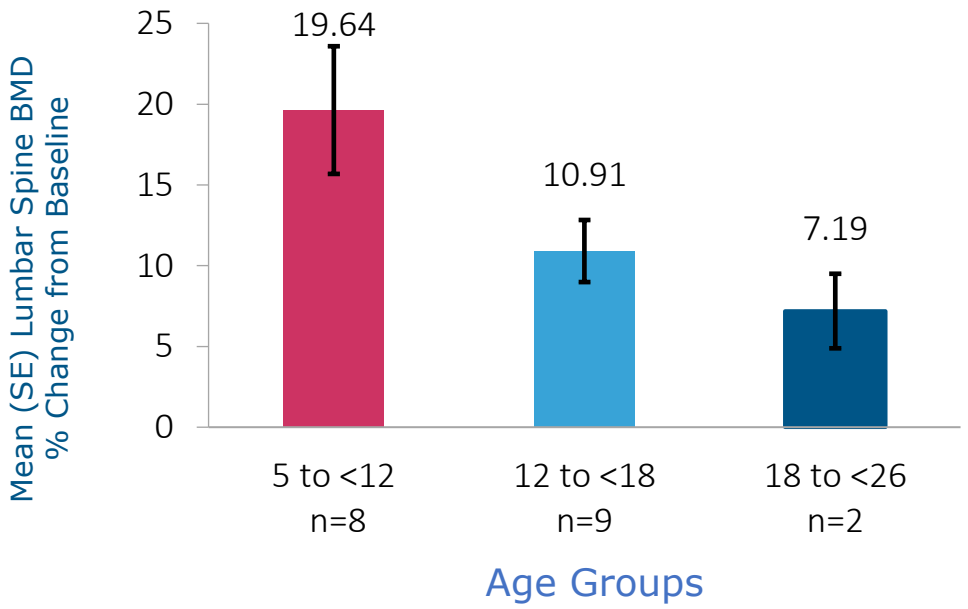
P-values reflect change from baseline

- No significant differences were observed between setrusumab dose groups
- Percentage change in BMD at month 6:
  - 20 mg/kg group=13%
  - 40 mg/kg group=16%
- Change in BMD Z-score at month 6:
  - Both dose groups = 0.85

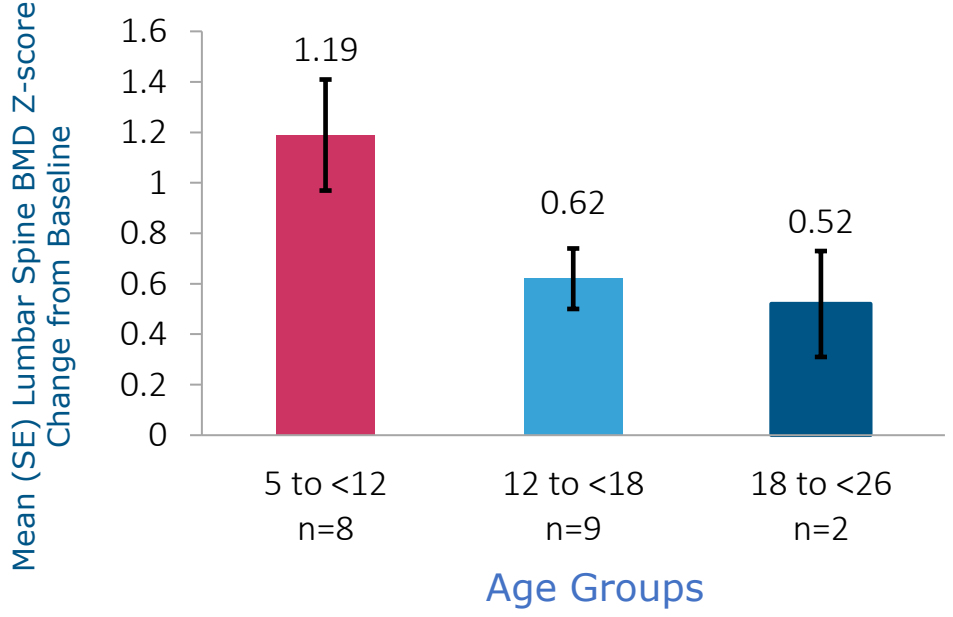
1. Lewiecki EM et al. Evaluating Setrusumab for the Treatment of Osteogenesis Imperfecta: Phase 2 Data from the Phase 2/3 Orbit Study. Presented at the American Society for Bone and Mineral Research; October 13–16, 2023; Vancouver, BC, Canada. Abstract/Poster LB SAT-650

Increase in BMD observed in all age groups,[1,2] Greatest increase in patients 5-12 years of age

Lumbar Spine BMD Percent Change from Baseline to Month 6[2]



Lumbar Spine BMD Z-score Change from Baseline to Month 6[1]



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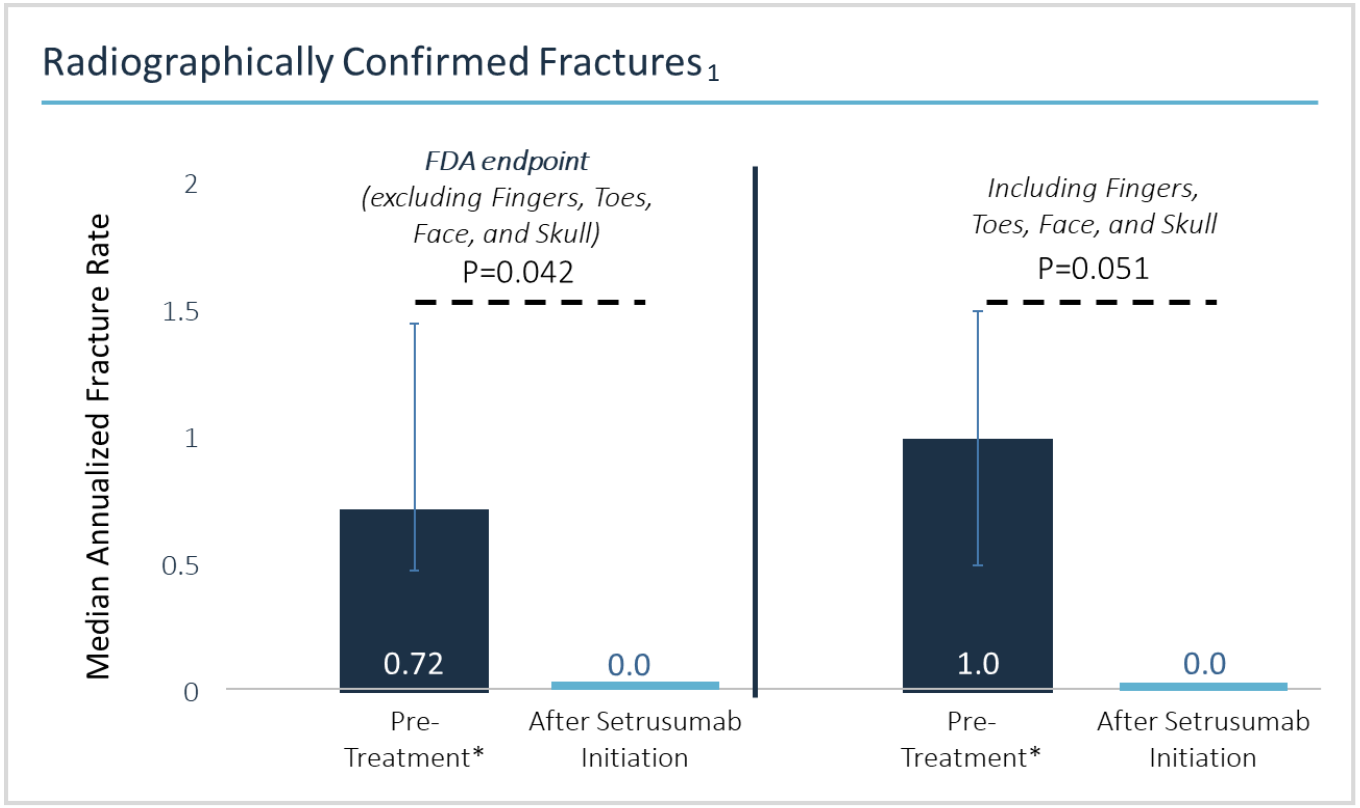
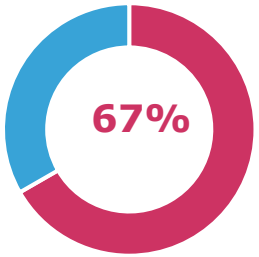
1. Ph2 ORBIT study data on file.
2. Lewiecki EM *et al*. Evaluating Setrusumab for the Treatment of Osteogenesis Imperfecta: Phase 2 Data from the Phase 2/3 Orbit Study. Presented at the American Society for Bone and Mineral Research; October 13–16, 2023; Vancouver, BC, Canada. Abstract/Poster LB SAT-650

Annualized Fracture Rate post-treatment with Setrusumab[1]



- Median total confirmed Annualized Fracture Rate post-treatment is 0.0
- **67% reduction in annualized fracture rate, excluding fingers, toes, face, and skull**
- Mean treatment duration of 9 months (6 – 16 months) in 24 patients

$$\frac{\text{median(AFR post - AFR pre)}}{\text{median(AFR pre)}} = \frac{-0.48}{0.72} =$$



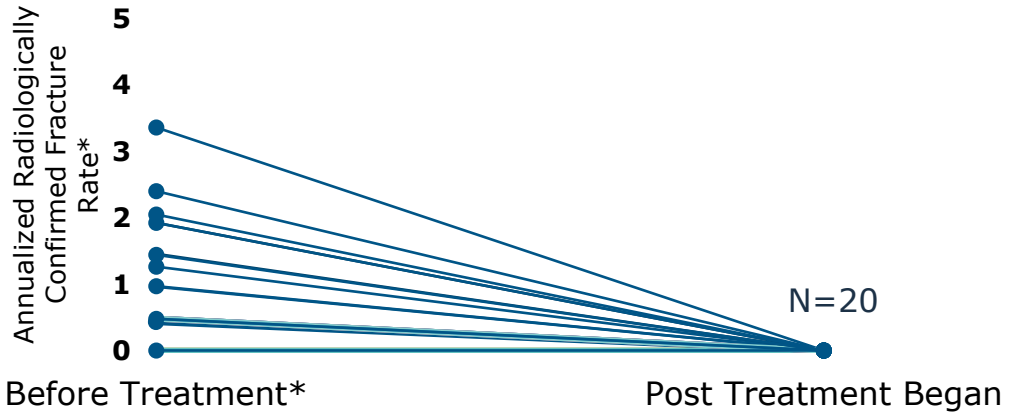
The Phase 2 portion of Orbit was not statistically powered to compare annualized fracture rates between dose groups.
*Pre-Treatment period includes fractures before screening based on medical record review and patient report, and fractures between screening and first dose

1. Lewiecki EM et al. Evaluating Setrusumab for the Treatment of Osteogenesis Imperfecta: Phase 2 Data from the Phase 2/3 Orbit Study. Presented at the American Society for Bone and Mineral Research; October 13–16, 2023; Vancouver, BC, Canada. Abstract/Poster LB SAT-650

20/24 patients did not have radiographically confirmed fractures after 6 months treatment with Setrusumab[1]

Radiographically confirmed fractures

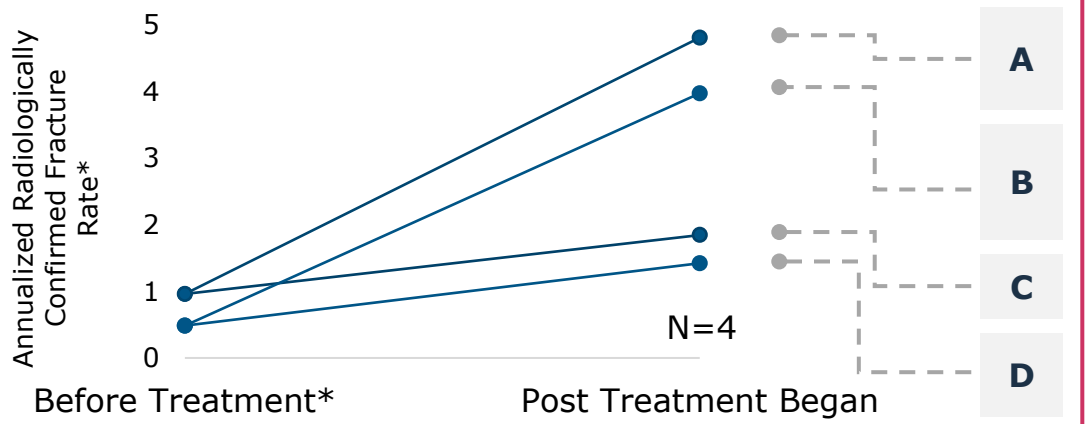
Patients without confirmed fractures by 6 months[1]



20/24 patients had no radiographically confirmed fractures despite significant historical fracture rates

*Pre-Treatment period includes fractures before screening based on medical record review and patient report, and fractures between screening and first dose

Patients with confirmed fractures by 6 months[1]



A. Slipped on ice (at 1.6 months); stubbed toe (at 6 months)
B. Fell off tricycle (2 fractures) (at 5.5 months)
C. Bending over in bed (at 1.1 months)
D. Tripped and fell on hand (at 7.7 months)

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1. Lewiecki EM et al. Evaluating Setrusumab for the Treatment of Osteogenesis Imperfecta: Phase 2 Data from the Phase 2/3 Orbit Study. Presented at the American Society for Bone and Mineral Research; October 13–16, 2023; Vancouver, BC, Canada. Abstract/Poster LB SAT-650

Safety evaluation shows setrusumab is well tolerated

No treatment-related SAEs	No unexpected adverse events or safety concerns	No subject discontinued treatment for any adverse event	No drug-related hypersensitivity reactions

Most common adverse events (AEs) reported*[1]

Adverse Event	Phase 2 Patients (N=24)
Infusion-related event (not hypersensitivity)	7 (29%)
Headache	3 (13%)
Abdominal discomfort	1 (4%)
Infusion site pain	1 (4%)
Bone pain	1 (4%)
Upper respiratory tract infection	1 (4%)

*All related adverse events were mild to moderate in severity

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1. Lewiecki EM et al. Evaluating Setrusumab for the Treatment of Osteogenesis Imperfecta: Phase 2 Data from the Phase 2/3 Orbit Study. Presented at the American Society for Bone and Mineral Research; October 13–16, 2023; Vancouver, BC, Canada. Abstract/Poster LB SAT-650

Patient with increased mobility after 17 months on study

Six-year-old male with Type IV OI

In addition…other high impact events did not result in fracture

Other high impact events:

- High-impact motor vehicle accident at Month 5.5 of treatment resulted in **no fractures**
- Patient fell down a flight of stairs with a backpack at Month 4.7 of treatment **Evaluated: No fractures**

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Orbit study – Phase 3*

Designed to evaluate the efficacy and safety of setrusumab vs. placebo in children and young adults with OI	
Up to 195 subjects ages 5 to < 26 years with OI Types I, III, or IV and a confirmed *COL1A1* or *COL1A2* mutation. Enrolling at 50 sites in 12 countries including USA and Europe.	Patients with at least 2 fractures over prior 24 months will be enrolled and randomization, stratified by number of fractures in the prior 2 years (≤ 3 vs >3) and age group.
Subjects randomized 2:1 to receive 20 mg/kg of setrusumab administered by monthly infusion or placebo administered IV QM. Study is double blinded.	Primary efficacy endpoint of **annualized clinical fracture rate**. Treatment period of up to two years. Interim analyses being planned to evaluate for overwhelming efficacy and updates in process that may accelerate timeline.

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*Clinical Trials Identifier: NCT05125809

Cosmic study – Phase 3*

Designed to evaluate the efficacy and safety of setrusumab vs. bisphosphonates in young children with OI	
Approximately 65 subjects ages 2 to < 7 years with OI Types I, III, or IV and a confirmed *COL1A1* or *COL1A2* mutation. Enrolling at sites including in the USA and Europe.	Patients with at least 2 fractures over prior 24 months will be enrolled and randomization, stratified by number of fractures in the prior 2 years (≤ 3 vs >3) and age group.
Subjects randomized 1:1 to receive 20 mg/kg of setrusumab administered by monthly infusion or existing bisphosphonate by infusion per investigator discretion. Study is open label.	Primary efficacy endpoint of **annualized clinical fracture rate**. Treatment period of up to two years but with open label design.

*Clinical Trials Identifier : NCT05768854

Mereo – Ultragenyx partnership

Key terms
• Signed in December 2020 • Ultragenyx leads and funds the global development plan, including CMC • Mereo retains European rights (including UK) and Ultragenyx the USA and Rest of the World rights • Mereo received $50M upfront with potential additional $254M in regulatory and commercial milestones • Mereo received first milestone payment of $9M on first patient dosed in Orbit Phase 3 study (July 2023) • Ultragenyx pays Mereo tiered double digit % royalties on net sales in Ultragenyx territories • Mereo pays Ultragenyx fixed double digit % royalty on net sales in Mereo territories

Mereo – Ultragenyx partnership and long-term plan

Mereo territories and focus

- Groundwork for reimbursement of setrusumab in Europe and UK
- Intensive engagement with highly networked OI specialized treating physicians indicates high level of interest in safe & effective on-label treatment
- Collaborating with OIFE and OIF on IMPACT Survey[1], largest data set on OI; will inform reimbursement
- Project SATURN – collaborative European Real World Evidence data collection
- Pilot EUnetHTA process – 9 EU countries individual HTA* bodies in one forum - future evidence requirements; advice from payors through MoCA on a rolling basis

Significant market opportunity

- OI affects approximately 60,000 pediatrics and adults in the US and Europe
- Relevant rare bone analog X-linked hypophosphatemia (XLH), a rare inherited form of rickets – approximately 48,000 pediatrics and adults – Crysvita launched 2018/2019 in US and EU
- Crysvita sales forecast for 2023 currently $925M in North America and EMEA with $230M in revenue in EMEA in 2022***
- Initial feedback indicates responsible Crysvita-like pricing potentially acceptable to European healthcare systems

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1. Rapoport, M., Bober, M.B., Raggio, C. et al. The patient clinical journey and socioeconomic impact of osteogenesis imperfecta: a systematic scoping review. Orphanet J Rare Dis 18, 34 (2023)
* Health Technology Assessment
** Mechanism of Coordinated Access
***Kyowa Kirin Co., Ltd. Appendix to the Consolidated Financial Summary (IFRS) Fiscal 2023 Interim (January 1, 2023 - June 30, 2023)

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Alvelestat (MPH966)

Alpha-1 Antitrypsin Deficiency-associated Lung Disease: a rare progressive lung disease with high unmet need

Alpha 1 Support Group UK Information Day September 2023

AATD-LD: a rare progressive lung disease with high unmet need

Lack of AAT results in risk of progressive lung damage and early onset emphysema

AATD-LD

- Presents age 20 to 50, shortness of breath, cough, reduced exercise tolerance
- Severe deficiency patient population estimates: ~50,000 in North America and ~60,000 in Europe and the UK, of which 60-80% develop lung disease[1]
- Increasing diagnosis rate

High unmet need

- Currently COPD treated and lifestyle changes
- Specific treatment – intravenous plasma-derived augmentation therapy:
  - Clinical efficacy not uniformly recognized
  - IV administration burden
  - Optimal dose uncertain
  - Reimbursement access

Significant market opportunity

- US AAT augmentation revenues reached $1.2bn in 2021[4]
  - US patients (weekly I.V.) $100-150k/year[5]
  - AATD products forecast to reach $3.2bn by 2031[4]
- Europe AAT augmentation not widely reimbursed as lack of clinical outcomes data
- Potential first oral treatment

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1. Blanco I et al. 2017. alpha-1 antitrypsin Pi*Z gene frequency and Pi*ZZ genotype numbers worldwide: an update. *Int J COPD*: 12 561-569
2. Evercore estimate
3. Based on Cantor Fitzgerald estimates of Net Peak Sales in the US and EU5
4. GlobalData estimate
5. Evercore estimate

Alvelestat – a potent, oral inhibitor of Neutrophil Elastase

Healthy

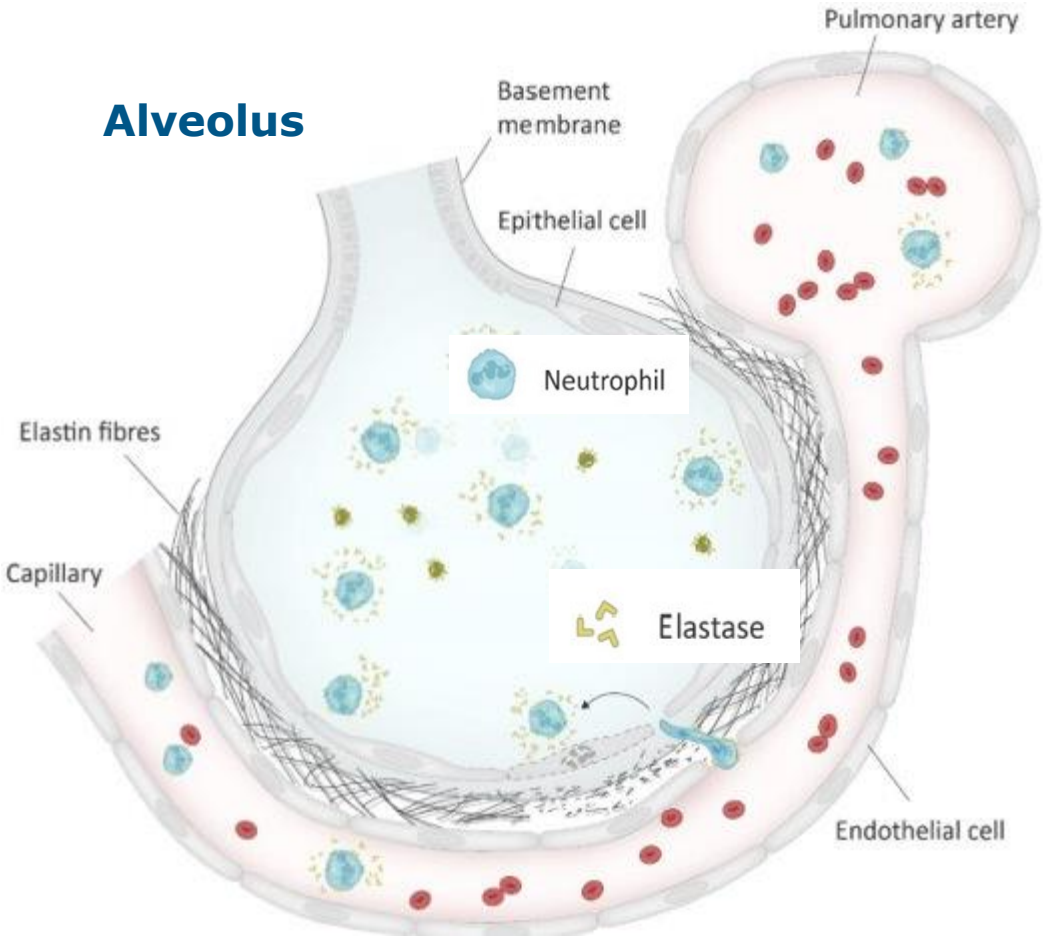
- Alpha-1 antitrypsin (AAT) produced in the liver, released to blood and lungs
- AAT protects from Neutrophil Elastase (NE) – a protease that drives tissue destruction in lung

AAT Deficiency

- Lack of AAT – unopposed NE and progressive lung damage initiating in small airways/alveoli

Alvelestat

- Specific NE inhibitor – effective lung penetration
- Twice daily dosing provides sustained >90% inhibition in AATD



NE breakdown of protein releases **Aa-val^{360}**

Breakdown of elastin releases **desmosine**

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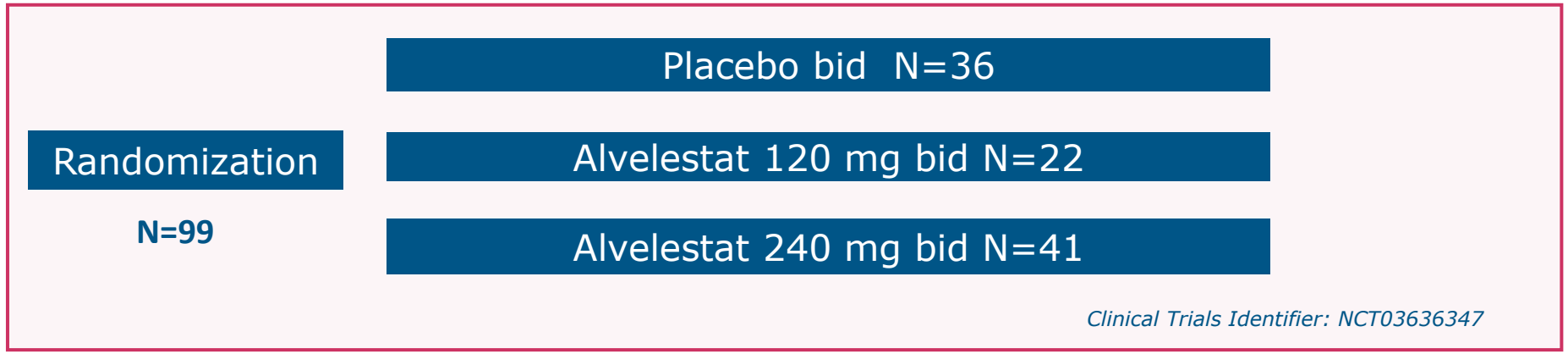
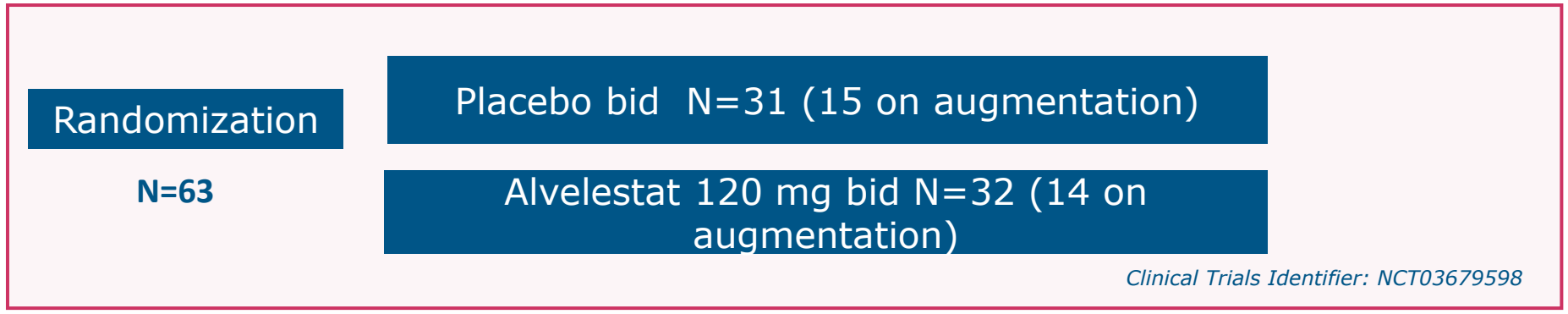
Two Phase 2 studies of alvelestat in AATD-Lung Disease completed

ASTRAEUS – Enrolled PI*ZZ patients **not** on augmentation, 12 weeks



ATALANTa Investigator-led study – Mark Dransfield, University of Alabama at Birmingham
Enrolled PI*ZZ, PI*SZ and PI*Null patients including those on augmentation, 12 weeks



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THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

NIH National Center for Advancing Translational Sciences

Funded by NCATS

ALPHA-1 FOUNDATION

Comparison of ATALANTa and ASTRAEUS patient populations

ATALANTa was a US study, ASTRAEUS enrolled predominantly in EU

- Augmentation available in the US unlike in many EU countries and the UK
- Augmentation population in ATALANTa is similar to the population enrolled in ASTRAEUS
- Non-Augmentation population in ATALANTa has earlier-stage lung disease than in ASTRAEUS

Parameter At Baseline (median)	ATALANTa*		ASTRAEUS Non-Augmentation
	Augmentation	Non-Augmentation	
FEV1 (% predicted)	69.76	89.28	59.04
SGRQ Total**	33.69	19.62	32.24
SGRQ Activity	45.38	25.49	53.26

*In ATALANTa 76% of total enrolled were Pi*ZZ
**SGRQ scores out of 100; lower SGRQ scores equates to better health status

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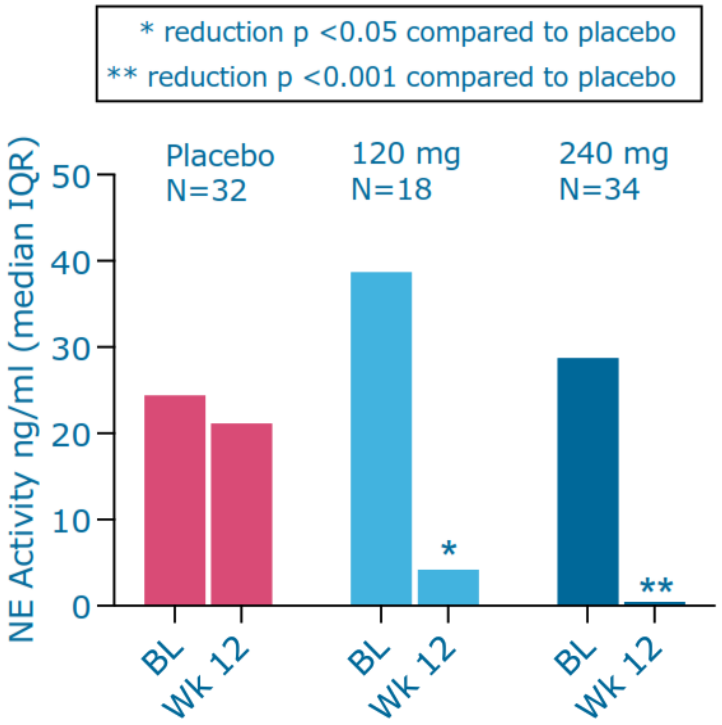
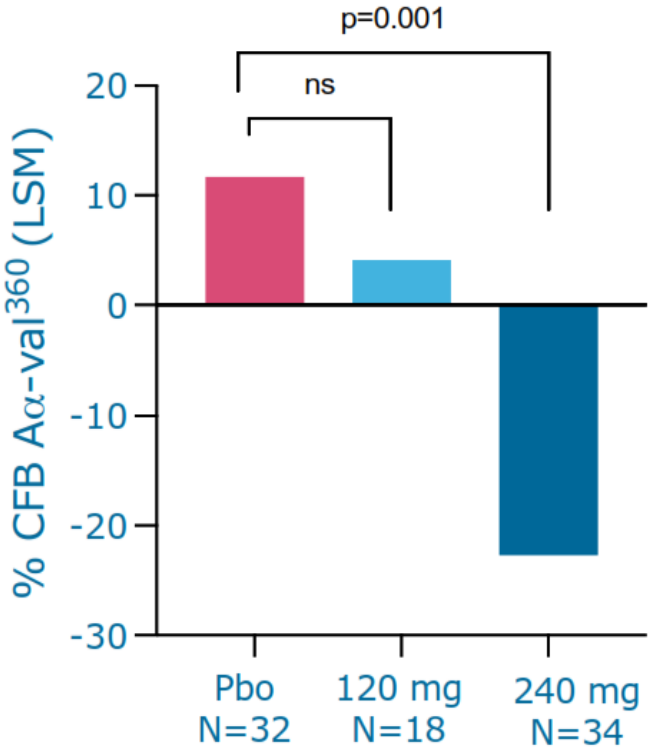
ASTRAEUS Phase 2 study – Dose-related effects on Neutrophil Elastase activity and Disease Activity Biomarkers by 12 weeks

Neutrophil Elastase

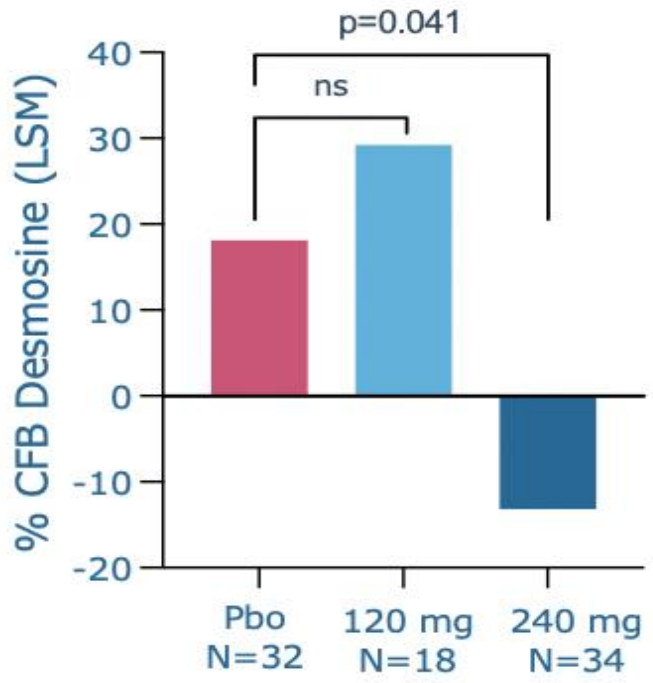


0.5 ng/ml reflects lower limit of detection of assay

Aα-Val360



Desmosine



- Significant suppression of NE at both doses
- > Sustained 90% suppression of blood NE activity at 240 mg dose
- Only the 240 mg dose significantly reduced other biomarkers

Per protocol analysis

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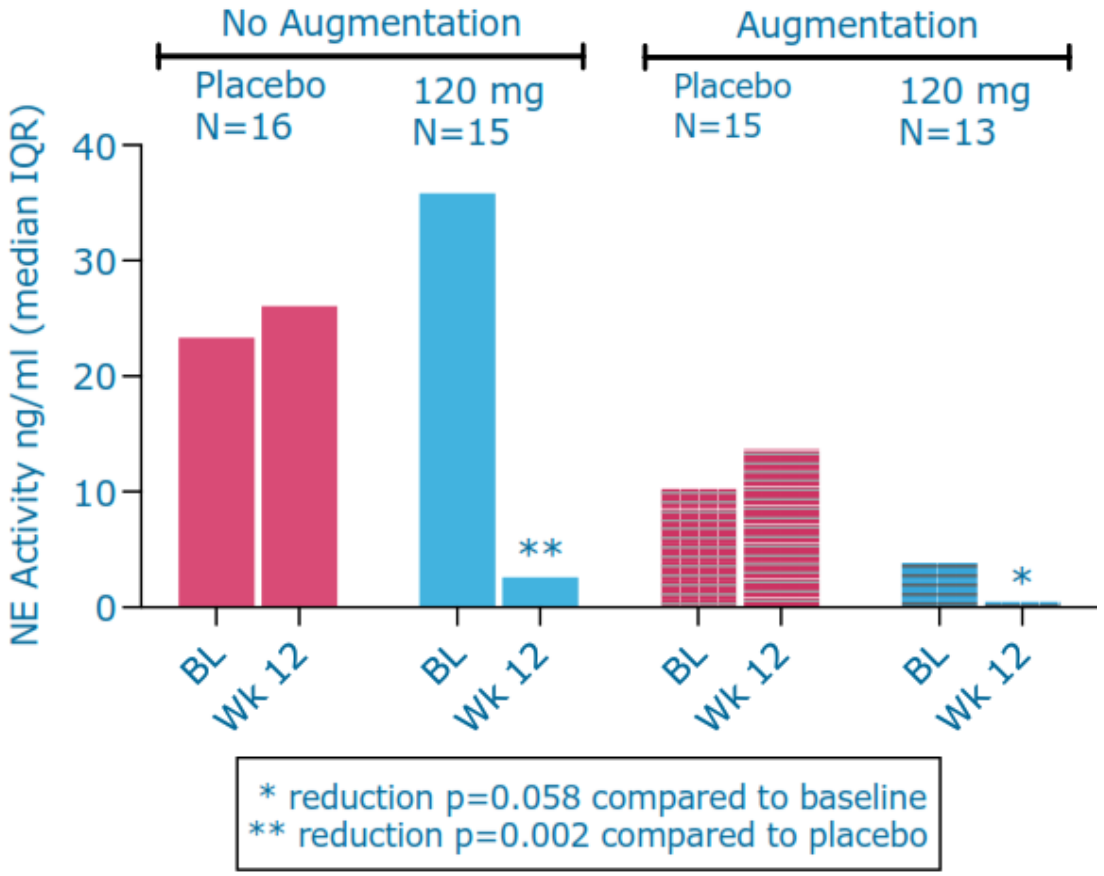
Biomarker data from ATALANTa confirm dose selection for Phase 3

ATALANTa Phase 2 Study

- Addition inhibition of NE activity observed in patients on augmentation therapy
- With 120 mg dose a significant change (reduction) from baseline in Aα-Val^{360} (p=0.03) observed
  - Improved compared to ASTRAEUS data, potentially reflecting earlier stage population
- Consistent with ASTRAEUS data at 120 mg dose – no significant change in desmosine
- Data confirm 240 mg dose twice daily for the pivotal Phase 3 study



0.5 ng/ml reflects lower limit of detection of assay

Full Analysis Set

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Phase 3 endpoints

Agency	Phase 3 endpoints	Phase 2 data to support Phase 3 plan
European Medicines Agency (EMA)	Change in CT density P<0.1 could be acceptable	• Change in desmosine observed at 240 mg dose in ASTRAEUS study • Significant correlation of desmosine change to CT density change
U.S. Food and Drug Administration (FDA)	Change in SGRQ Total Score as primary endpoint 'Functional assessment' as key secondary endpoint Initial SGRQ validation plan agreed with FDA (DCOA)	• Change observed in ATALANTa study of patients with earlier stage diagnosis • Change observed in patients with a desmosine response across both Phase 2 studies

Based on Phase 2 studies to inform the enrolled population, Global Phase 3 study of ~220 participants with 18 months duration

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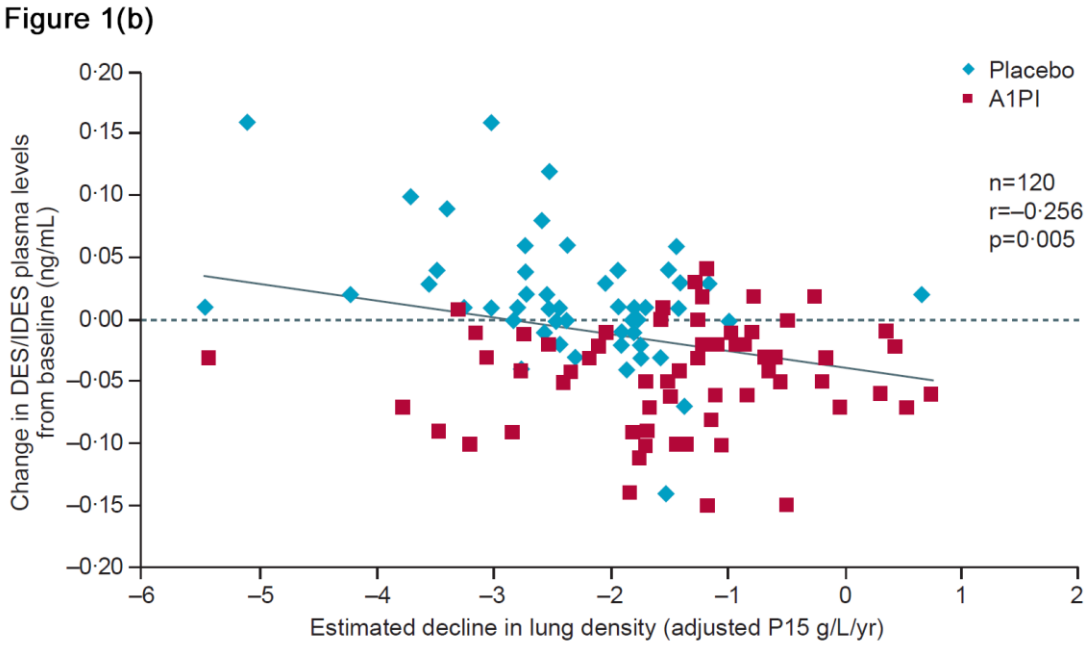
CT-density: Linking ASTRAEUS data to the RAPID study

Reduction in the biomarker desmosine for 240 mg alvelestat at 12 weeks equivalent to Augmentation therapy at 12 months

		Augmentation therapy*	Alvelestat (240mg, ASTRAEUS)
Desmosine (absolute reduction from baseline, mean)	Month 3	-0.013 ng/ml	**-0.028 ng/ml†**
	Month 12	-0.031 ng/ml	Study duration 12 weeks

Significant correlation of change in desmosine at 2 years and lung density decline by CT*



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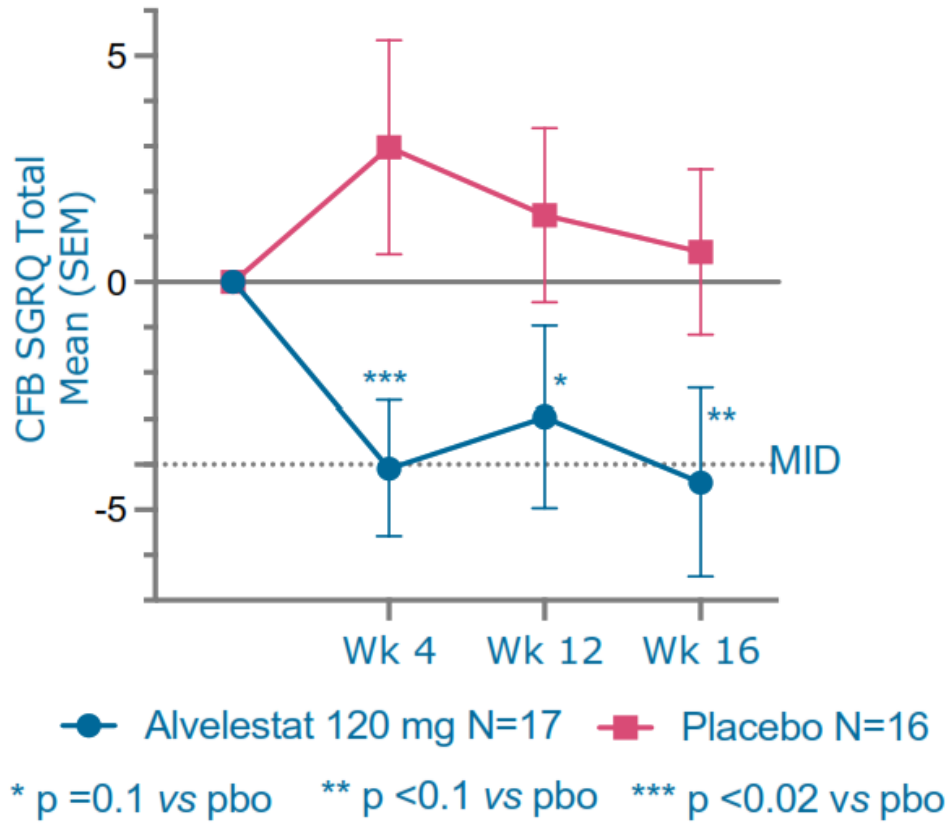
* Ma et al. *Chronic Obstr Pulm Dis*. 2017;4(1):34-44
† Per protocol analysis

St George's Respiratory Questionnaire (SGRQ)

- Validated patient reported outcome – recognized by FDA
- Total Score comprises Activity, Symptoms and Impacts; Activity key driver of quality-of-life deterioration in AATD
- ATALANTa study – greater effect in non-augmentation subgroup with earlier stage lung disease raising potential to use either Total or Activity Domain in Phase 3. Between group changes at week 12:
  - **SGRQ Total** = -4.7 (P=0.10 vs placebo)
  - **SGRQ Activity** = -10.0 (P=0.01 vs placebo)
- Across both Phase 2 studies, patients who had a >5% reduction in desmosine saw greatest SGRQ benefit – in both SGRQ Total Score and the SGRQ Activity Domain Score†
  - This effect was also observed for the COPD Assessment Test (CAT), another validated patient-reported quality of life tool

ATALANTa study (non-augmentation subgroup) – Change in SGRQ Total Score



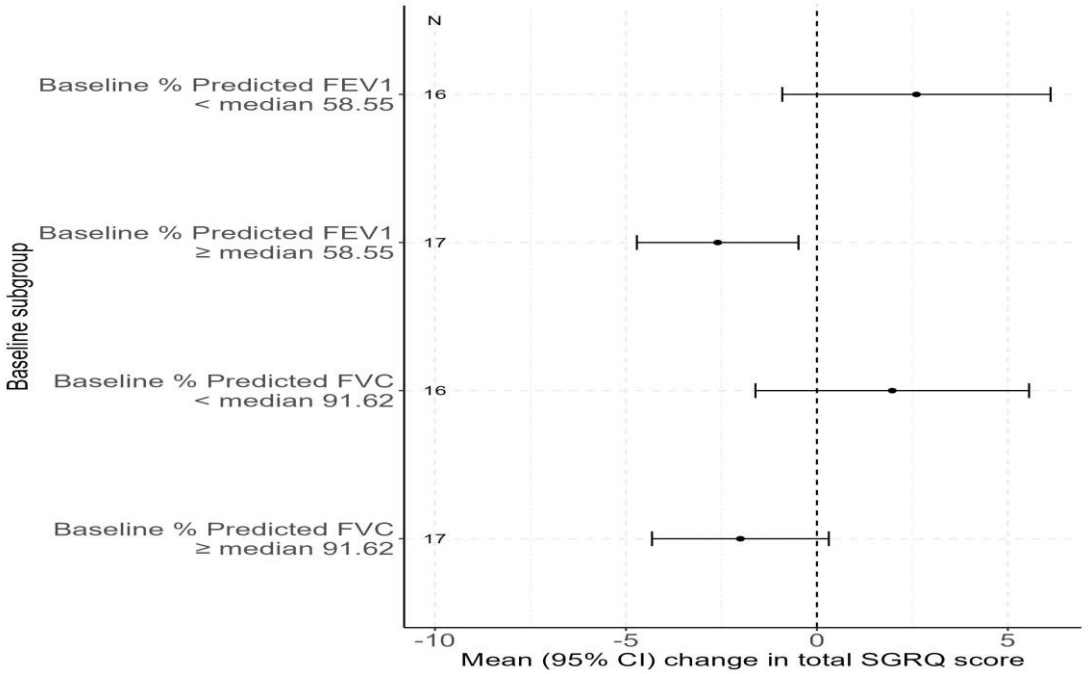
†Parkin Am J Respir Crit Care Med 2023;207:A2844

MID= Minimal Important Difference for SGRQ Total

Earlier stage patients – greater SGRQ change and potentially FEV1

ASTRAEUS Study

In addition to effects observed in earlier stage patients in the ATALANTa study, *post hoc* analysis of baseline characteristics of ASTRAEUS and **SGRQ Total** change shows earlier stage patients also had the greatest change

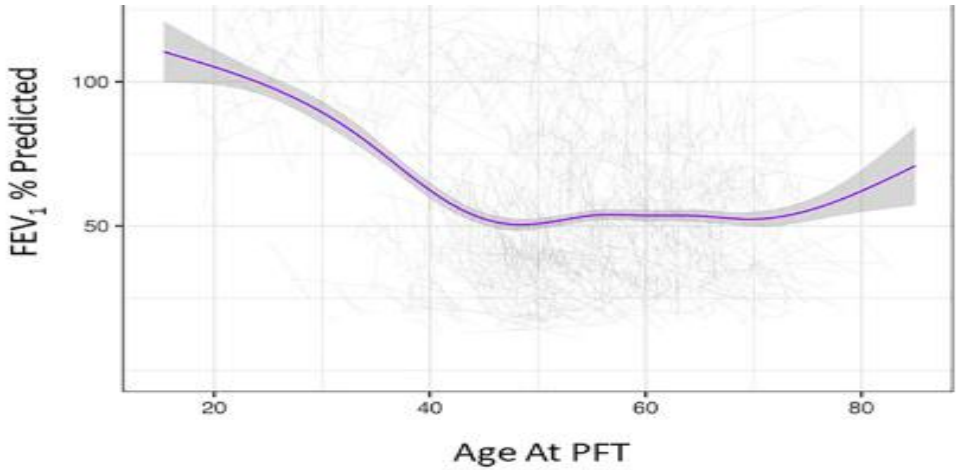


Fraughen et al, Nov 2023*

Multinational registry retrospective analysis (N=615, N=365 never received AAT). **FEV1** decline highest 20-50 years old

AAT vs never AAT: significant difference in **FEV1** decline with GOLD stage 2 (50%<FEV1<80%) at time of starting AAT (P=0.007)

"Detecting people with severe AATD as early as possible and initiating therapy before the establishment of COPD should be the goal to improve survival"



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*Fraughen et al, Am J Resp Crit Care Med 2023 Nov 1;208(9):964-974

Consistent safety data in AATD-LD in ASTRAEUS and ATALANTa

	ATALANTa		ASTRAEUS		
	Alvelestat 120mg N=32 subjects (%)	Placebo N=31 subjects (%)	Alvelestat 120mg N=22 subjects (%)	Alvelestat 240mg N=40 subjects (%)	Placebo N=36 subjects (%)
SAE	0	0	1 (4.5)	3 (7.5)	0
Adverse Events of Special Interest	5 (15.6)	11 (35.5)	5 (22.7)	11 (27.5)	7 (19.4)
Infections requiring antimicrobial therapy	5 (15.6)	11 (35.5)	5 (22.7)	10 (25.0)	7 (19.4)

Adverse Events of Special Interest

- Across both phase 2 studies, no discrepancy was observed in number of infections vs placebo
- Single case (240 mg) of prolonged QTc in subject with history of prolonged QTc on concomitant therapy with known QTc effects
- Single case (240 mg) of elevated ALT>5xULN without raised bilirubin; asymptomatic and resolved. No Hy's Law cases
- Lab monitoring and IDMC review did not identify any safety signals of concern in either study

Adverse events

- Headache was most frequent adverse event, generally mild or moderate and resolving on continued dosing. 3 cases reported as SAEs (240 mg) but evidence from ISS study using 240 mg shows reduction of headache frequency with a dose-escalation regime

Including legacy studies, safety database of 1,268 patients exposed to alvelestat

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Development strategy for Phase 3 pivotal clinical trial

Clinical data	Earlier stage severe PI*ZZ patients appear to have greater reductions in SGRQ Total and Activity Literature shows that earlier stage patients with higher FEV_1 may be more likely to show spirometry benefit
Execution of the Phase 3	Study population of AATD patients with a broad range of stage of disease (early → late stage) may accelerate enrollment Both studies confirm 240 mg dose selection
Commercial opportunity	Opportunity for broad label including earlier stage PI*ZZ patients who may not be eligible for AAT augmentation – payors and HCPs familiar with SGRQ Total and CT endpoints Partnering process ongoing – range of structures

Phase 3 design

- SGRQ Total Score and CT-density independent primary endpoints with functional assessment as key secondary
- Enrollment to include earlier stage PI*ZZ patients
  - All with emphysema
  - Based on defined selection criteria
- ~220 patients for treatment period of 18 months
- For full approval (not conditional)

Broader population with these two independent primary endpoints maximizes potential for clinical and commercial success

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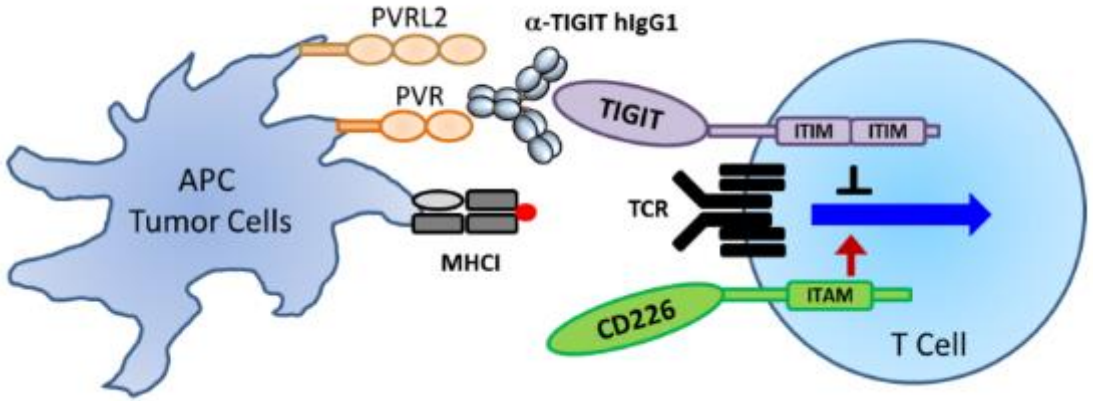
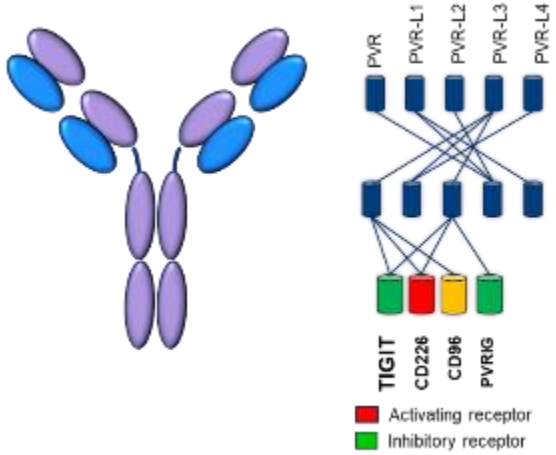
Etigilimab (MPH313)

Anti-TIGIT antibody in development in combination with anti-PD1

Etigilimab: an Anti-TIGIT antibody in development in combination with anti-PD1

- T Cell Immunoreceptor with IG and ITIM domains (TIGIT)
- Anti-TIGIT designed to activate the immune system and enable anti-tumor activity
- Expressed on CD4, CD8 and NK cells and expression is pronounced on regulatory T cells (Tregs)
- TIGIT mediates an inhibitory signal that is thought to prevent T-cells from attacking tumor cells
- Etigilimab is an IgG1 monoclonal antibody designed to balance affinity and ADCC characteristics while limiting side effects
- Completed Phase 1a (etigilimab monotherapy)/1b (combined with nivolumab)
- Phase 1b open label basket study in combination with nivolumab (ACTIVATE) enrollment in selected cohorts; data presented at ASCO 2022 and ESMO 2022 and 2023
- Combination of etigilimab and nivolumab was safe and well tolerated





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1. Mettu et al., CCR, 2021; 2.McKean et. al., ASCO, 2022; 3. Sarikonda G et al., ESMO, 2022

ACTIVATE efficacy data: select cohorts*

Objective Responses by RECIST	Cohort					
	Endometrial Cancer (CPI-naïve) (n=10)	Cervical Cancer (n=8)^	Uveal Melanoma (n=8)	De-differentiated Liposarcoma (n=10)	Germ Cell Tumor (n=4)	Total (n=40)
ORR = 10 (25%)						
CR	**0**	**3[1]**	**0**	**0**	**0**	**3**
PR	**3**	**0**	**2**	**1**	**1[3]**	**7**
SD	**3**	**2[2]**	**2**	**4**	**0**	**11**
PD	**4**	**3**	**4**	**5**	**3**	**19**

Disease Control Rate (CR+PR+SD) = 21 of 40 (52.5%)

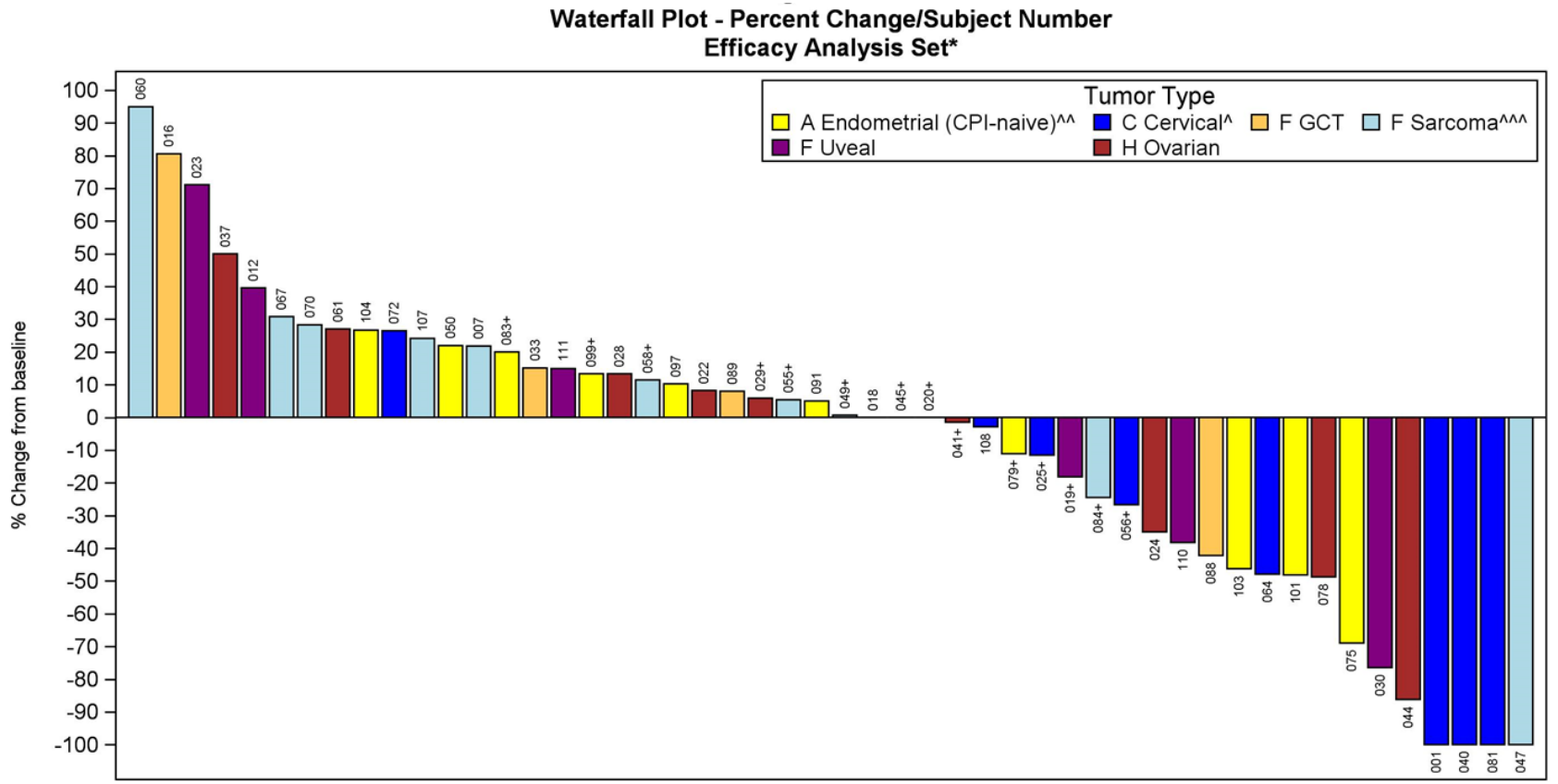
All responses confirmed

*Efficacy analysis set: Best Observed Response (BOR) by investigator-assessed response per RECIST 1.1/clinical progression; data cut-off 3/29/2023. ^ Includes 1 TMB-H cervical pt E025 with CPS >1% by central lab.

1. 1 CR was on-going and pt withdrew consent; 1 CR off study due to AE; 1 CR on-going at data cut-off
2. 1 SD on-going at data cut-off, patient died due to unrelated event
3. Mixed response, continued treatment, PD-RECIST1.1

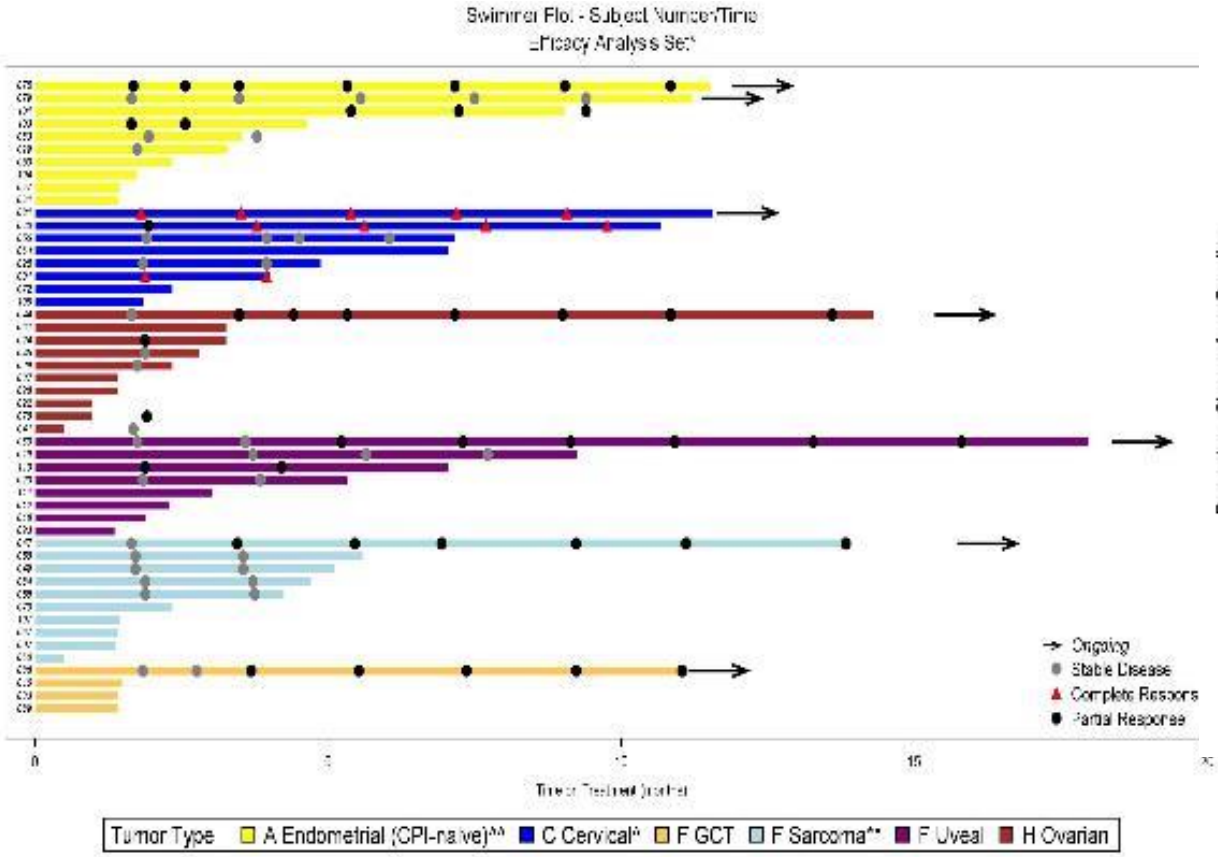
Central lab PD-L1 CPS % for ORR pts: F088 germ cell=0; F047 sarcoma=1; F030 uveal=0; A075 endometrial=3; A103 endometrial=3; G101 endometrial=3; C081 cervical=51; C040=20; C001 cervical and F110 uveal had no tissue for central lab; pathology report for C001 indicated >90%.

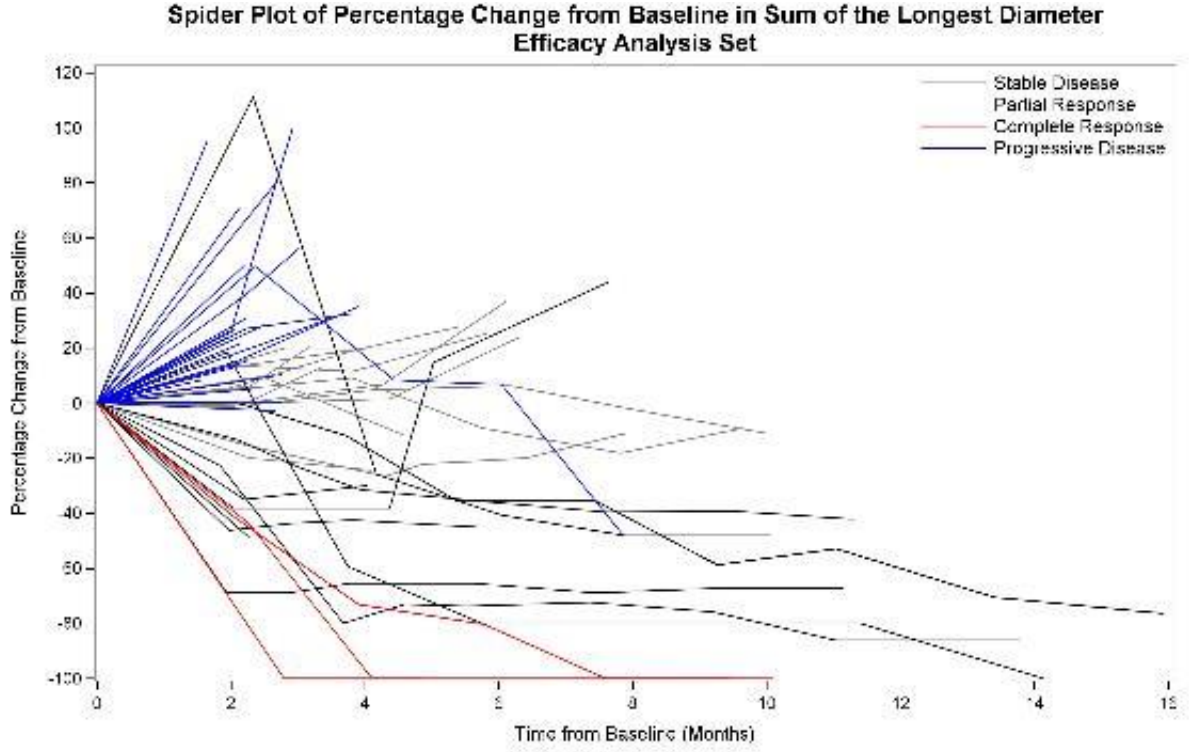
ACTIVATE efficacy data: select cohorts (continued)



^Cervical cancer patient (E025) enrolled in TMB-H cohort with PD-L1 CPS>1%
^^ Endometrial cancer – CPI-naïve patient (G101) enrolled in post-CPI cohort
^^ Sarcoma subjects only include those with de-differentiated liposarcoma
+ best overall response of stable diseases. Note 2 subjects with SD had progression (non-target lesion) concurrent with the first scan
F049=sarcoma; H045=ovarian; F018 & F020=uveal
#De-differentiated liposarcoma subject F047 is CR for target lesions, but overall PR due to persistent non-target lesion

ACTIVATE efficacy data: select cohorts (continued)





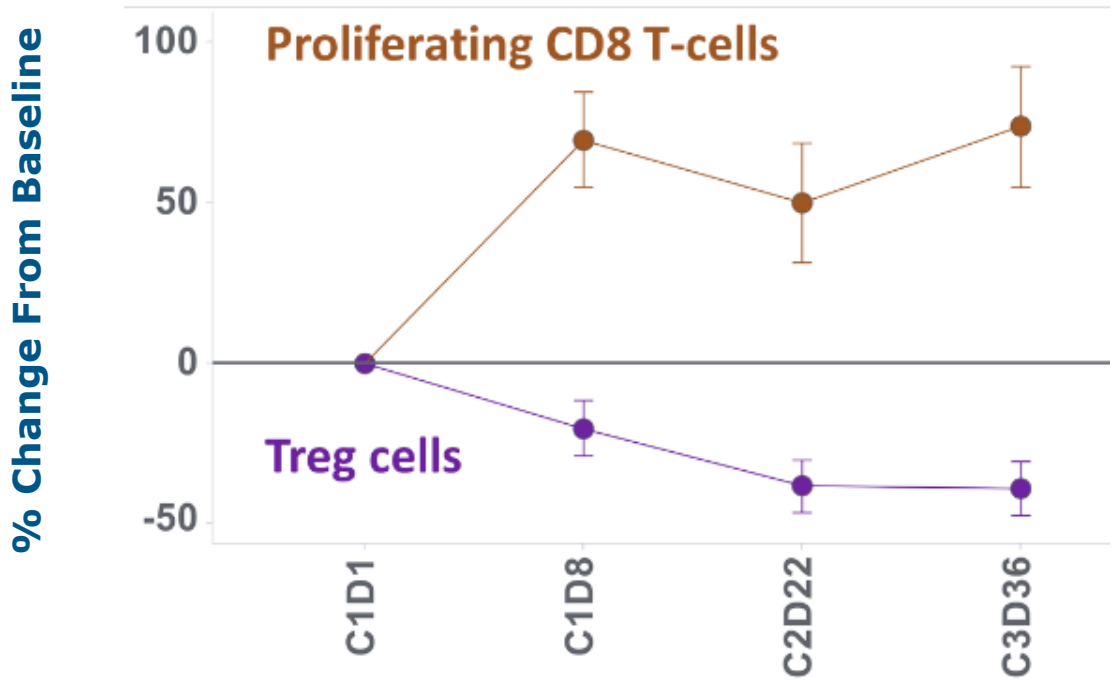
" Sarcoma subjects only include those with De-differentiated liposarcoma
^Cervical cancer patient (E025) enrolled in TMB-H cohort with PDL-1 CPS>1%
^^Endometrial cancer – CPI naïve patient (G101) enrolled in post-CPI cohort
Note E025 death unrelated to study drug or PD. C001 consent withdrew
Central lab PD-L1 CPS status pts on study ≥ 335 days:
* PD-L1 negative; + PD-L1 ≤3; #PD-L1 >3
Data cut-off March 29, 2023; 7 pts on-going (→)

Median time on treatment for EC-N, cervical, GCT, de-differentiated liposarcoma, uveal patients

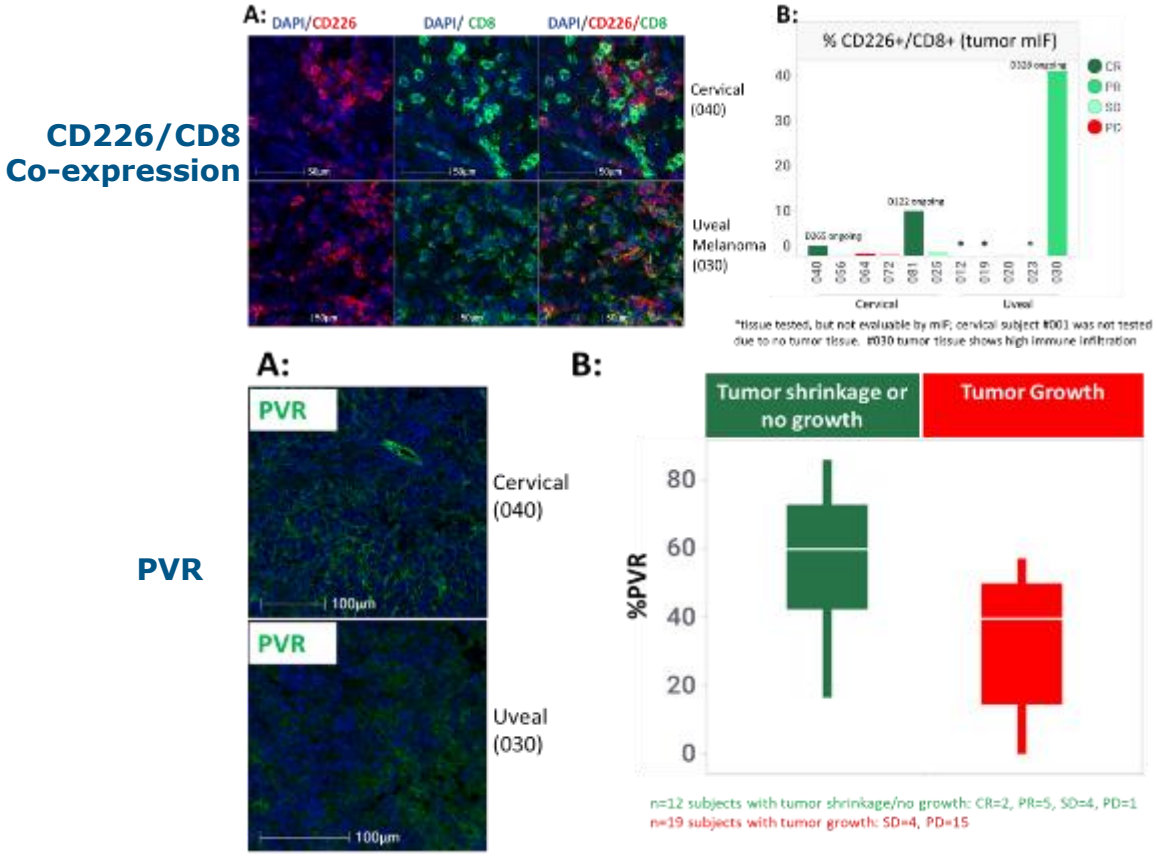
- CR (3 pts) = 11.5 months
- PR (7 pts) = 11 months
- SD (11 pts) = 5.7 months

Etigilimab shows robust target engagement in patients and exploratory biomarker correlation with clinical response

Etigilimab shows robust target engagement

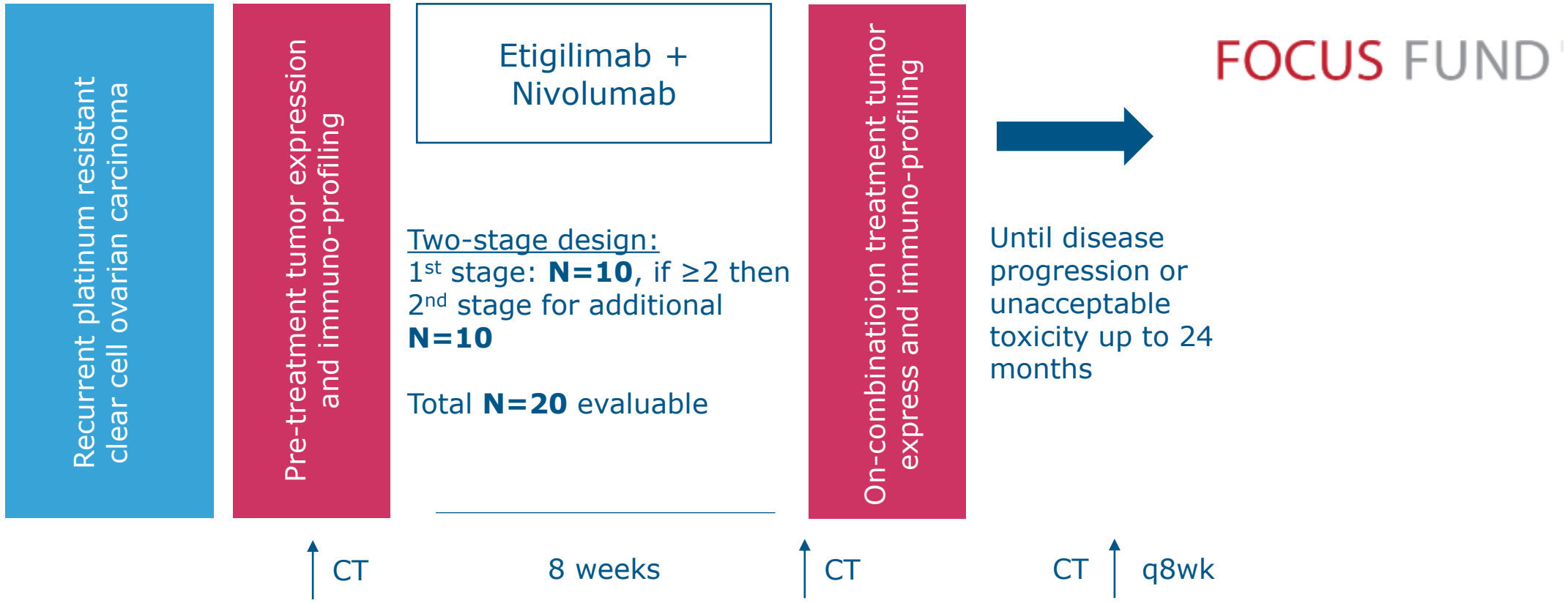


Baseline tumor expression: correlation with reductions in target lesions



Sarikonda et al, ESMO, 2022

EON* investigator-led study at MD Anderson Phase 1b/2 in Clear Cell Ovarian Carcinoma



Two Stage Phase 1/2 Design with stopping boundaries for efficacy and toxicity.
Based on responses from initial 10 patients, study is being expanded to 20 patients.

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*Clinical Trial Identifier NCT05715216

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Other programs, milestones and financials

Upcoming key milestones for core programs

Product candidate	2023		2024		Next milestone
	H1	H2	H1	H2	
Setrusumab OI	Phase 2 Orbit (5 - <26 yrs old)				Phase 2 OL data 2024
		Phase 3 Orbit (5 - <26 yrs old)			Phase 3 LPI ~ end Q1 2024
		Phase 3 Cosmic (2 - <7 yrs old)			Phase 3 LPI 2H 2024
Alvelestat AATD-LD BOS	ASTRAEUS*				Potential partnering, Phase 3 initiation
	Phase 2 ATALANTa				Medical conferences
	Phase 1b	Phase 2			BOS: Phase 2 data
Etigilimab Rare & Gyn-Onc Tumors	Phase 1b ACTIVATE				EON study update – 1H 2024 - expanded to 20 patients
OCCC**	Phase 1b/2 EON				

*ASTRAEUS is a proof-of-concept Phase 2 study
**Ovarian Clear Cell Carcinoma

Other programs: current partnerships

Other current partnerships
• **Navicixizumab** global rights out-licensed to OncXerna for further development • Payments of up to $300 million in milestones plus royalties • OncXerna initiated a Phase 2 basket study in a range of solid tumors in 2H 2022 • **Leflutrozole** – global rights out-licensed to ReproNovo for further development • ReproNovo is a reproductive medicine company • Upfront plus up to $64 million in milestones and royalties

Financial highlights

Cash runway into 2026
$62.4 million as of
September 30, 2023

Cap Table *(December 2023)*	**ADSs[1]** *(in thousands)*
Shareholders > 2% holding	72,563
Shareholders < 2% holding	67,625
Share capital – Issued and outstanding	**140,188**
Potential Future Dilution:	
Warrants[2]	1,360
Convertible loan notes	3,421
Employee share schemes[3]	11,405

1 *One ADS represents five ordinary shares*
2 *Assumes a market price of $3.00 per ADS and cashless exercise. The maximum number of warrants outstanding is 1.8m.*
3 *Excludes 1.4m ADSs for employee share awards with an exercise price in excess $8.00; Most employee share awards have an exercise price between ~$1.00 - $6.00.*

Source: Shareholding based on the 13F filings (as of September 30, 2023), adjusted for subsequent purchases/sales when known.

Thank you

With a special thank you to members of our community, who generously agreed to be featured in this presentation.

Mereo BioPharma

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