

A woman with long dark hair is wrapped in a light-colored, textured blanket. She is smiling and looking out a window. The background is bright and slightly blurred, suggesting an outdoor view. The image is overlaid with a semi-transparent circular graphic.

UNITY
BIOTECHNOLOGY

Ophthalmology Day Webcast Presentation

October 15, 2024

NASDAQ: UBX

Special Note Regarding Forward-Looking Statements

This presentation and the accompanying oral commentary contain forward-looking statements including statements related to Unity Biotechnology Inc.'s ("UNITY's") understanding of cellular senescence and the role it plays in retinal diseases and diseases of aging, the potential for UNITY to develop therapeutics to slow, halt, or reverse diseases of aging, including for ophthalmologic and neurologic diseases, UNITY's expectations regarding potential benefits, activity, effectiveness, and safety of UBX1325, the potential for UNITY to successfully commence and complete clinical studies of UBX1325 for DME, AMD, and other ophthalmologic diseases, the expected timing of enrollment and results of the clinical trials in UBX1325, and UNITY's expectations regarding the sufficiency of its cash runway. These statements involve substantial known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements, including risks relating to the uncertainties inherent in the drug development process, the risk that interim results of our clinical studies may not be indicative of future results, and risks relating to UNITY's understanding of senescence biology. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. The forward-looking statements in this presentation represent our views as of the date of this presentation. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this presentation. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of UNITY in general, see UNITY's most recent Quarterly Report on Form 10-Q for the quarter ended June 30, 2024, filed with the Securities and Exchange Commission on August 6, 2024, as well as other documents that may be filed by UNITY from time to time with the Securities and Exchange Commission. This presentation concerns drug candidates that are under clinical investigation which have not yet been approved for marketing by the U.S. Food and Drug Administration. They are currently limited by Federal law to investigational use, and no representation is made as to their safety or effectiveness for the purposes for which they are being investigated. This presentation does not constitute an offer or invitation for the sale or purchase of securities and has been prepared solely for informational purposes.

Agenda

**Welcome and Introduction to UNITY
DME Unmet Need and Opportunity for UBX1325**



**Anirvan Ghosh, PhD, CEO
Alicia Tozier, MBA, Chief Strategy Officer**

Senolytic Therapeutic Hypothesis



Mike Sapienza, PhD, Chief Scientist

**UBX1325 Clinical Development Plan
Ph2 BEHOLD Data in DME Patients**



Robert Bhisitkul, MD, PhD (UCSF), Senior Clinical Advisor

**Ph2B ASPIRE Design and Data Timelines
FDA Interaction & Pivotal Study Expectations**



Anirvan Ghosh, PhD, CEO

**Fireside Chat with Retina Experts Arshad
Khanani and Dante Pieramici**



**Arshad Khanani, MD, MA, FASRS (Sierra Eye Associates)
Dante Pieramici, MD (California Retina Consultants)
Alicia Tozier, MBA, Chief Strategy Officer**

Executive Leadership Team



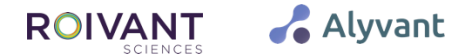
ANIRVAN GHOSH, PhD
Chief Executive Officer



LYNNE SULLIVAN, MS
Chief Financial Officer



ALEX NGUYEN, JD
Chief Legal Officer/ Head of Ops



ALICIA TOZIER, MBA
Chief Strategy Officer



MIKE SAPIEHA, PhD
Chief Scientist



ROBERT B. BHISITKUL MD, PHD
Senior Clinical Advisor



Steering Team

Arshad Khanani, MD, MA | Raj Maturi, MD | Dante Pieramici, MD | Victor Gonzales, MD | Quan Nguyen, MD

Advisory Team

Jeff Heier, MD | David Boyer, MD | Bob Bhisitkul, MD, PhD | Quan Nguyen, MD, MSc | Diana Do, MD

Developing Transformative Medicines for Retinal Disease based on a Senolytic Mechanism of Action



Focus Area: Ophthalmology

DME (Diabetic Macular Edema),

Diabetic Retinopathy,

Geographic Atrophy

Investment Highlights: Recent Achievements and UBX1325 Clinical Studies

Senolytic platform to develop transformative therapeutics

Developing a novel therapeutic approach to remodel the retina based on **Senolytic Mechanism of Action**

Potential to be valuable as monotherapy or in combination with anti-VEGF agents to shift the treatment paradigm for progressive vision loss

Lead asset UBX1325 (foselutoclax) has best in class potential for DME

Novel MOA to overcome **limitations of current standard of care, including heavy treatment burden and sub-optimal response**

A single dose of foselutoclax led to **strong visual acuity gains through 48 weeks in Phase 2 BEHOLD study in patients with DME**

Recent achievements and ongoing studies

Phase 2b **ASPIRE** study, evaluating **UBX1325 head-to-head against aflibercept in DME,**

- **Enrollment completed** in Q3 2024
- **Type C Engagement with FDA** provides opportunity for pivotal study largely in line with Ph2 ASPIRE trial
- **24-week data expected in 1Q25** and **36-week data expected in 2Q25**

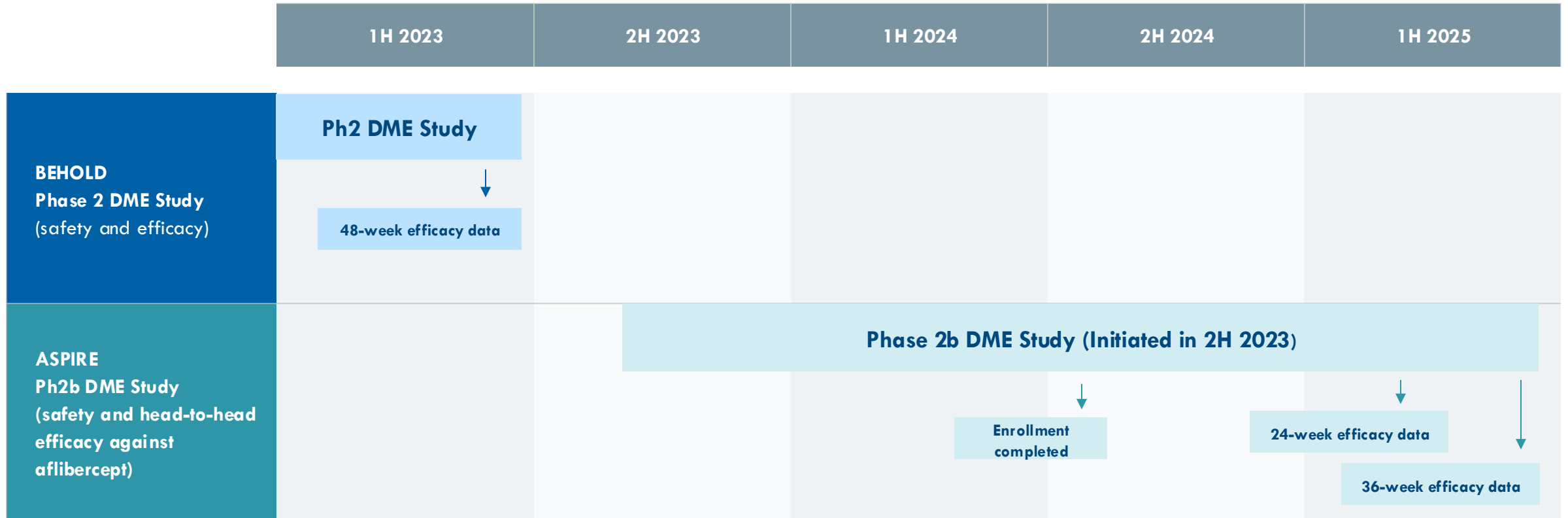
UNITY Pipeline

Targeting Cellular Senescence and Aging-Related Biology in Indications with Established Endpoints and Well-Defined Regulatory Pathways to Approval

	Mechanism	Indication	Research	Lead Optimization	IND-enabling	Phase 1	Phase 2	Phase 3
Ophthalmology	BCL-xL Inhibition	Diabetic Macular Edema (ASPIRE)	Foselutoclax (UBX1325, Phase 2b)					
		Diabetic Macular Edema (BEHOLD)	Foselutoclax (UBX1325, Phase 2)					
	Tie2/ α VEGF bi-specific	Retinal Vascular Diseases	UBB2048					
	Tie2 Agonistic Antibody	Retinal Vascular Diseases	UBX2050					
Neurology	α -Klotho	Cognitive Disorders	UBX2089		Partnered with Jocasta Neuroscience			

UBX1325 (Foselutoclax) Clinical Program in Diabetic Macular Edema

BEHOLD and ASPIRE Studies



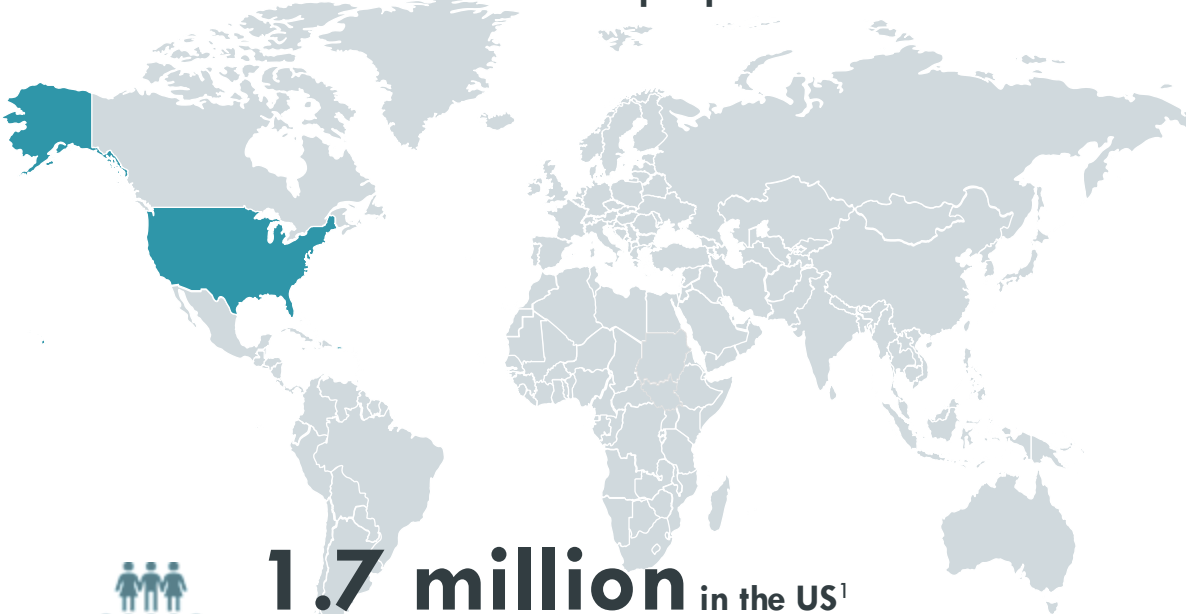


**DME Unmet Need and
Opportunity for UBX1325**



Diabetic Macular Edema (DME) Represents a Large Underserved Market

35.5 million people with DME worldwide¹



1.7 million in the US¹
with ~750,000 diagnosed and treated²
and ~30% affected in both eyes²

Inadequate Response to Anti-VEGF Standard of Care

- › One half of patients achieve a weak or suboptimal response^{3,8}
- › 30% may not respond to anti-VEGF⁴ at all
- › Approximately one-third of patients require monthly dosing⁷

Continued Vision Loss Over Time Despite Treatment

- › Most visual acuity (VA) improvements occur within the first year²
- › Vision gains plateau at 24 months then decline through year 5⁵
- › 28% lose the ability to drive by Year 4⁶

High Treatment Burden Leading to Discontinuation

- › 50%+ discontinue anti-VEGF treatment by 6 months²

DME=Diabetic Macular Edema; AE=Adverse Events; VEGF=Vascular Endothelial Growth Factor; Newest agents=VABYZMO and EYLEA HD

1. Downs P. Global Retinal Pharmaceuticals Market Report. Market Scope; 2023 Aug; 2. Kuo B, et al. Long-term Treatment Patterns for Diabetic Macular Edema – Up to 6 Year Follow-up in the IRIS Registry. Ophthalmology Retina. Articles in Press. 2024 Jun 01; 3. Gonzales V et al. Early and Long-Term Responses to Anti-Vascular Endothelial Growth Factor Therapy in Diabetic Macular Edema. American Journal of Ophthalmology. 2016 Dec. 172:72:79; 4. Sharma D et al. Mechanisms of Acquired Resistance to Anti-VEGF. iovs.arvojournals.org; ISSN: 1552-5783; May 2023; 5. Glassman AR et al, Diabetic Retinopathy Clinical Research Network. Ophthalmol. 2020 Aug; 127 (9): 1201-10; 6. Emami-Naeini, P et al. Ophthalmology Retina. 2024 Apr. Volume 8, Issue 4, 388 – 398. 7. Giust J et al. Treat and Extend Versus Bi-monthly Dosing with Aflibercept for the Treatment of Diabetic Macular Edema, One Year Outcomes (EVADE STUDY). ARVO Abstract. 2018; 8. Sun J et al. Defining “Strong” versus “Weak” Response to Anti-VEGF Treatment for Center-Involving Diabetic Macular Edema. Retina. 2023 April 01; 43(4): 616–623.

UBX1325 is Designed to Address Current DME Unmet Needs



**POOR VISUAL
OUTCOMES**

One half of DME patients achieve a weak or suboptimal response to anti-VEGF^{3,4,8}

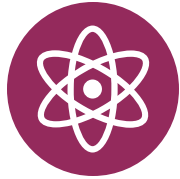
With anti-VEGF agents, vision gains plateau at 24 months & then continue to decline^{3,5,8}



**HIGH
TREATMENT
BURDEN**

Approximately one third of DME patients still require monthly dosing⁷

Dosing frequencies are burdensome leading to >50% dropping out after 6 months³



**NEW MECHANISM
OF ACTION**

Sub-optimal response to anti-VEGF point to the need for additional mechanisms of action^{1,2,3,4}

Patients with diabetes are 2x more likely to experience systemic AEs⁶ with anti-VEGF therapy



**STRONG
UBX1325
OPPORTUNITY**

A novel therapeutic approach with the potential to improve long-term visual outcomes for DME patients, via a proven and safe IVT route of administration

1. Global Data. Diabetic Macular Market 2021-2031. 2022 Aug 01; 2. Hahn P, Garg SJ, eds. Membership Preferences and Trends (PAT). American Society of Retina Specialists. 2023; 3. Kuo B, et al. Long-term Treatment Patterns for Diabetic Macular Edema – Up to 6 Year Follow-up in the IRIS Registry. Ophthalmology Retina. Articles in Press. 2024 Jun 01; 4. Sharma D et al. Mechanisms of Acquired Resistance to Anti-VEGF. iovs.arvojournals.org; ISSN: 1552-5783; May 2023; 5. Glassman AR et al. Diabetic Retinopathy Clinical Research Network. Diabetic Macular Edema Protocol T Extension Study. Ophthalmol. 2020 Aug; 127 (9): 1201-10. 6. Zafae S et al. Systemic Adverse Events Among Patients With Diabetes Treated With Intravitreal Anti-Vascular Endothelial Growth Factor Injections. JAMA Ophthalmol. 2023;141(7):658-666. doi:10.1001/jamaophthalmol.2023.2098. 2023 Jun 01. 7. Giust J et al. Treat and Extend Versus Bi-monthly Dosing with Aflibercept for the Treatment of Diabetic Macular Edema, One Year Outcomes (EVADE STUDY). ARVO Annual Meeting Abstract. 2018. 8. Gonzales V et al. Early and Long-Term Responses to Anti-Vascular Endothelial Growth Factor Therapy in Diabetic Macular Edema. American Journal of Ophthalmology. 2016 Dec. 172:727-79;

Senolytic Therapeutic Hypothesis

UBX1325 Mechanism of Action

Cellular Senescence

a **UNIFYING** mechanism in aging biology

Experimental Cell Research 25, 585-621 (1961)

585

THE SERIAL CULTIVATION OF HUMAN DIPLOID CELL STRAINS¹

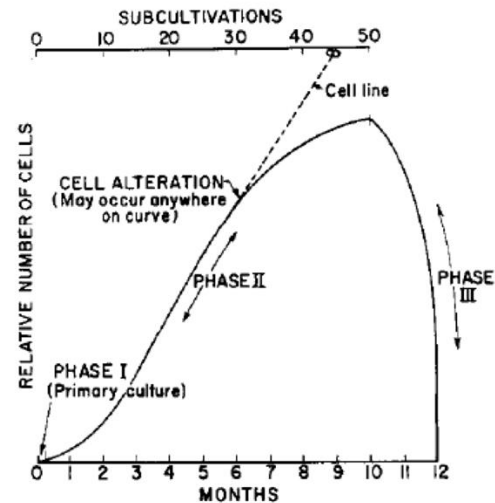
L. HAYFLICK and P. S. MOORHEAD

Wistar Institute of Anatomy and Biology, Philadelphia, Pa., U.S.A.

Received May 15, 1961



Leonard Hayflick (1928-2024)



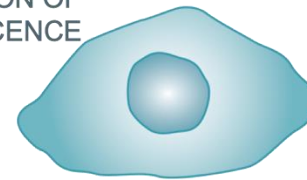
HEALTHY CELLS



Cellular Stress:

- Aging
- Diabetes
- Inflammation
- Unchecked Proliferation

INITIATION OF SENEESCENCE



Senescence-Associated Secretory Phenotype (SASP)



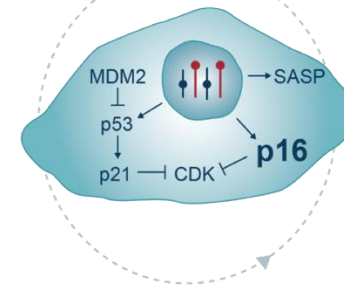
(e.g., IL-1 β , IL-1A, IL-6, IL-7, IL-8, MMP1, TNF- α , PAI-1 ...)



(e.g., TGF β 1, TIMP-1, MCP-1,...)

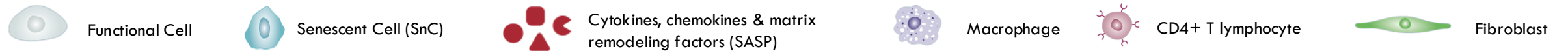
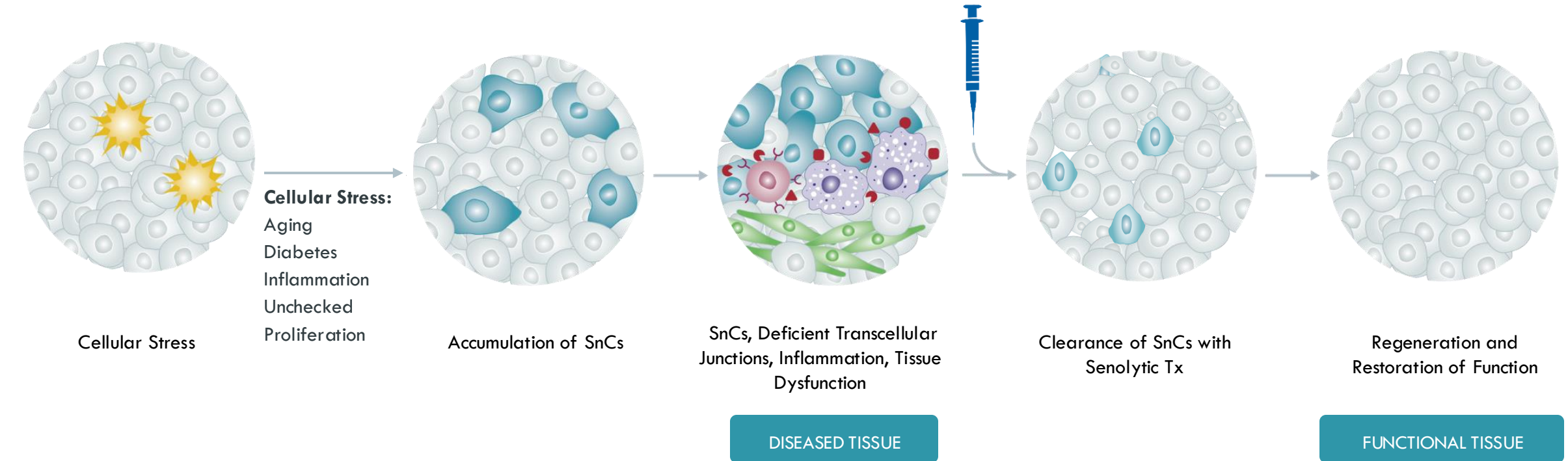


(e.g., VEGF-A, FGF-2, EGF, PDGF, PIGF,...)

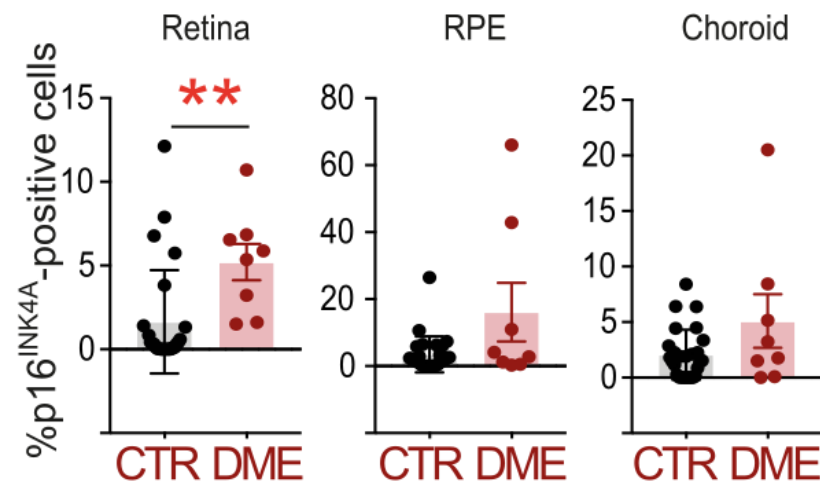
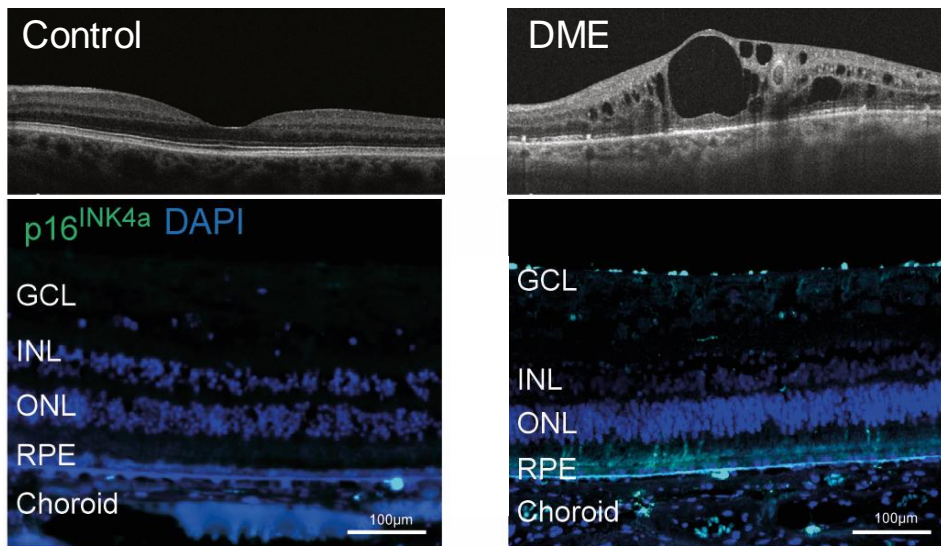
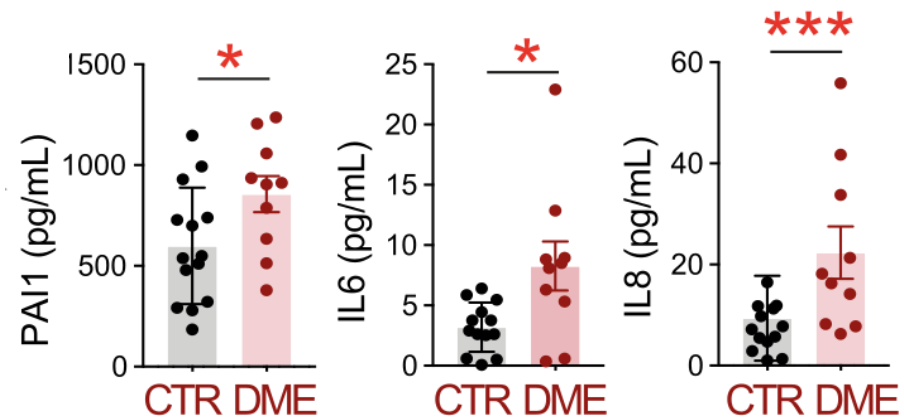


Targeting Senescent Cells to Restore Tissue Health

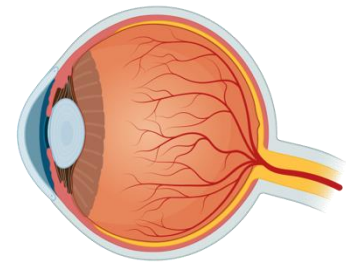
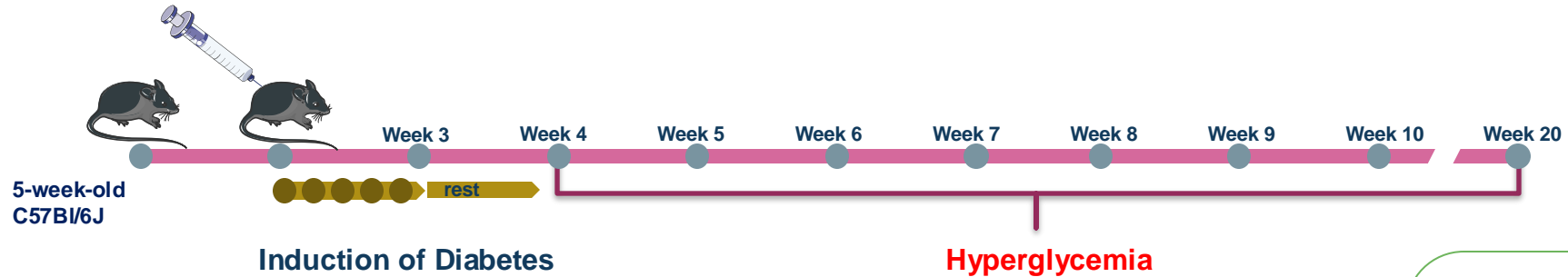
Target senescent cells to neutralize SASP factors and eliminate dysfunctional cells that are the root cause of disease progression



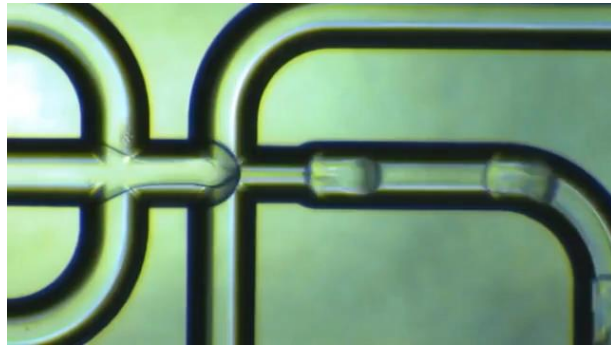
Senescent Cells & SASP Factors Increase in Patients with DME



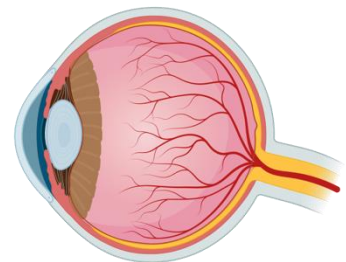
Pathways of Cellular Senescence are Triggered in Endothelial Cells of the Diabetic Mouse Retina



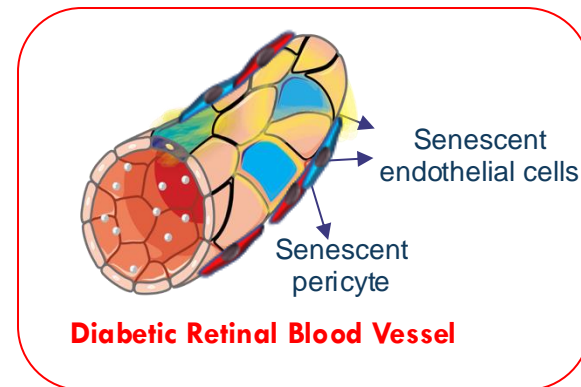
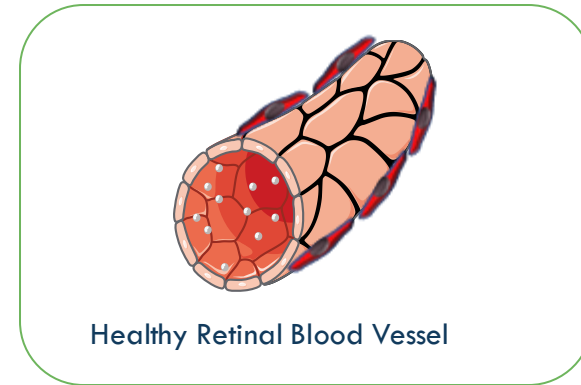
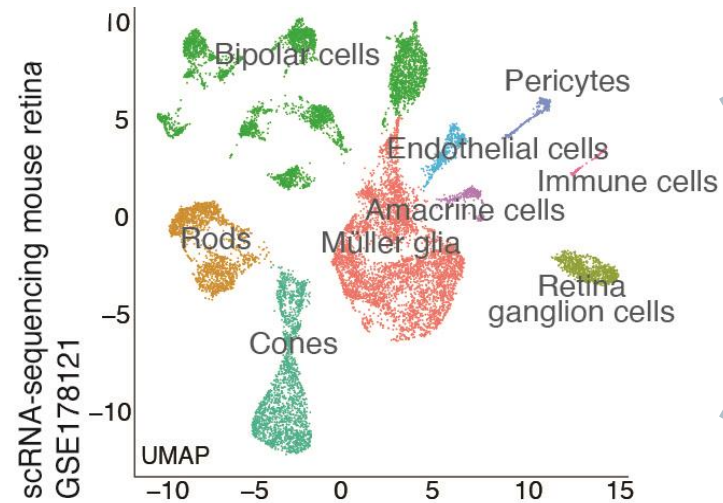
Healthy retina



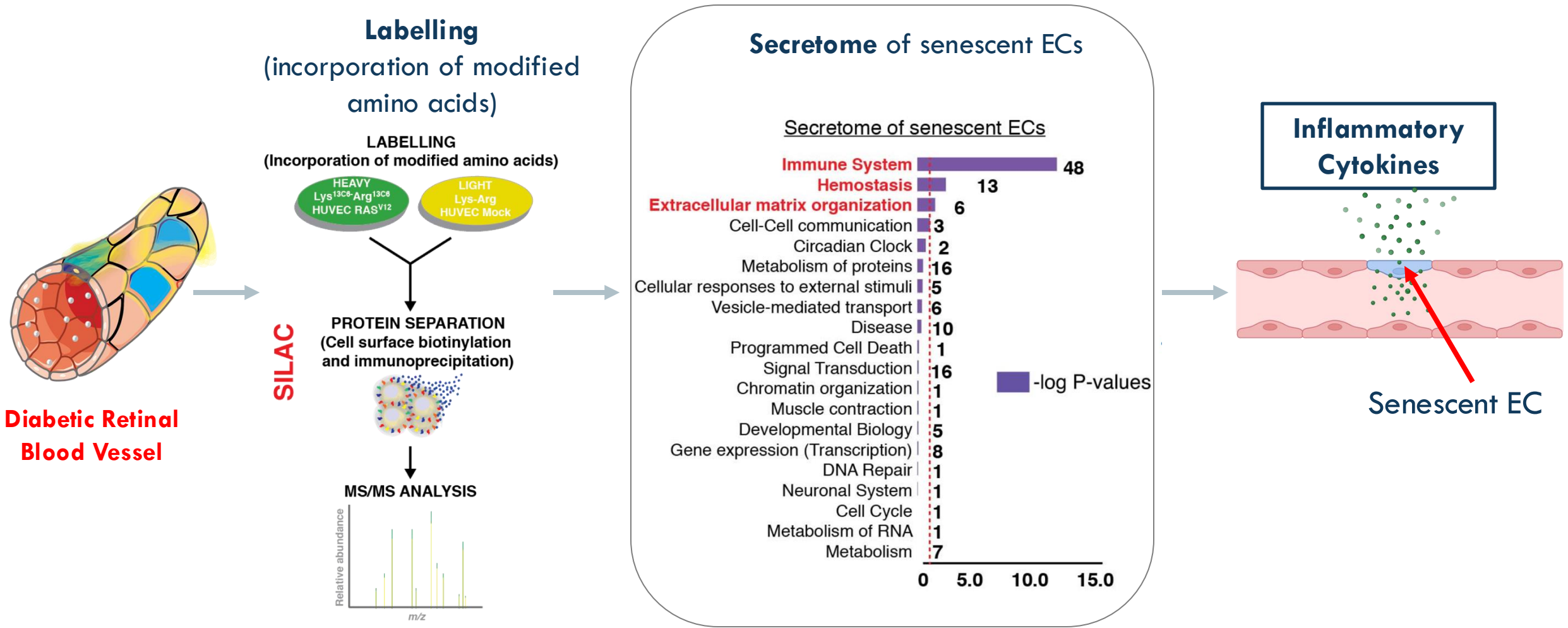
Single cell encapsulation technology



Diabetic retina

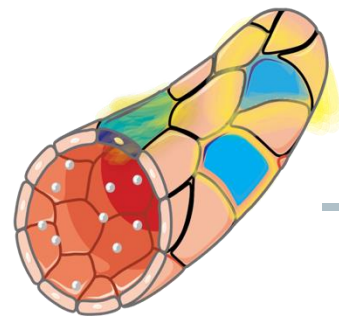


Senescent Endothelial Cells (ECs) Produce Inflammatory Factors Through the SASP

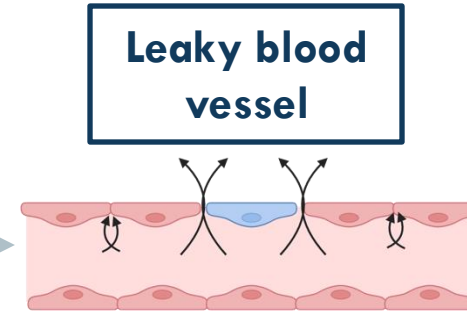
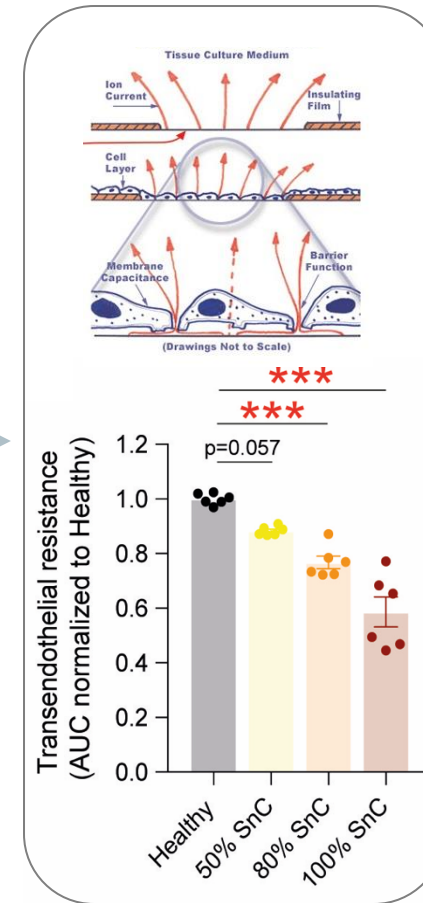
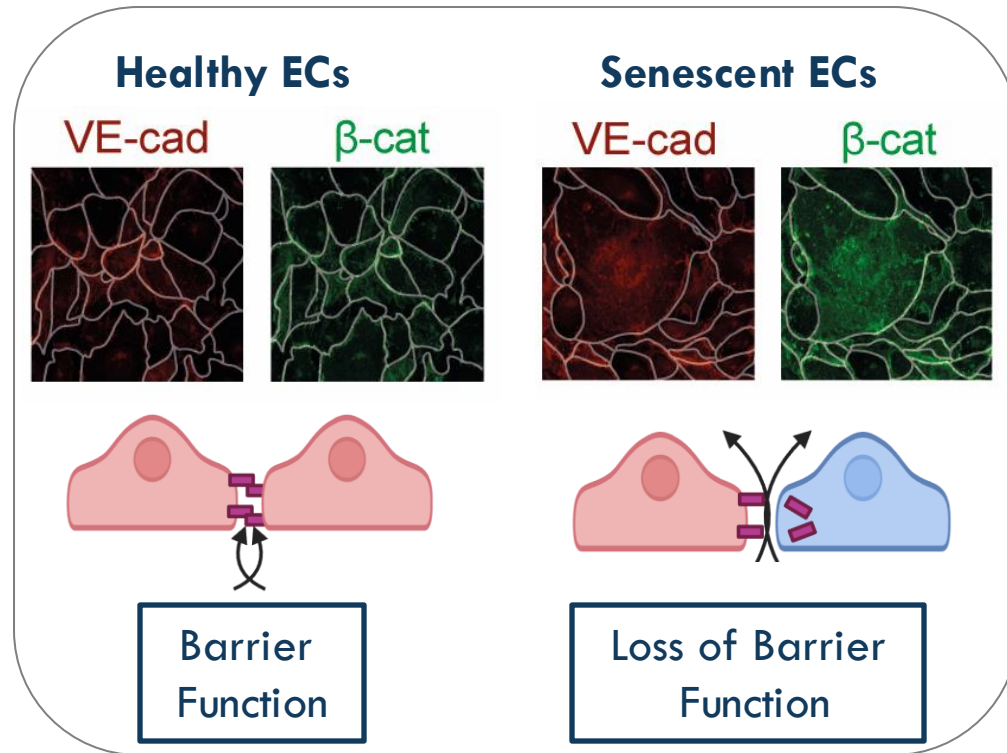


Binet et al Science, 2020

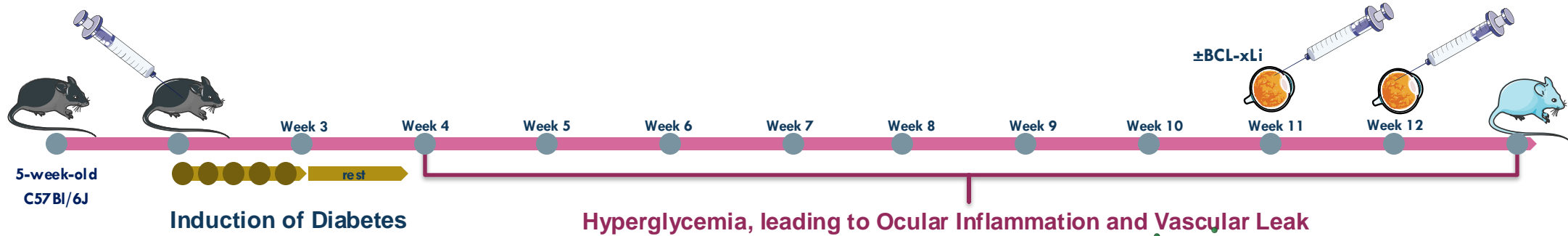
Senescent Endothelial Cells (ECs) Have Compromised Transcellular Junctions



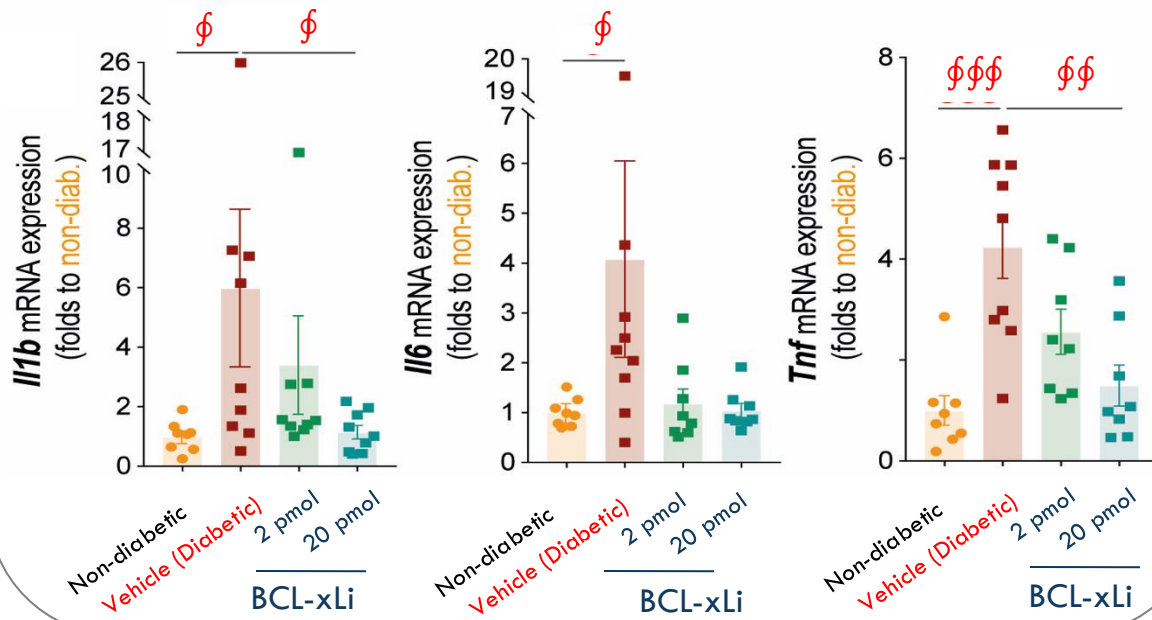
Diabetic Retinal Blood Vessel



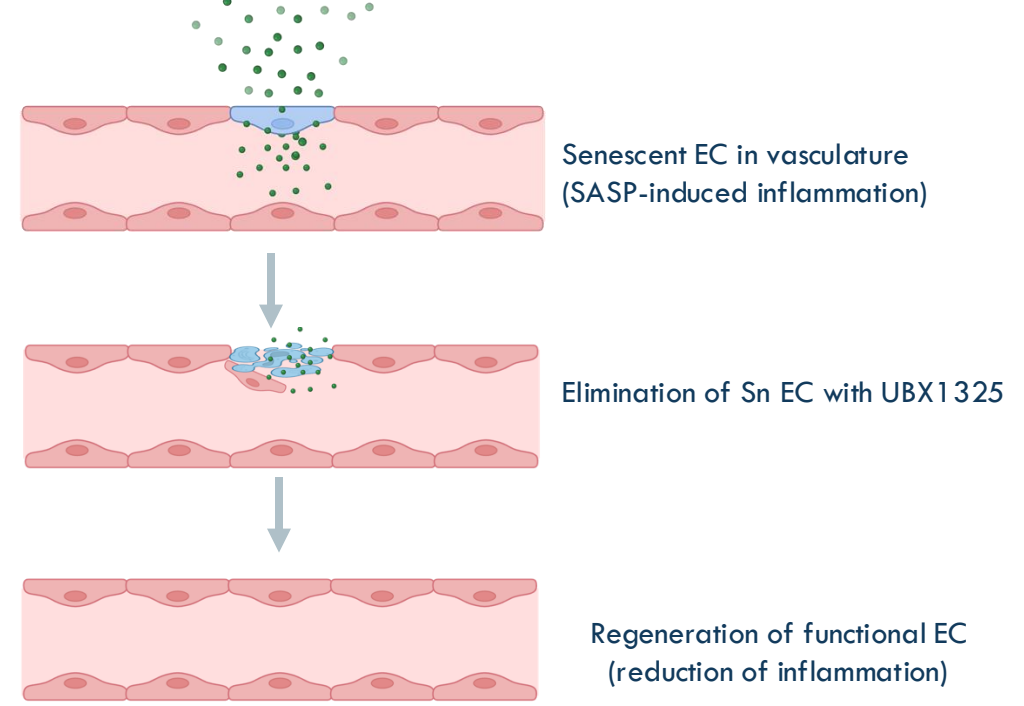
BCL-xL Inhibition Reduces Inflammation in a Mouse Model of Diabetes



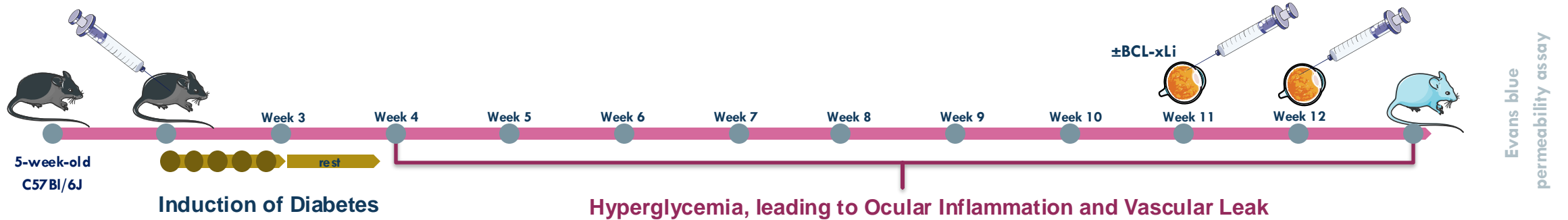
Resolution of Inflammation



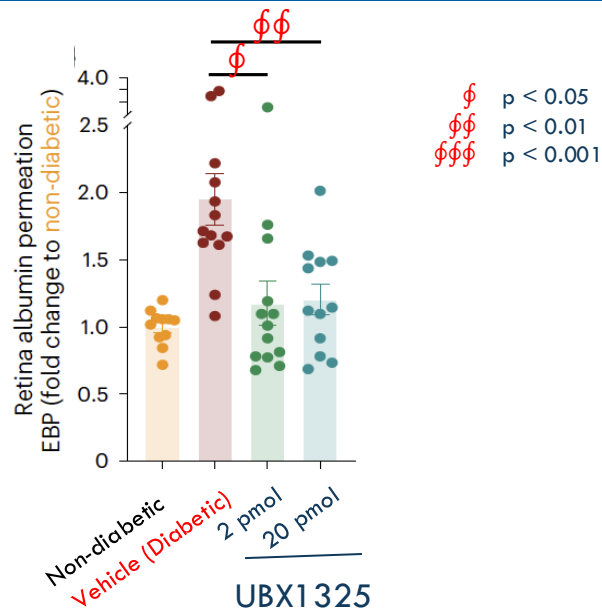
Inflammation



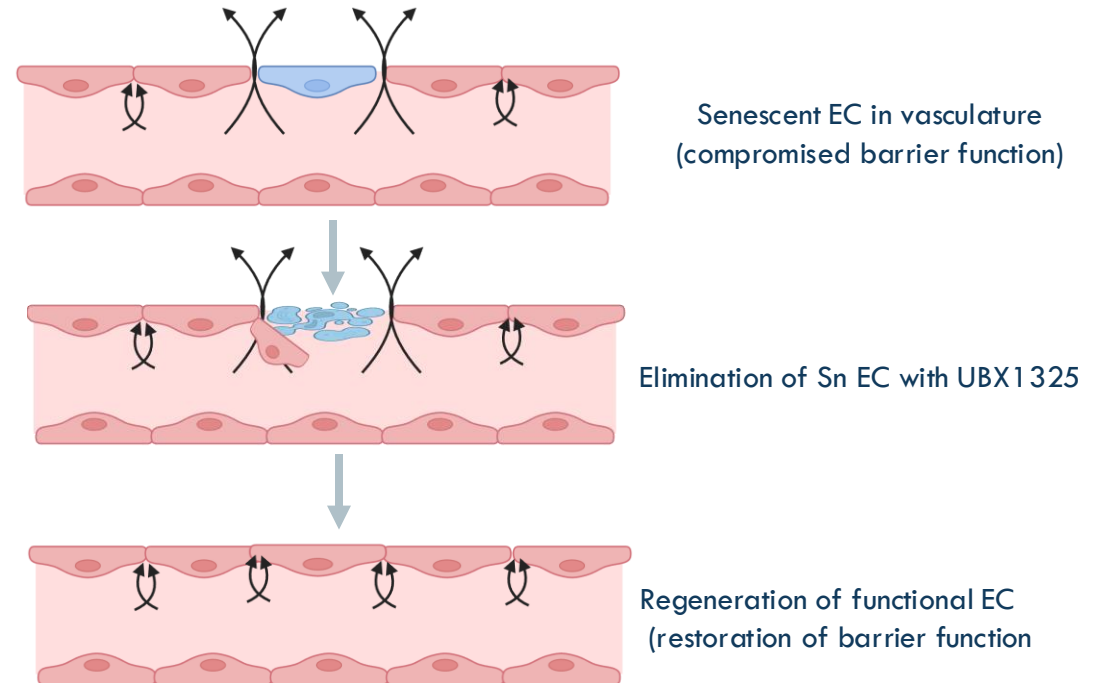
BCL-xL Inhibition Reduces Vascular Leakage in a Mouse Model of Diabetes



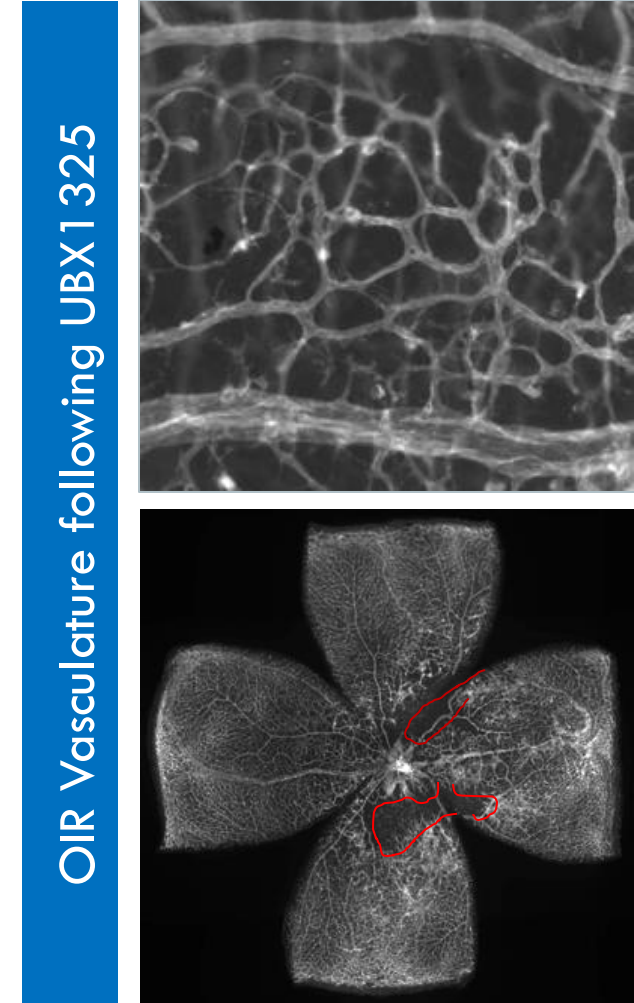
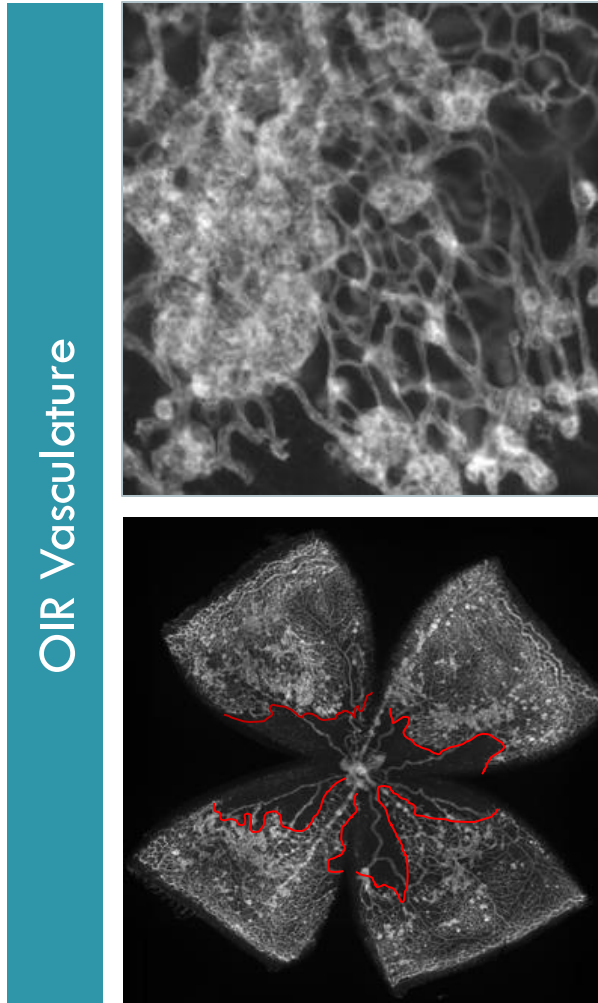
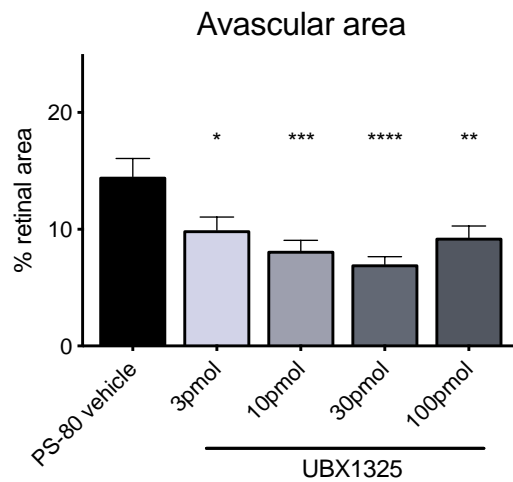
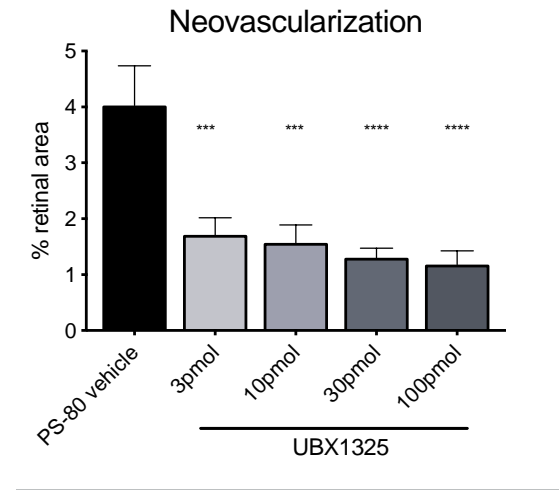
Reduction of Vascular Permeability



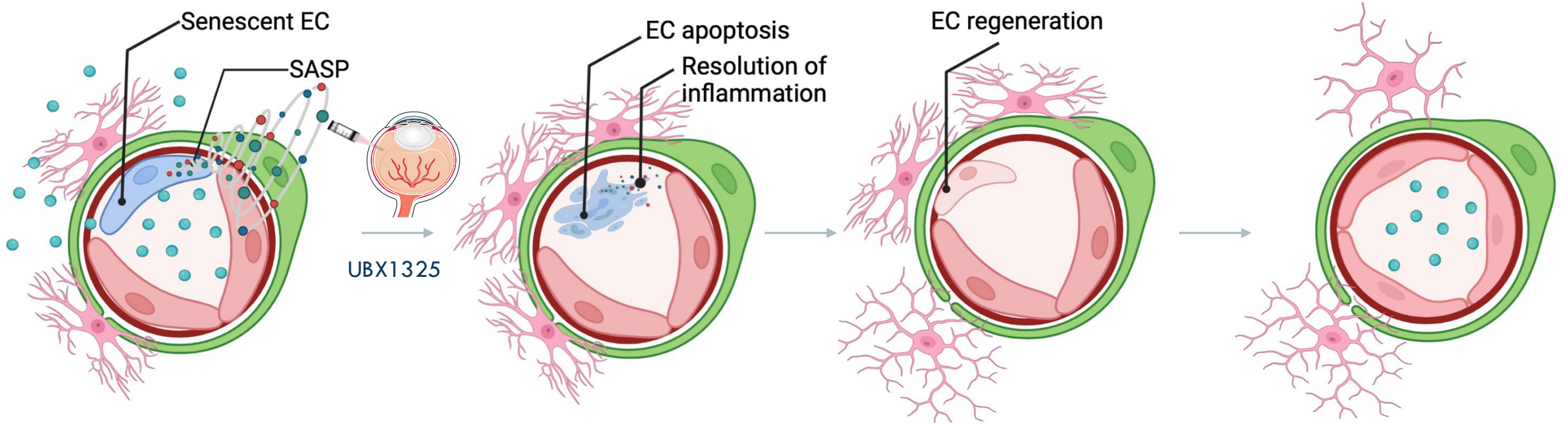
Vascular Permeability



UBX1325 Improves Retinal Vasculature in Mouse Model of Neovascularization



Proposed Mechanism of Action for UBX1325 in Retinal Disease



Diabetic blood vessel

Senescent (Sn) ECs accumulate in diabetic retinas in areas of disease activity

Vessel remodeling

UBX1325 selectively triggers cell death of Sn ECs. UBX1325 reduces retinal inflammation and leakage

Repaired blood vessel

Preclinical data predicts progressive disease modification through vascular remodeling

UNITY Publication Update: Mechanism of Action for UBX1325 published in *Nature Medicine*

nature medicine

Article

<https://doi.org/10.1038/s41591-024-02802-4>

Therapeutic targeting of cellular senescence in diabetic macular edema: preclinical and phase 1 trial results

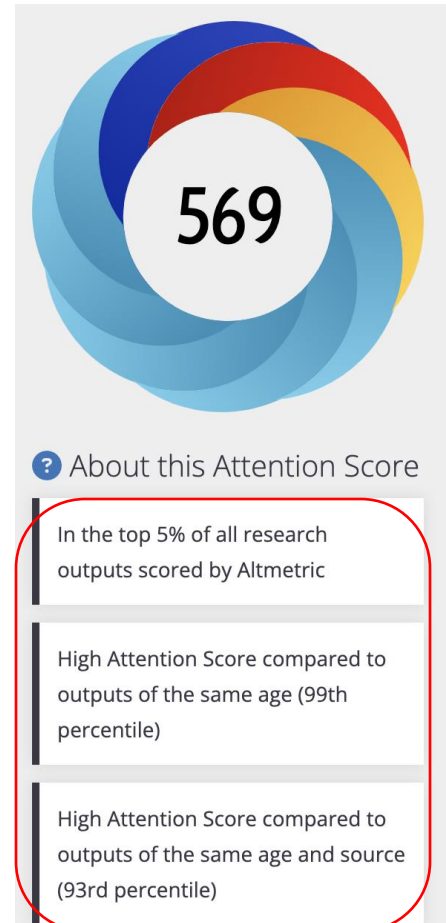
Received: 27 December 2022

Accepted: 3 January 2024

Published online: 6 February 2024

 Check for updates

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An elderly couple, a man and a woman, are smiling and looking at a tablet together. The man is wearing a yellow and white striped shirt, and the woman is wearing a light blue top. They are sitting in front of a window with a view of trees. The image has a soft, warm glow.

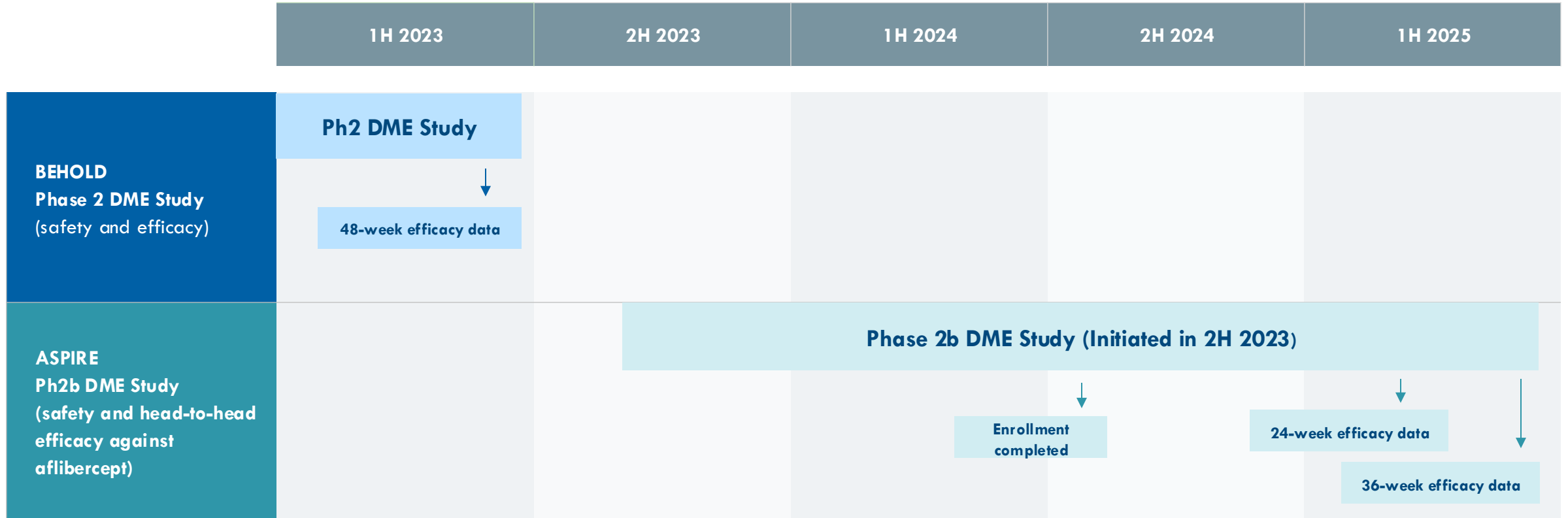
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UBX1325 Clinical Development Plan

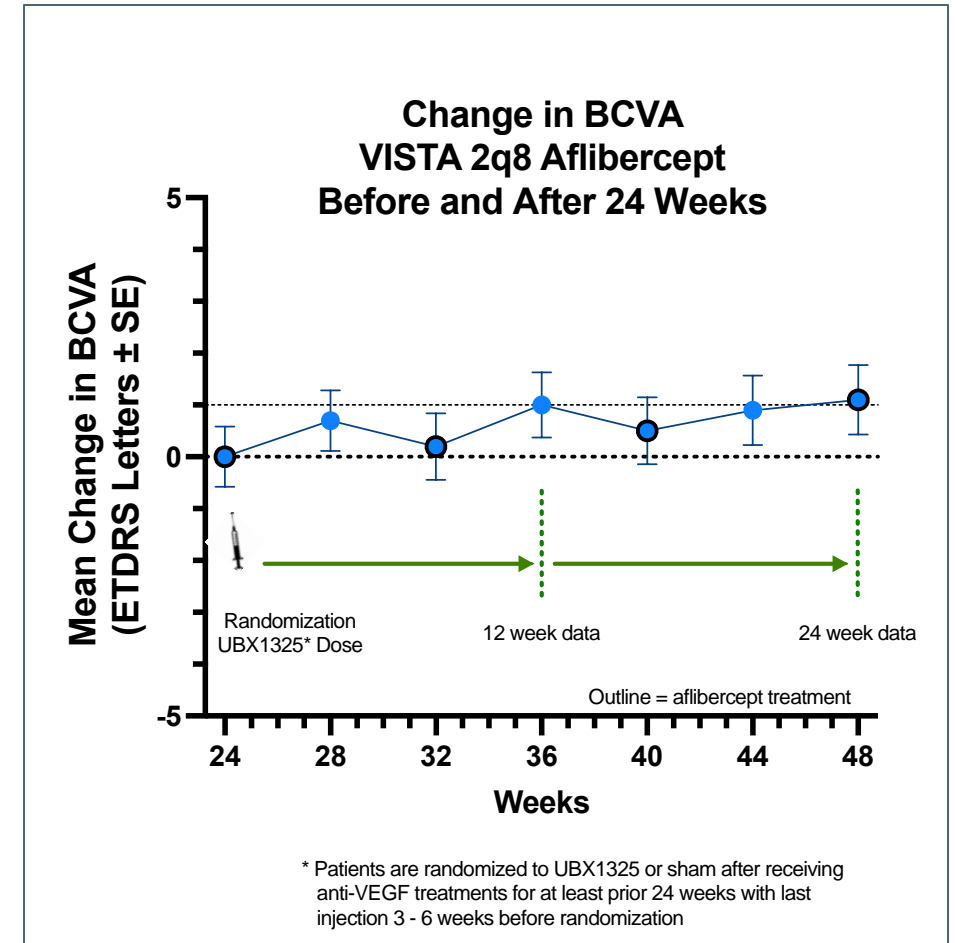
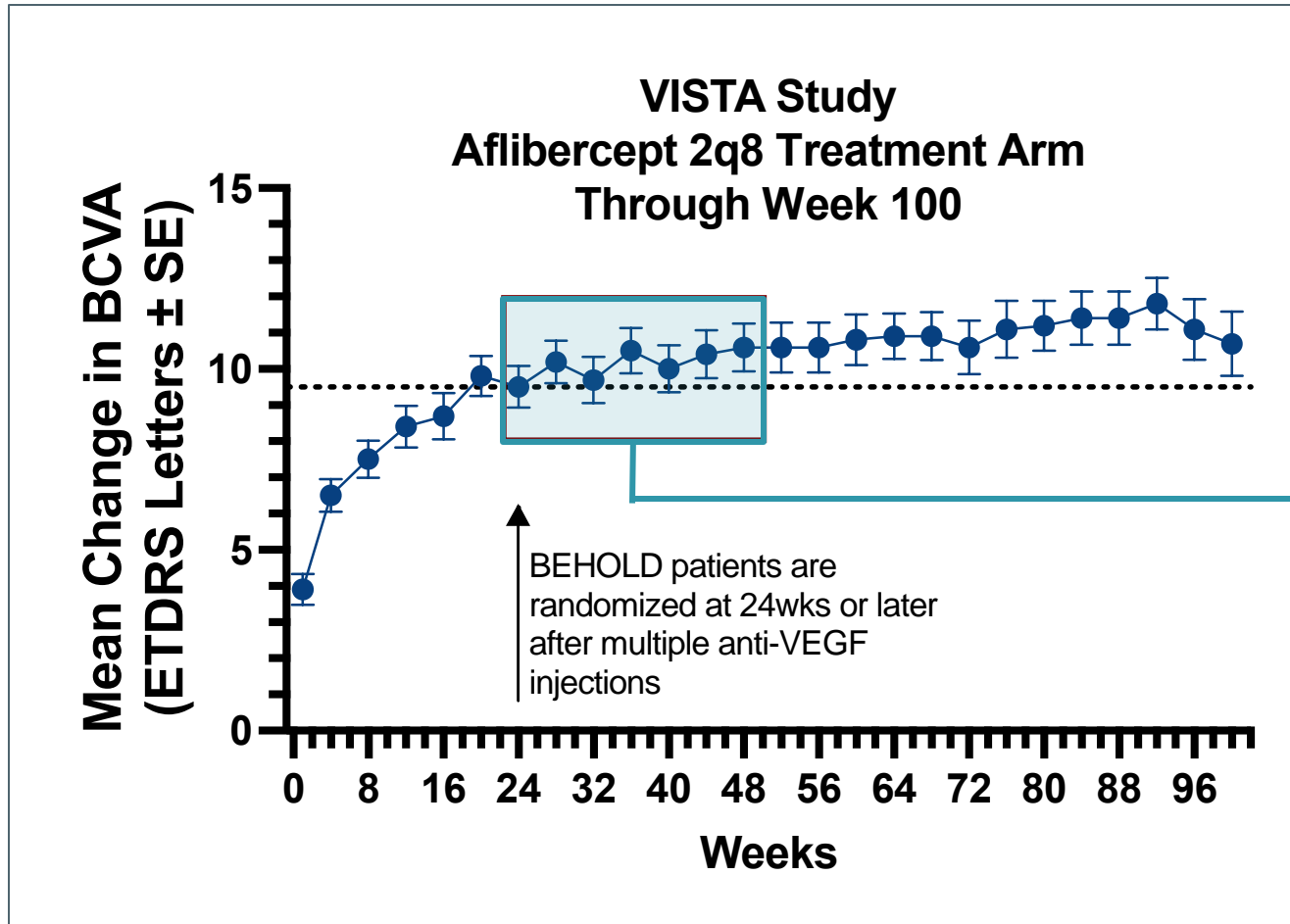
**Ph2 BEHOLD Study in Patients
with DME**

UBX1325 (Foselutoclax) Clinical Program in Diabetic Macular Edema (DME)

BEHOLD and ASPIRE Studies



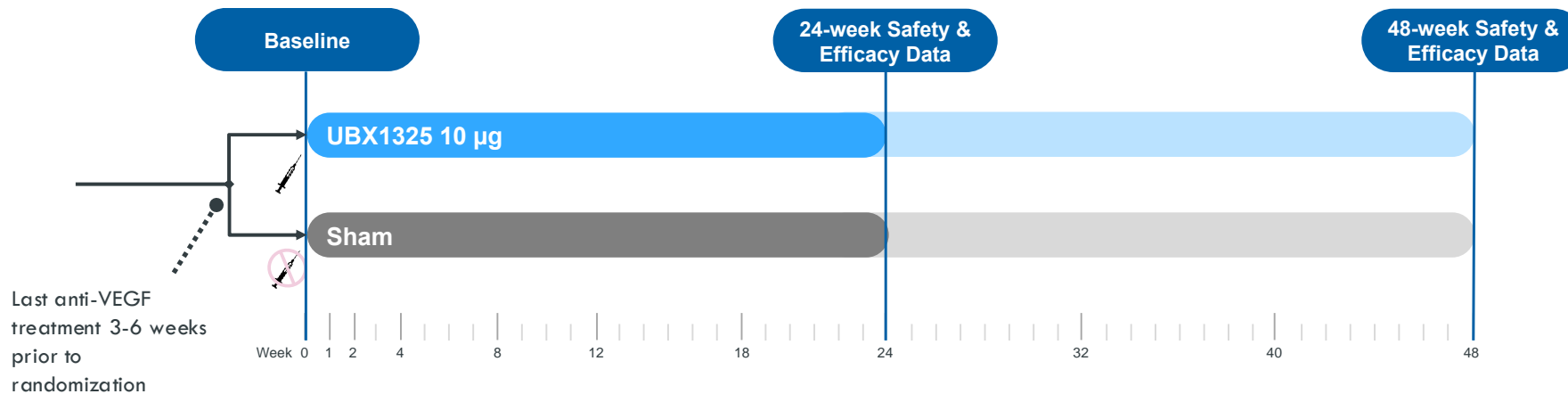
Context for Novel Therapeutic Options for Patients with DME: Patients on anti-VEGF Plateau After 6 months of Treatment and Stop Gaining Vision



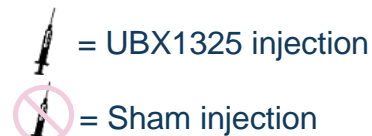
BEHOLD Study Design, Patient Population, and Endpoints

Patient Population: Sub-optimal response to anti-VEGF

- Individuals with **Diabetic Macular Edema**
- **Repeated anti-VEGF** treatments (≥ 2 injections/6 months) – Actual: 4.1 injections in prior 6 months
- **Residual retinal fluid** ($\geq 300 \mu\text{m}$) – Actual: 439.6 μm
- **Visual acuity deficit** (73 ETDRS letters or worse) – Actual: 61.4 ETDRS letters



	Sham	UBX	Total
Full Analysis Set	33	32	65
Completed to 24 Weeks only	4	5	9
Lost to follow-up	1	3	4
Site Closure	1	0	1
Patient withdrawal	1	0	1
Available through 48 Weeks	26	24	50



Endpoints

Safety and tolerability

BCVA change from baseline

Durability of response

Sub- and intra-retinal fluid, CST changes

Proportion of UBX1325 patients requiring 2 or more rescue treatments

UBX1325-treated Patients had Marked Reduction in Need for Anti-VEGF Rescue Compared to Sham-treated Patients Through 48 weeks

- Median Time-To-First-Rescue in UBX arm was >48 weeks (at least 30 weeks greater than Sham arm)
- ~50% of UBX-treated patients went without rescue through 48 weeks
- ~80% of sham-treated patients required rescue before 48 weeks

Rescue Criteria (Either)

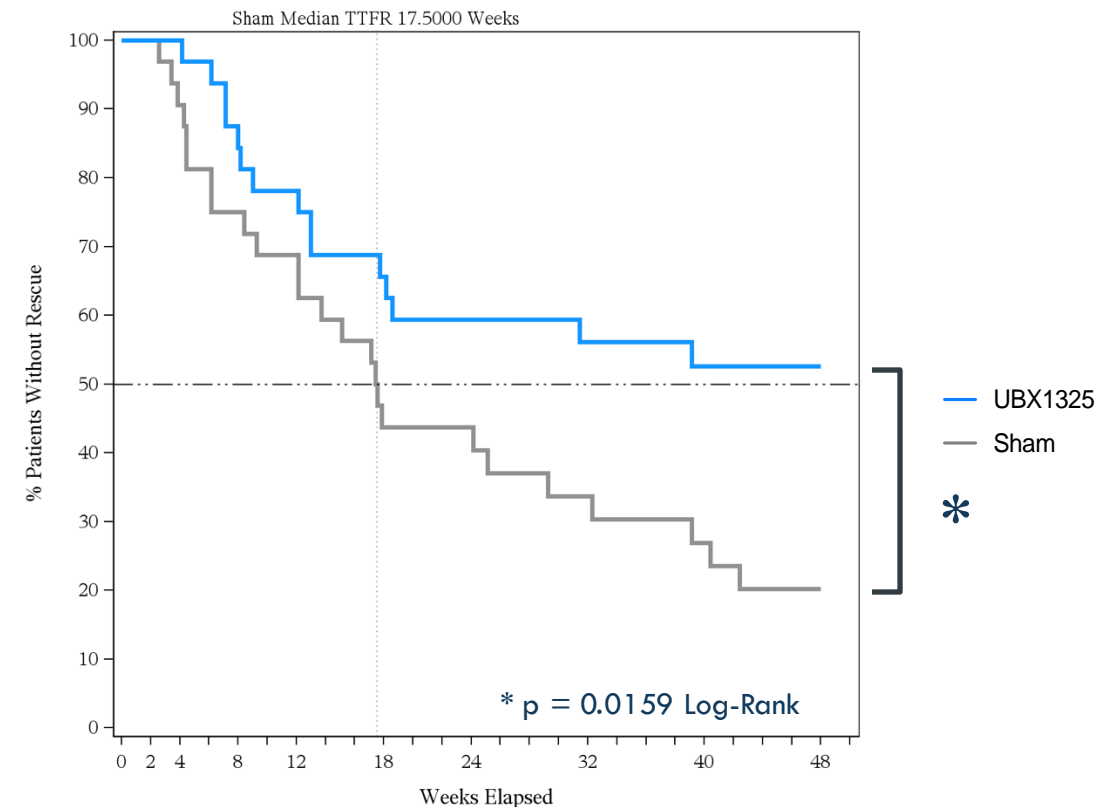
Decrease of 10 ETDRS or more letters from any peak value

Increase in CST of 75 μm or more from baseline

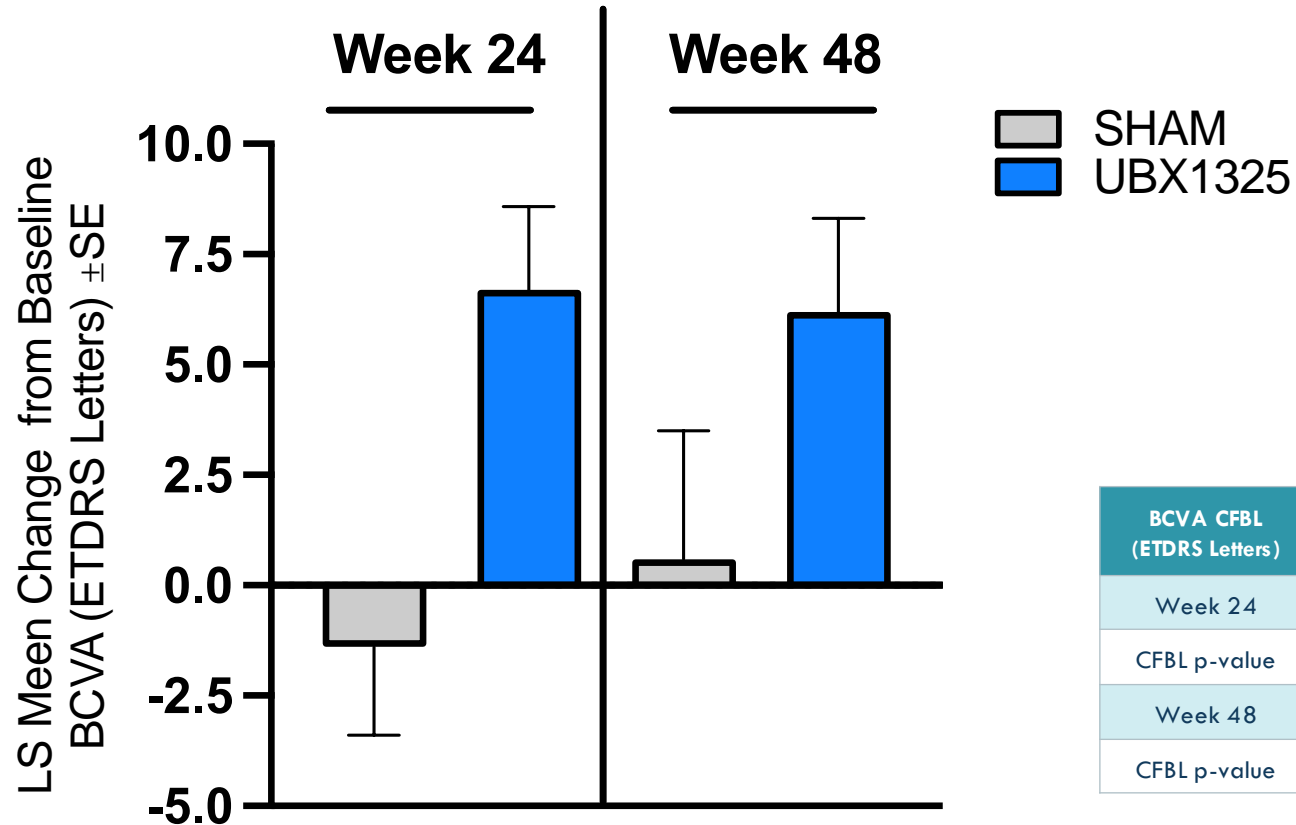
Physician discretion

Efficacy analyses excluding and including data post anti-VEGF rescue show a treatment benefit of UBX1325

Median Time to First Rescue Sham: 17.5 Weeks



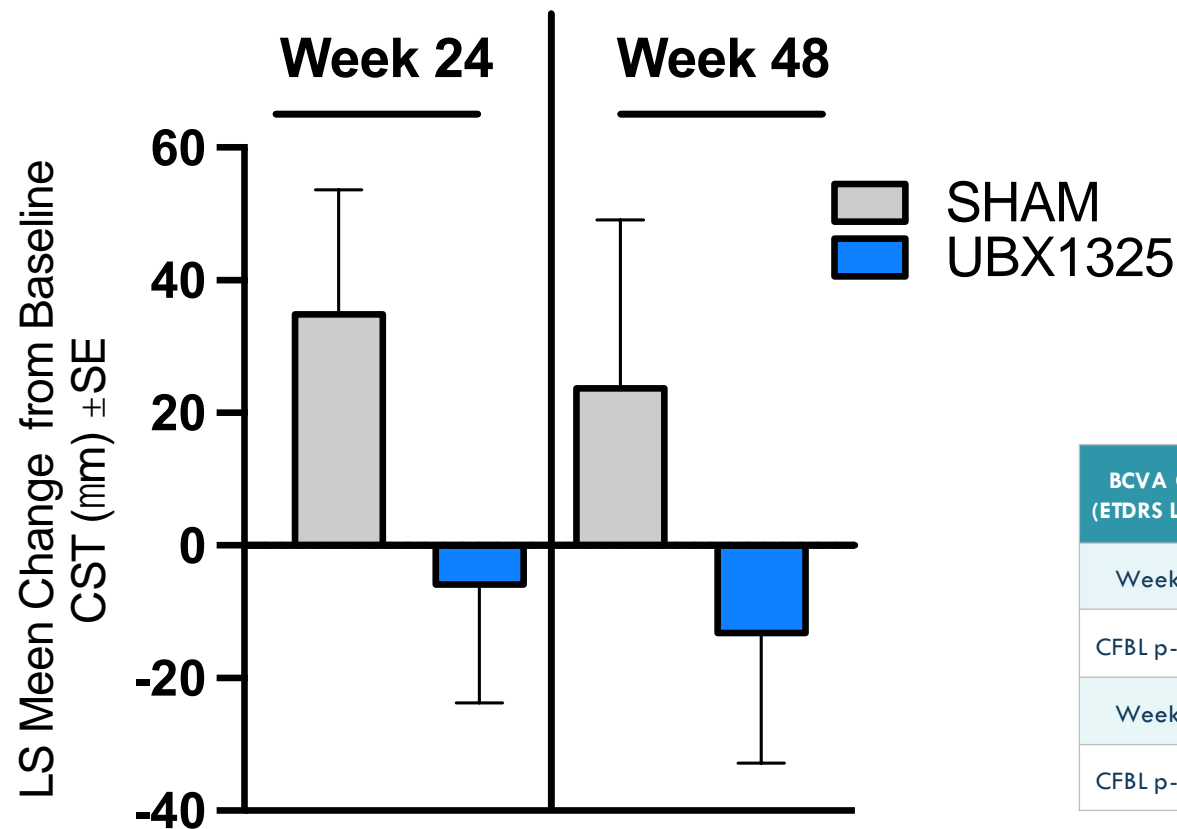
UBX1325-treated Patients had a Significant Improvement in BCVA from Baseline at Weeks 24 and 48



BCVA CFBL (ETDRS Letters)	UBX1325	Sham	Delta	Between Group p-value
Week 24	6.7	-1.4	8.1	0.0031
CFBL p-value	0.0004	NS		
Week 48	6.2	0.6	5.6	0.1198
CFBL p-value	0.0037	NS		

MMRM analysis, excluding post-rescue data

CST Remained Stable or Improved in UBX1325-treated Patients Compared to Worsening in Sham Patients

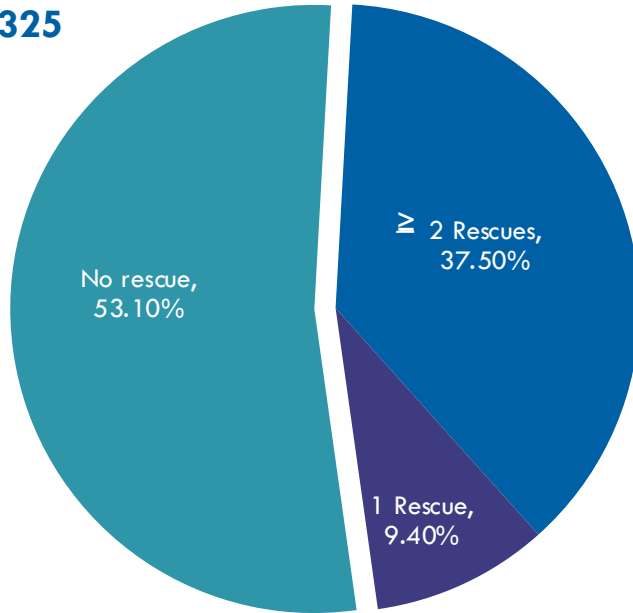


BCVA CFBL (ETDRS Letters)	UBX1325	Sham	Delta	Between Group p-value
Week 24	-6.4	35.4	-41.8	0.0985
CFBL p-value	NS	0.0534		
Week 48	-13.7	24.2	-37.9	NS
CFBL p-value	NS	NS		

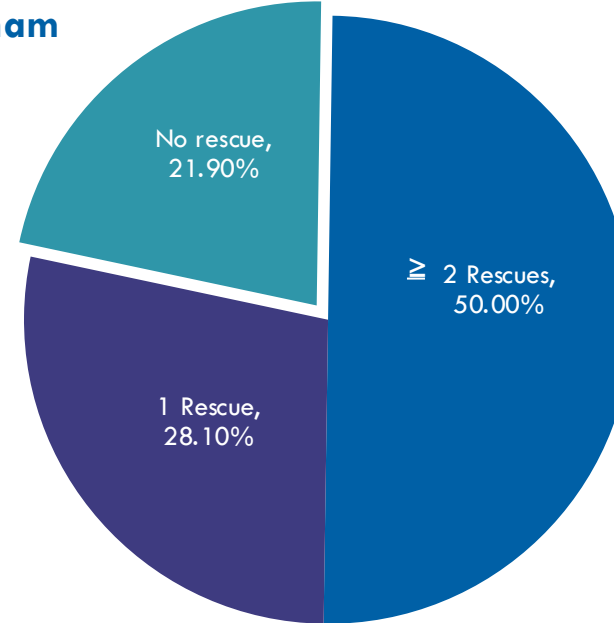
MMRM analysis, excluding post-rescue data

53% of UBX1325-Treated Patients Did Not Require Anti-VEGF Rescue Through 48 weeks

UBX1325



Sham



UBX vs. Sham

P = 0.0096

Rescue Criteria (EITHER)

Decrease of 10 ETDRS or more letters from any peak value

Increase in CST of 75 μm or more baseline

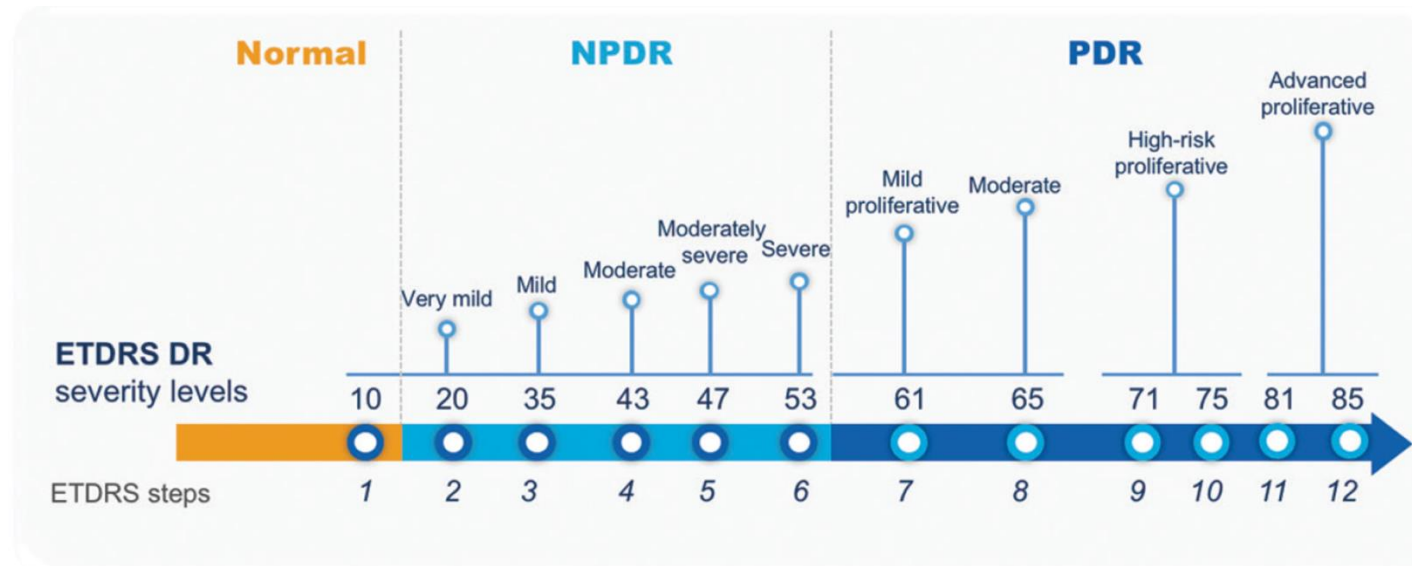
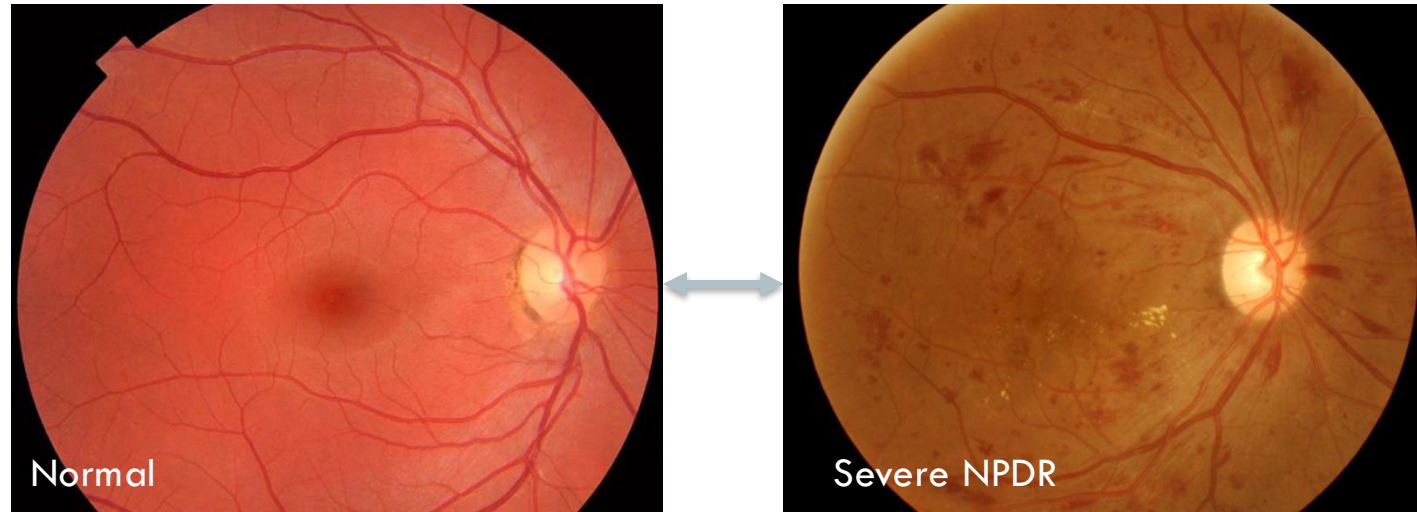
Physician discretion

UBX1325 Demonstrated a Favorable Overall Safety and Tolerability Profile with no Instances of Intraocular Inflammation

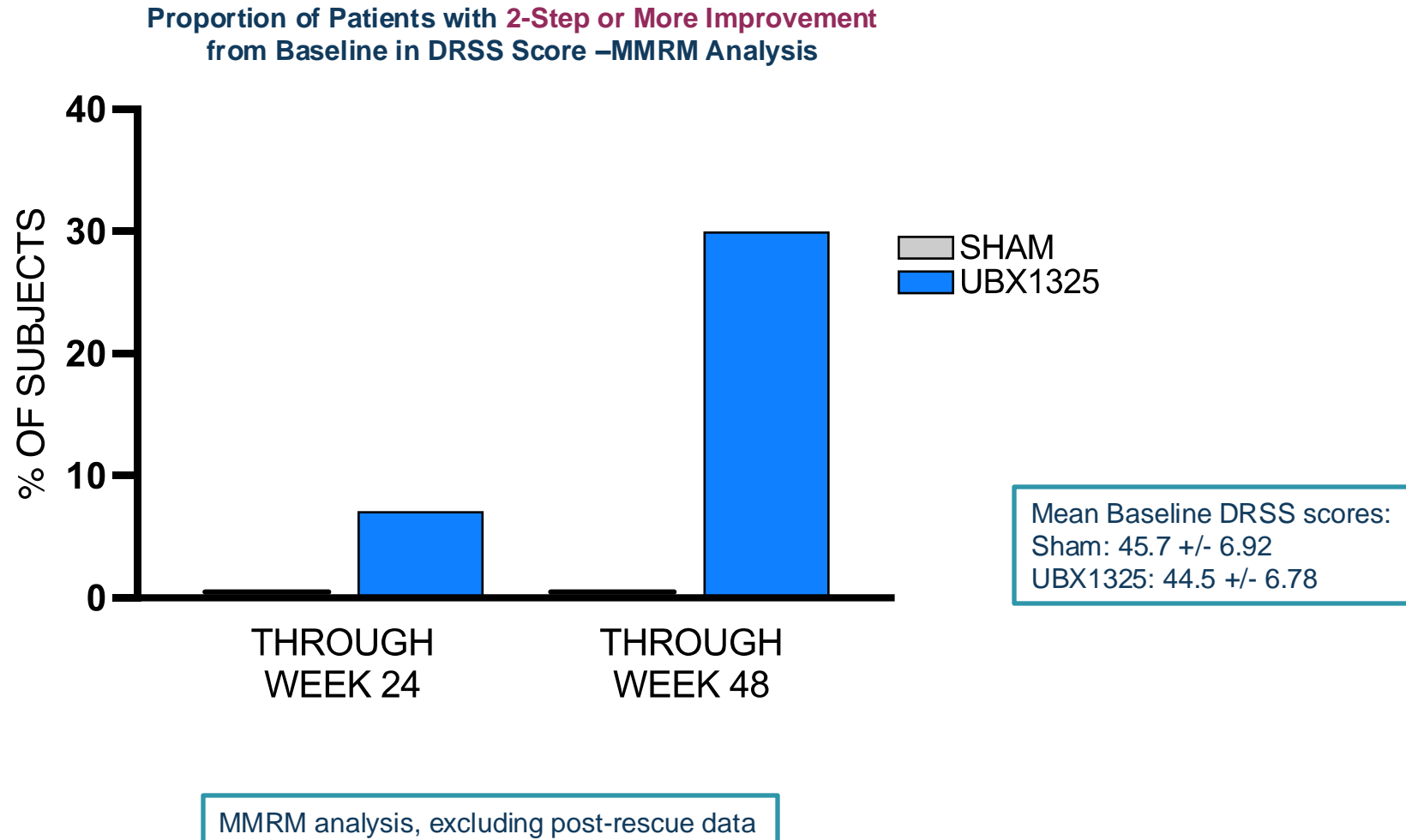
Parameter	Sham (n=33)	UBX1325 10 µg (n=32)
Subjects with at least one TEAE	31 (93.9)	26 (81.3)
Related TEAE	3 (9.1)	6 (18.8)
Grade \geq 3 TEAE	4 (12.1)	5 (15.6)
Serious TEAE	3 (9.1)	5 (15.6)
Ocular TEAE for Study Eye	28 (84.8)	23 (71.9)
Treatment-related Ocular TEAE for Study Eye	3 (9.1)*	6 (18.8)*
TEAE leading to death	0	0
Intraocular inflammation, endophthalmitis, retinal artery occlusion, or vasculitis	0	0

* Most are likely procedural related, all were mild-mod, and self-limited: Sham: 1 conj. hemorrhage, 1 conj. hyperemia, 1 diabetic macular edema. UBX: 5 conj. hemorrhage, 1 ant. chamber pigmentation, 1 eye irritation

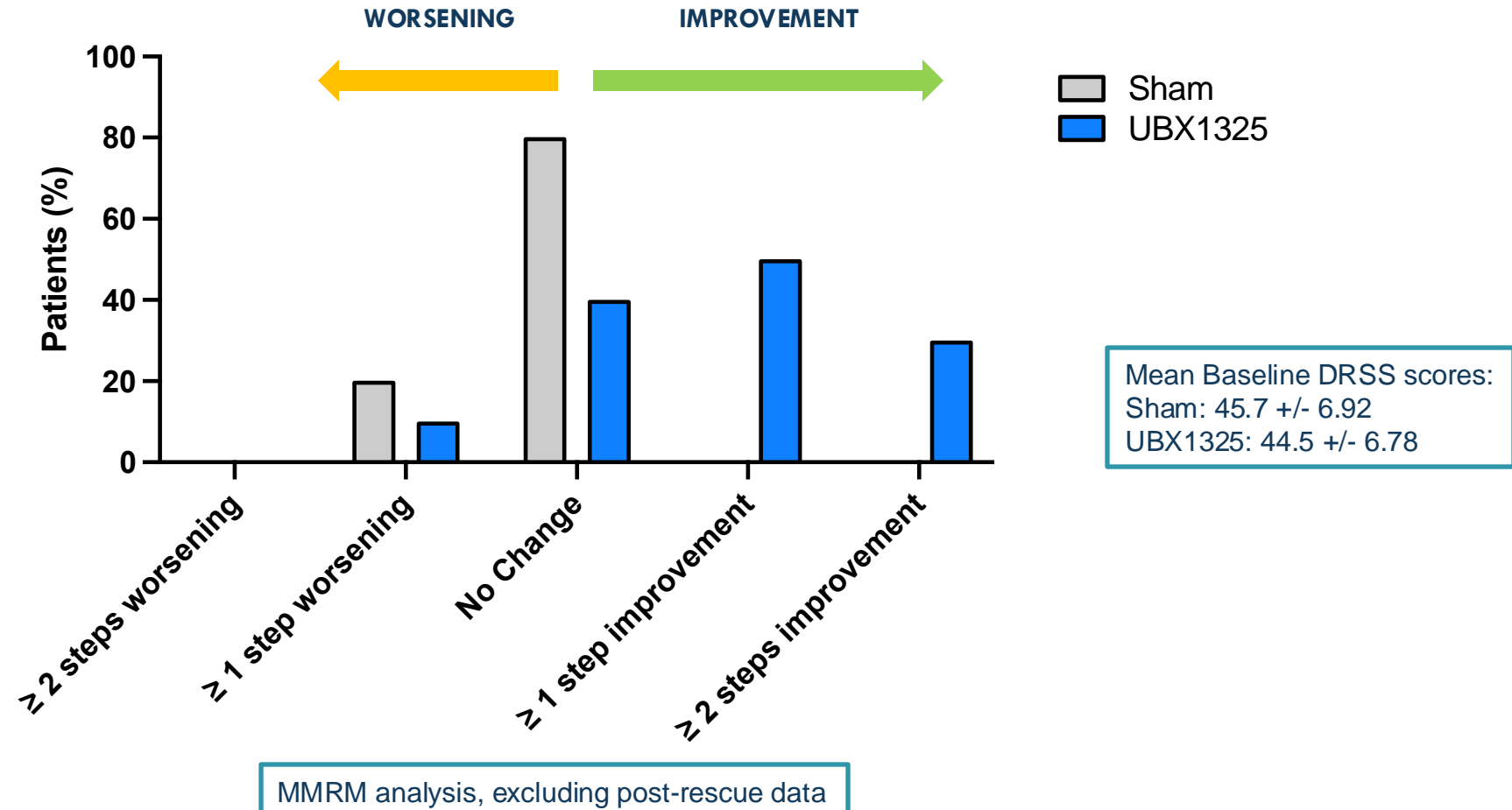
Diabetic Retinopathy is Assessed Based on the Diabetic Retinopathy Severity Score (DRSS)



30% of UBX1325-treated Patients Had a 2-step Improvement in Diabetic Retinopathy Severity Score (DRSS) at Week 48 Compared to No Improvement in the Sham Arm



Over 40% of UBX1325-treated Patients Had a DRSS Score Improvement at Week 48 Compared to No Improvement or Worsening in the Sham Arm



In the BEHOLD Study, UBX1325:

- Improved visual acuity at 48 weeks by **6.2 letters from baseline after a single injection**
- Led to ~50% of patients achieving a **rescue-free interval of at least 48 weeks** and may represent the **potential for disease modification**
- **Maintained retinal structure** throughout the duration of the study without the need for anti-VEGF rescue
- Had a **generally favorable safety and tolerability profile** with no intraocular inflammation or other serious TEAE

UBX1325 may be an important future therapeutic option for patients with diabetic macular edema

UBX1325

**Summary of Findings
and Concordance of
Evidence Supporting a
Treatment Effect of
UBX1325 in Diabetic
Macular Edema**

ASPIRE Ph2b Study

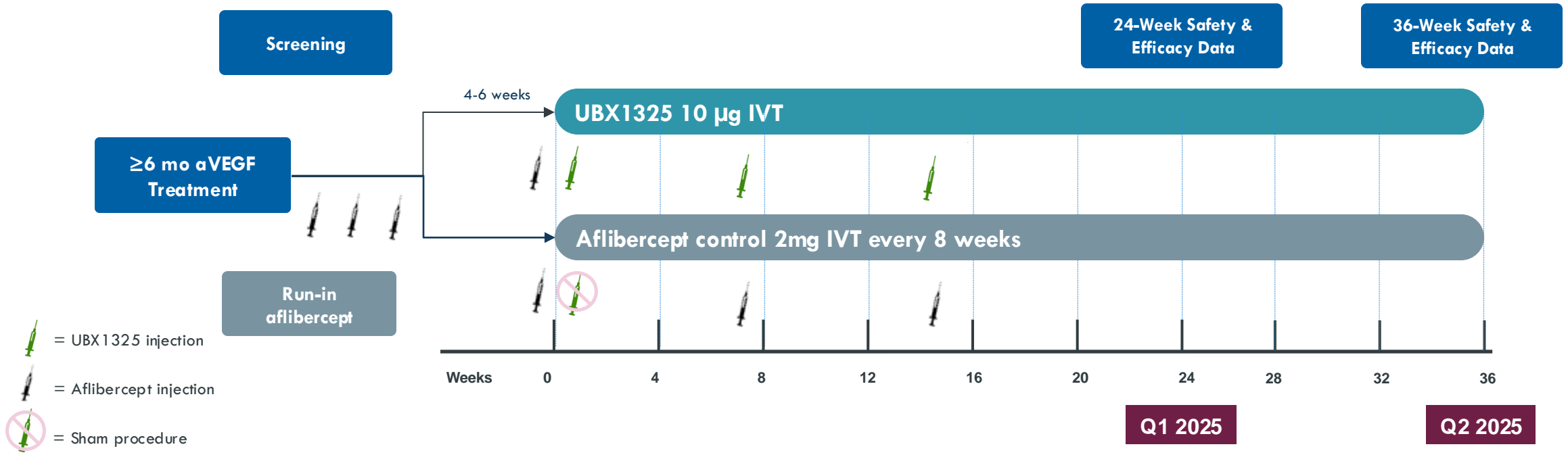
UBX1325 head-to-head against aflibercept in patients with DME

FDA Type C Interaction and Pivotal Study Expectations

**CMC Readiness
Pivotal Drug Product**



ASPIRE: DME Phase 2b Study Design (Head-to-head against aflibercept)



Patient Population: Participants with NPDR who have active DME despite treatment with ≥ 3 anti-VEGF injections in preceding 6 months; BCVA 70 – 30 ETDRS letters; CST $> 325\mu\text{m}$

- **Duration: 36 Weeks; Randomization: 1:1**
- **Size: n=50 (25 /arm)**

Endpoints

Primary endpoint: BCVA change from baseline to week 24 (noninferiority)

Secondary endpoints include: BCVA change from BL over time • CST change from BL over time • proportion of patients gaining ≥ 15 , ≥ 10 , ≥ 5 , or ≥ 0 letters from BL • safety and tolerability • proportion of participants who do not require anti-VEGF rescue

Exploratory endpoints: DRSS change from BL at weeks 24 and 36

FDA Type C Interaction and Implications for Ph3 Design

Type C Engagement

Recent FDA Type C engagement with written feedback received on Ph3 Study expectations

Opportunity for a **pivotal study largely in line with Ph2 ASPIRE trial**

Ph3 Design Implications

Primary Endpoint: Non-Inferiority to Aflibercept as assessed by BCVA with 4.0-letter non-inferiority margin

Comparator: Aflibercept 2mg Q8 weeks

ASPIRE Top Line Results expected in Q1 2025 to inform End of Ph2 meeting and final Phase 3 design

CMC Readiness: Successful Engineering Batch run for Pivotal Drug Product



Filling



Capping



One tray of UBX1325 DP

Fireside Chat with Retina Experts

Arshad Khanani, MD, MA, FASRS

Dante Pieramici, MD, FASRS

Fireside Chat: Welcome and Introductions



Dante Pieramici, MD, FASRS

Partner California Retina Consultants/Retina

Consultants of America

Medical Director Clinical Research California Retina Consultants

President California Retina Research Foundation



Arshad M. Khanani, MD, MA, FASRS

Managing Partner, Director of Clinical Research, and Director of Fellowship

at Sierra Eye Associates and Clinical Professor at the University of Nevada,

Reno School of Medicine

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Closing Remarks
Anirvan Ghosh, CEO