(NASDAQ: OCUL)

OCULAR THERAPEUTIX

Evolving into a leading retina company

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Ocular Therapeutix™

OIS: Ophthalmology Innovation Source
Retina Innovation Summit | 4 May 2024

FORWARD-LOOKING STATEMENTS AND DISCLAIMERS

Any statements in this presentation about future expectations, plans, and prospects for the Company, including the development and regulatory status of the Company's product candidates, including the timing, design, and enrollment of the Company's pivotal trials of AXPAXLI (also called OTX-TKI) for the treatment of wet AMD; the Company's plans to advance the development of AXPAXLI, PAXTRAVA and its other product candidates; the size of potential markets for our product candidates; the potential utility of any of the Company's product candidates; projected net product revenue, in-market sales, and other financial and operational metrics of DEXTENZA; the Company's cash runway and sufficiency of the Company's cash resources; and other statements containing the words "anticipate", "believe", "estimate", "expect", "intend", "goal", "may", "might", "plan", "predict", "project", "target", "potential", "will", "would", "could", "should", "continue", and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors. Such forward-looking statements involve substantial risks and uncertainties that could cause the Company's preclinical and clinical development programs, future results, performance, or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the timing and costs involved in commercializing DEXTENZA or any product or product candidate that receives regulatory approval; the ability to retain regulatory approval of DEXTENZA or any product or product candidate that receives regulatory approval; the initiation, design, timing, conduct, and outcomes of clinical trials, including the SOL-1 trial, the planned SOL-2 trial and the Company's other ongoing clinical trials; the risk that the FDA will not agree with the Company's interpretation of the written agreement under the SPA for the SOL-1 trial; the risk that even though the FDA has agreed with the overall design of the SOL-1 trial, the FDA may not agree that the data generated by the SOL-1 trial supports potential marketing approval; uncertainty as to whether the data from earlier clinical trials will be predictive of the data of later clinical trials, particularly later clinical trials that have a different design or utilize a different formulation than the earlier trials; availability of data from clinical trials and expectations for regulatory submissions and approvals; the Company's scientific approach and general development progress; the availability or commercial potential of the Company's product candidates; uncertainties inherent in estimating the Company's cash runway, future expenses, and other financial results, including its ability to fund future operations, including clinical trials; the Company's existing indebtedness and the ability of the Company's creditors to accelerate the maturity of such indebtedness upon the occurrence of certain events of default; the Company's ability to enter into strategic alliances or generate additional funding on a timely basis, on favorable terms, or at all; and other factors discussed in the "Risk Factors" section contained in the Company's quarterly and annual reports on file with the Securities and Exchange Commission. In addition, the forward-looking statements included in this presentation represent the Company's views as of the date of this presentation. The Company anticipates that subsequent events and developments will cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so, whether as a result of new information, future events or otherwise, except as required by law. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date of this presentation.

This presentation discusses investigational product candidates in development. Their efficacy and safety profiles have not been established, and they have not been approved for marketing by the FDA.

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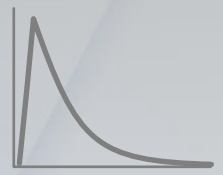
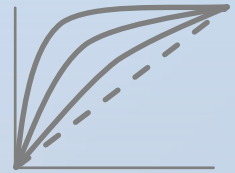
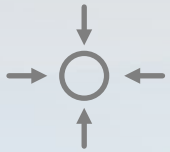
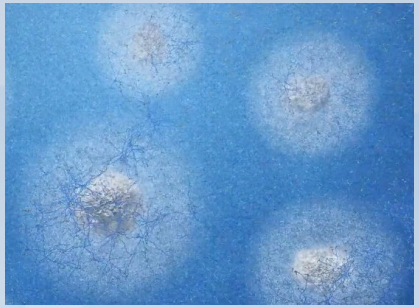
MISSION: IMPROVE VISION IN THE REAL WORLD

Bridge the gap with proven therapies: Optimizing drug delivery to reduce burden and increase treatment effect

CURRENT THERAPIES IN THE OPHTHALMIC SPACE HAVE CHALLENGES RELATING TO…	ADDRESSING THROUGH OPTIMIZED DRUG DELIVERY
 Limited half-life of drugs requiring frequent dosing to maintain therapeutic levels, creating compliance issues	**Sustained drug release** 
 Pulsatile dosing is suboptimal	**Favorable elution profile** which potentially improves chronic outcomes
 Molecule choices limited due to issues like size or poor stability	**Tailored and targeted delivery** of multiple molecule options to meet specific ocular disease requirements 

Downs P. *2023 retinal pharmaceuticals market report: Global analysis for 2022 to 2028*. Market Scope; 2023.

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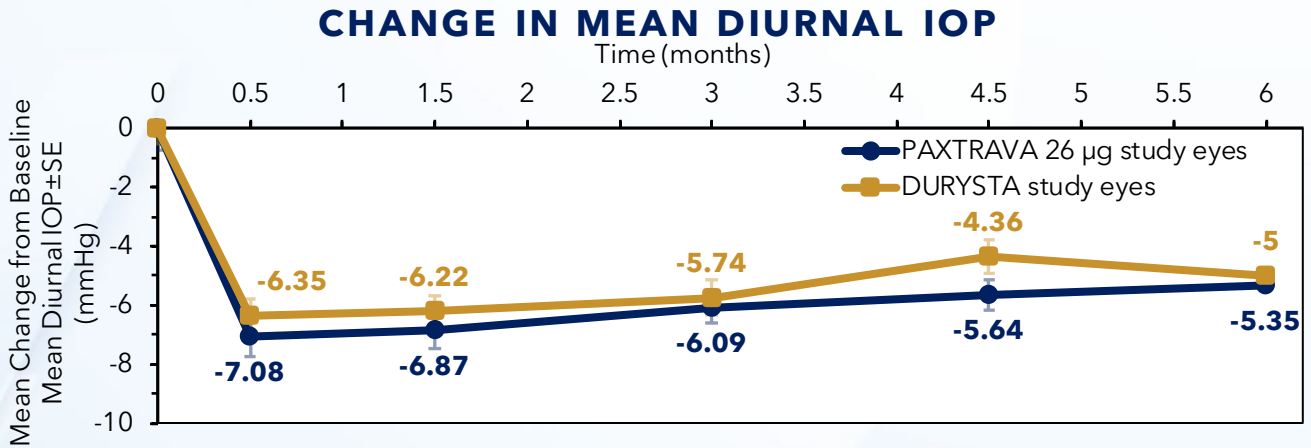
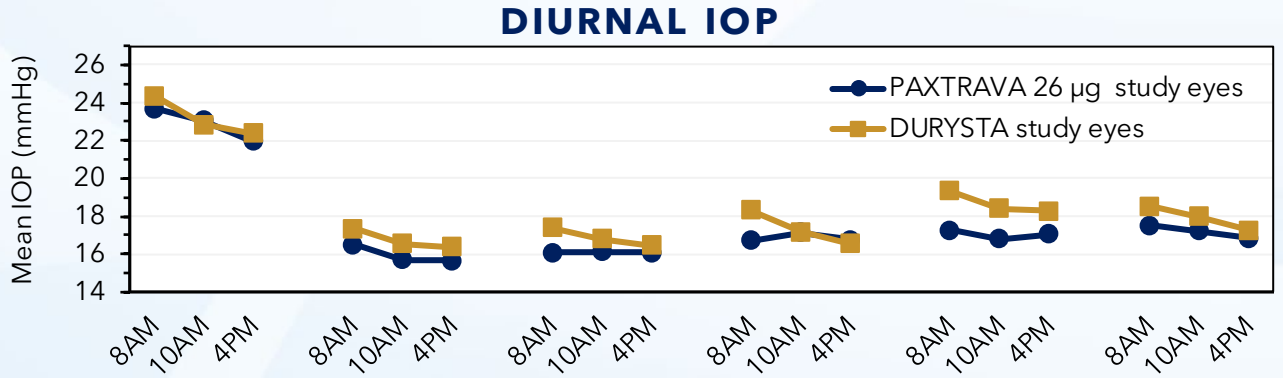
PAXTRAVA™ OFFERS THE POTENTIAL FOR TARGETED, CONTINUOUS, CONSISTENT IOP CONTROL IN GLAUCOMA MANAGEMENT

TOPLINE 6-MONTH DATA FROM PHASE 2 TRIAL EVALUATING PAXTRAVA PRESENTED AT ASCRS





Sizable opportunity with over 10M patients with open-angle glaucoma or ocular hypertension in US[1]

Designed to deliver travoprost for 6 months or longer from a single completely bioresorbable implant[2]

Administered via a single 26G injection intracamerally[2]

Phase 2 results demonstrate consistent and sustained IOP reductions through 6 months with PAXTRAVA 26 µg[3]

IOP (Intraocular pressure).

1. Downs P. *2023 glaucoma pharmaceuticals market report: Global analysis for 2022 to 2028.* Market Scope; 2023.
2. Blizzard C, Desai A, et al, US patent 11,622,935 B2. April 11, 2023.
3. Gallardo M. Presented at the American Society of Cataract and Refractive Surgery. April 6, 2023, Boston, MA.

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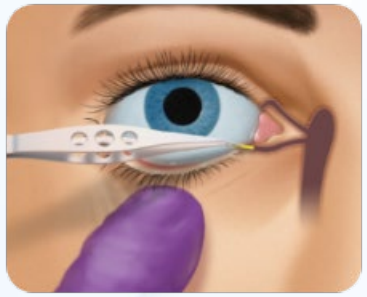
DEXTENZA® SHOWCASES OUR SUCCESS USING THE ELUTYX™ TECHNOLOGY IN OUR FIRST COMMERCIAL DRUG



DEXTENZA: First and only FDA-approved drug-eluting intracanalicular insert providing up to 30 days of sustained steroid coverage[1]

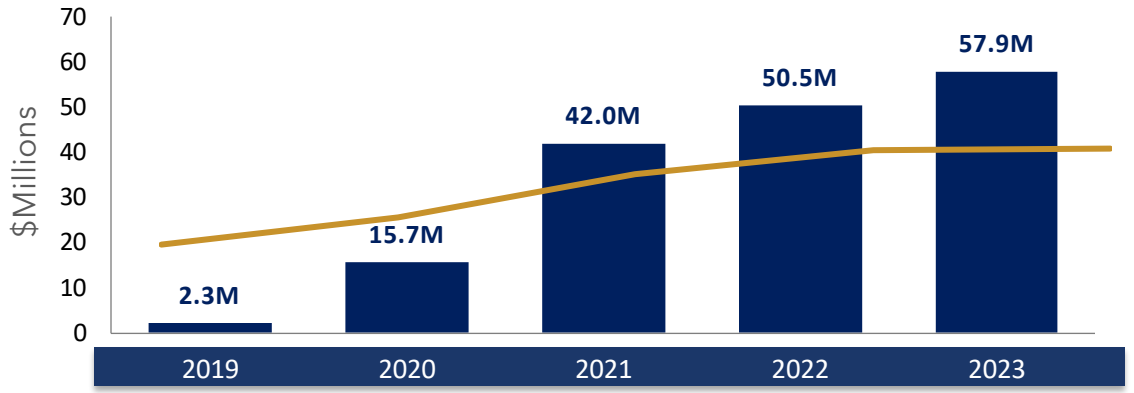
Sustained relief of inflammation and pain, **reduces steroid drop burden**

Concept-to-approval: 7 years

Nearly **400,000 eyes** treated to date with DEXTENZA

More than **5M patients** treated with therapies utilizing hydrogel platform[2]

NET REVENUE



*DEXTENZA Net Product Revenue and †Selling and Marketing expense as reflected on the Company's quarterly income statements and in the company's periodic reports.

Consistent revenue growth year over year

Ocular Therapeutix data on file.

1. DEXTENZA [package insert]. Bedford, MA: Ocular Therapeutix, Inc; 2021. Full Prescribing Information

2. Stuart M. Instylla: An easy, predictable, and simpler way to embolize tumors. MedTech Strategist. 2021.

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DEVELOPING AXPAXLI™ FOR RETINAL VASCULAR DISEASES TO ADDRESS CURRENT CHALLENGES WITH EXISTING TREATMENTS

TREATMENT BURDEN

Anti-VEGF dosing frequencies are burdensome, contributing to vision loss over time[1]

POOR LONG-TERM OUTCOMES

Treatment discontinuation: Dosing regimens are a burden to patients and the main driver of treatment discontinuation[2]

Retinal fluctuations: Pulsatile dosing causes retinal fluctuations between doses and can lead to worse outcomes due to fibrosis and atrophy[3,4]

Suboptimal response to current VEGF-A focused options: Precipitates the need for novel treatment approaches and/or mechanisms of action[5]

THE AXPAXLI OPPORTUNITY

Potential for improved long-term outcomes with a sustainable and non-pulsatile treatment, providing pan-VEGFR inhibition

VEGF (Vascular endothelial growth factor [receptor]).

1. Khanani AM, et al. *Ophthalmol Retina.* 2020;4(2):122-133. **2.** Weber M, et al. *BMJ Open Ophthalmol.* 2020; 5(1).
3. Llorente-González S, et al. *Acta Ophthalmol.* 2022;100(2):e521-e531. **4.** Evans RN, et al. *JAMA Ophthalmol.* 2020;138(10):1109.
5. Khachigian LM, et al. *J Transl Med.* 2023; 21(1).

Ocular Therapeutix™

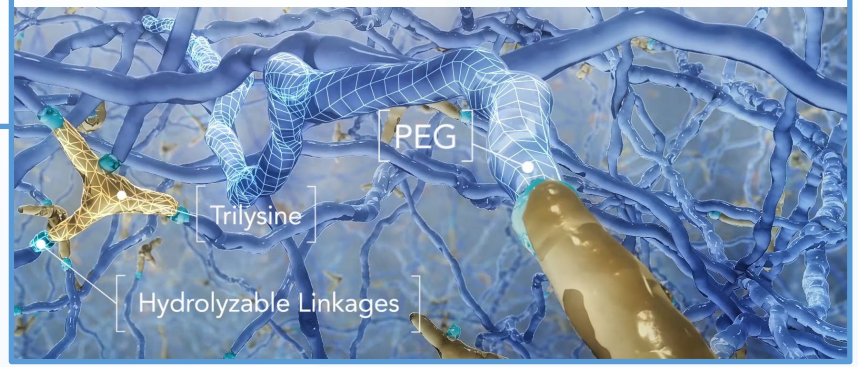
AXPAXLI: SUSTAINED-RELEASE AXITINIB IN HYDROGEL

AXPAXLI (axitinib intravitreal implant)

ELUTYX TECHNOLOGY

BIORESORBABLE, TARGETED, SUSTAINED DRUG DELIVERY

OTX's proprietary bioresorbable polymer matrix is a hydrogel-based, versatile, biocompatible platform for localized sustained drug delivery



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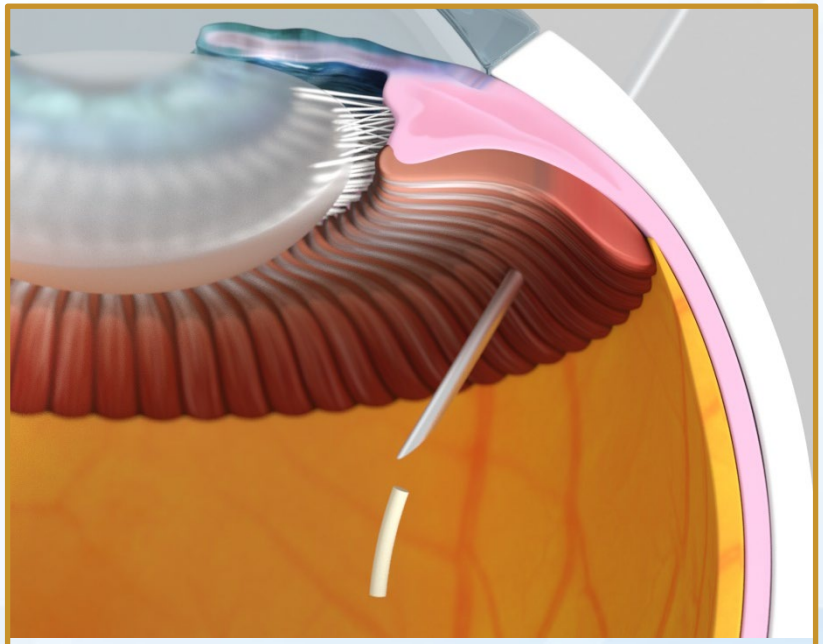
AXITINIB

MULTI-TARGET TYROSINE KINASE INHIBITOR

Axitinib is a highly selective inhibitor of all VEGF and PDGF receptors with high affinity and low solubility compared to other ocular TKIs[1]

Drug	Inhibitory Concentrations for VEGFR2/KDR (IC_{50} in nM) (lower values indicate higher affinity)
Axitinib[2]	**0.2**
Sunitinib[3]	40
Vorolanib[3]	64



- **Completely bioresorbable over 9-12 months**
- **Administered by a 25G needle**
- **Covered by a US patent that expires 2041[4]**

KDR (Kinase insert domain receptor); PDGF (Platelet-derived growth factor); PEG (Polyethylene glycol); TKI (Tyrosine kinase inhibitor); VEGF (Vascular endothelial growth factor [receptor]).

1. Zhao Y, et al. *Oncologist*. 2015;20(6):660-673.
2. Gross-Goupil M, et al. *Clin Med Insights Oncol*. 2013;7:269-277.
3. Liang C, et al. *Mol Ther Oncolytics*. 2022;24:577-584.
4. Blizzard CD, et al. US Patent: Ocular implant containing a tyrosine kinase inhibitor. Published online September 13, 2022. Accessed September 26, 2022.

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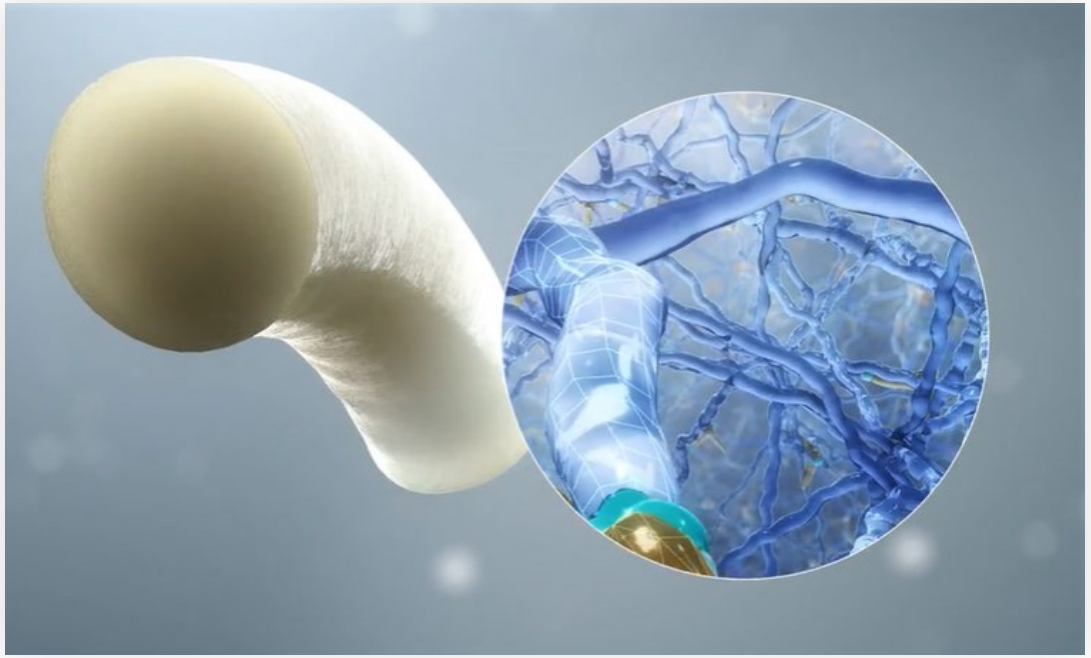
AXITINIB RELEASED FROM HYDROGEL BY SLOW DIFFUSION



1. HYDROGEL MESHWORK

Cross-linked multi-arm PEG hydrogel network with hydrolyzable ester linkages[1]

2. DRUG SLOWLY DIFFUSES OUT OF HYDROGEL

Micronized axitinib entrapped in hydrogel steadily dissolves into vitreous, then diffuses into ocular tissues[1,2]

3. DRUG RELEASE AND IMPLANT BIORESORPTION

Hydrogel degrades via hydrolysis (like dissolvable sutures), implant bioresorbs, and remaining axitinib is released, continuing delivery[1,3]

Drug release is regulated by drug solubility, implant shape, and clearance mechanisms[4]

PEG (Polyethyleneglycol).
Image shown is for illustrative purposes only.

1. Li J, et al. *Nat Rev Mater*. 2016;1(12):16071. **2.** Jarret PK, et al. Efficacy and tolerability of OTX-TKI, a sustained hydrogel delivery system for a tyrosine kinase inhibitor, in a VEGF-induced retinal leakage model through 12 months. Presented at the Association for Research in Vision and Ophthalmology. May 2019, Honolulu, Hawaii. **3.** Müller DA, et al. *J Orthop Surg Res*. 2016;11(1):111. **4.** Nafo W. Hydrogel biomaterials for drug delivery: Mechanisms, design, and Drugs. Hydrogels - From Tradition to Innovative Platforms with Multiple Applications. Published online March 1, 2023.

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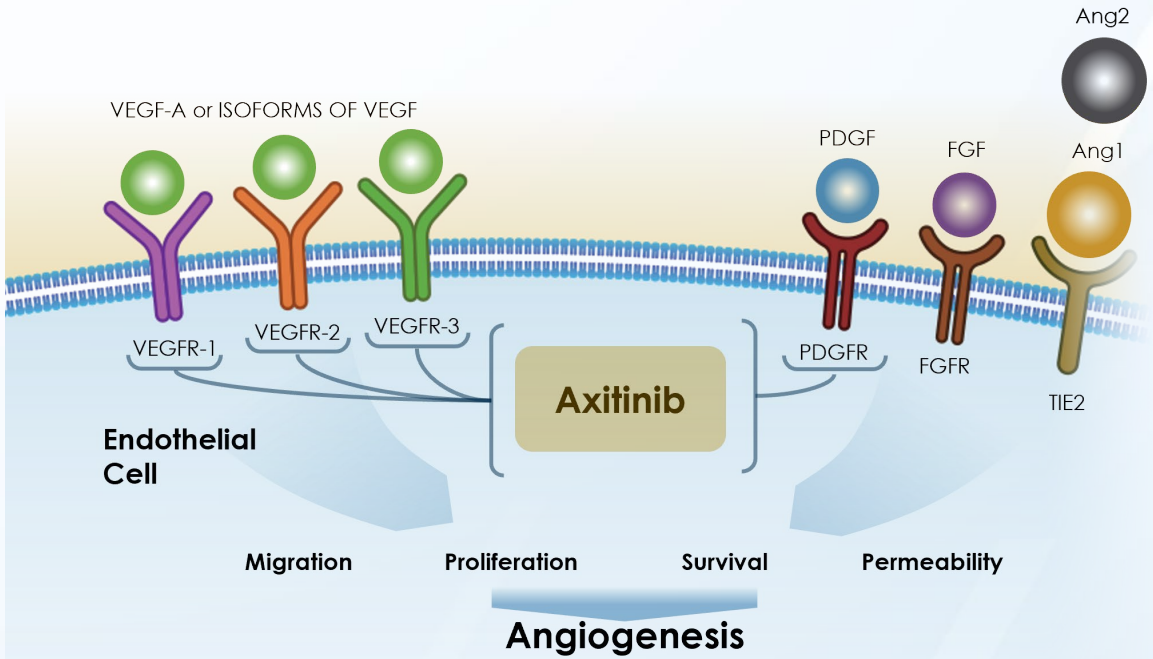
AXITINIB IS A MULTI-TARGETED INHIBITOR OF ALL VEGF RECEPTORS INTRACELLULARLY, THEREBY INHIBITING DOWNSTREAM ANGIOGENESIS SIGNALING

Small molecule and **highly compatible** with **ELUTYX technology** → Small size & low water solubility[1] enables optimal control of extended drug release

TKI with **highest potency and receptor affinity** studied in retinal vascular diseases[2,3] → Allows for the incorporation of smaller drug quantities into a single implant

Highly selective inhibition of all VEGF and PDGF receptors[4] → Potentially maximizes efficacy and minimizes off-target effects[5]

FDA-approved oncology treatment[6] → Established mechanism of action



Paper Presentation on AXPAXLI binding at ARVO 2024 (Time & Date: Thursday, May 9th 3:30 PM – 3:45 PM PT)

Ang (Angiotensin); FGF (Fibroblast growth factor [receptor]); PDGFR (Platelet-derived growth factor receptor); TKI (Tyrosine kinase inhibitor); VEGF (Vascular endothelial growth factor).

1. PubChem. Axitinib. Accessed October 15, 2021. https://pubchem.ncbi.nlm.nih.gov/compound/64505512 **2.** Gross-Goupil M, et al. *Clin Med Insights Oncol*. 2013;7:269-277. **3.** Eyepoint Pharmaceuticals, Inc. Form 8-K. Published online September 15, 2020. Accessed August 24, 2022. https://sec.report/Document/0001564590-20-043596/ **4.** Zhao Y, et al. *Oncologist*. 2015;20(6):660-673. **5.** Salgia R, et al. *Cancer Treat Rev*. 2020;87:102022. **6.** Gross-Goupil M, et al. *Clin Med Insights Oncol*. 2013;7:269-277.

Ocular Therapeutix™

OCULAR THERAPEUTIX: TRANSFORMATION INTO A RETINA-FOCUSED COMPANY

3 PILLARS

1 AXPAXLI™ PROMISING DATA TO DATE

AXPAXLI Proof-of-Concept Demonstrated **as a monotherapy** in Australia Phase 1 **wet AMD** Trial

Potential **best-in-class durability** shown in US Phase 1 **wet AMD** trial

Phase 1 **NPDR** trial shows DRSS **stability or improvement** with **durability** up to 40 weeks[1]

Generally well tolerated to date

2 DE-RISKING REGULATORY PATHWAY

Conducting SOL-1 trial of AXPAXLI under a **Special Protocol Assessment** agreed to by the FDA

3 TARGETING EXPANSIVE RETINAL VASCULAR DISEASE MARKETS

With focus on:

Improving **sustainability of treatment options**

Improving **long-term outcomes**

Opportunities **beyond wet AMD**

AMD (Age-related macular degeneration); DRSS (Diabetic retinopathy severity scale); NDPR (Non-proliferative diabetic retinopathy).

1. Ocular Therapeutix Press release on April 18, 2024. https://investors.ocutx.com/news-releases/news-release-details/ocular-therapeutixtm-announces-positive-topline-phase-1-data

AXPAXLI™ DEMONSTRATED POTENTIAL BEST-IN-CLASS TKI DURABILITY

US TRIAL

Randomized, Masked, Controlled Trial

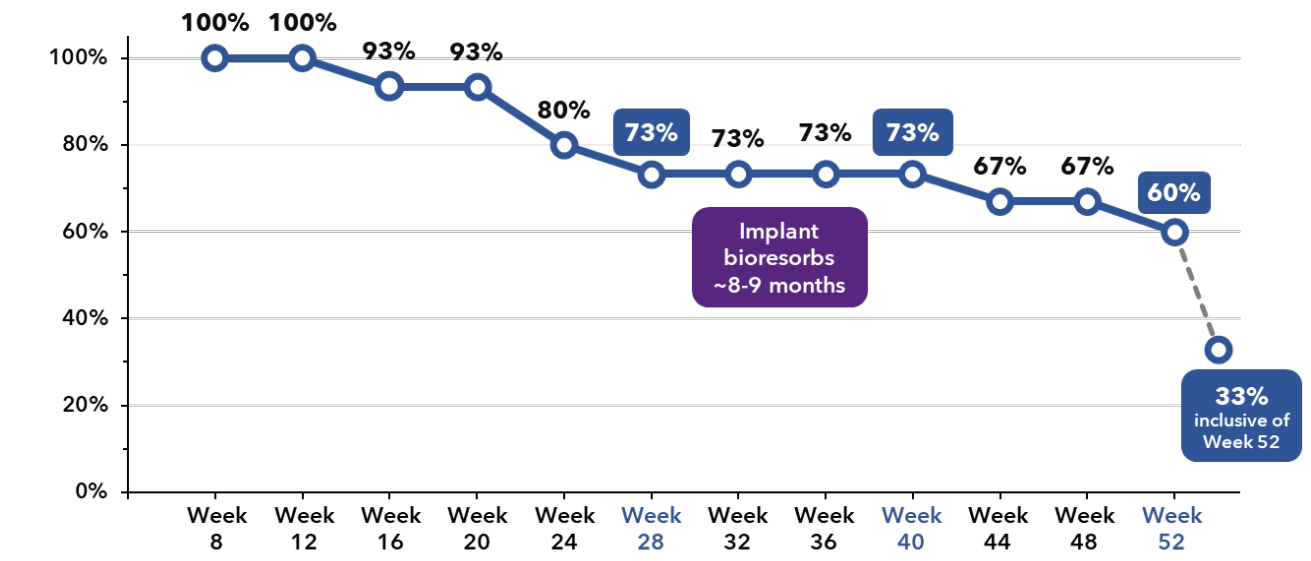
Demonstrated sustained and stable maintenance of fluid and vision for up to 12 months in previously treated wet AMD patients with controlled fluid

73% of AXPAXLI-treated subjects were supplemental injection-free up to 10 months and 60% up to 12 months

Implant bioresorbed ~8-9 months post-injection, with evidence of wet AMD disease reactivation following implant bioresorption

No drug-related ocular or systemic serious adverse events were reported

Percentage of AXPAXLI Subjects Rescue-free Up to Each Visit (n=15)



AMD (Age-related macular degeneration); TKI (Tyrosine kinase inhibitor).
Data cut off April 14, 2023.
Rescue-free rate calculations: If subjects received rescue anti-VEGF therapy at a study visit, those were reflected to count at the following study visit in the graph above.
Percentages presented in the graph above represent rescue-free rates up to each study visit, except for the 33% at Week 52, which includes rescue injections given at the Week 52 study visit.
Ocular Therapeutix data on file.

DE-RISKING REGULATORY PATH FOLLOWING NEW FDA GUIDELINES

Q1 2023 — New FDA Drug Development Guidance released for treatments of neovascular AMD

Q2 2023 — AXPAXLI pivotal trial design adapted to fit the guidance requirements

Special Protocol Assessment (SPA)

Q4 2023 — Received written agreement from FDA regarding initial proposed design of SOL-1 trial

Q1 2024 — Received written agreement from FDA regarding amended design of SOL-1 trial

First subjects screened Feb '24

SOL

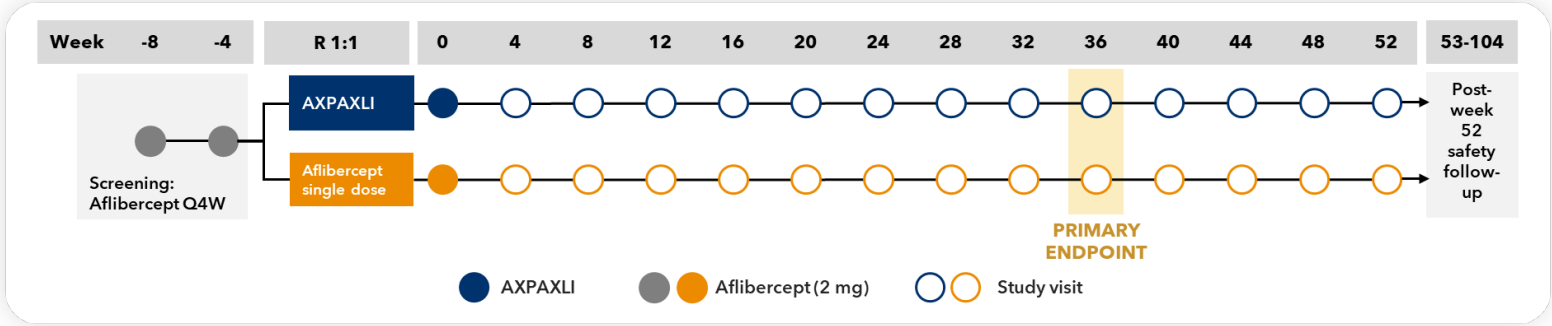
Multi-center, double-masked, randomized, parallel-group trial

DESIGN

- Primarily conducted in the US
- Two arm trial with ~150 subjects per group

KEY INCLUSION CRITERIA

- Subjects who are treatment naïve in the study eye with a diagnosis of choroidal neovascularization or subfoveal neovascularization at screening
- Visual acuity of 20/80 or better at screening
- Vision acuity of 20/20 at Day 1 OR gain of at least 10 ETDRS letters at Day 1



PRIMARY ENDPOINT

Proportion of subjects who maintained visual acuity, defined as <15 ETDRS letters of BCVA loss at Week 36

First subjects randomized April '24. Enrollment update on Investor Day, June 13[1]

AMD (Age-related macular degeneration); BCVA (Best-corrected visual acuity); ETDRS (Early Treatment Diabetic Retinopathy Study).
Ocular Therapeutix data on file.

1. Ocular Therapeutix Press release on May 1, 2024. https://investors.ocutx.com/news-releases/news-release-details/ocular-therapeutixtm-host-investor-day-new-york-city-thursday

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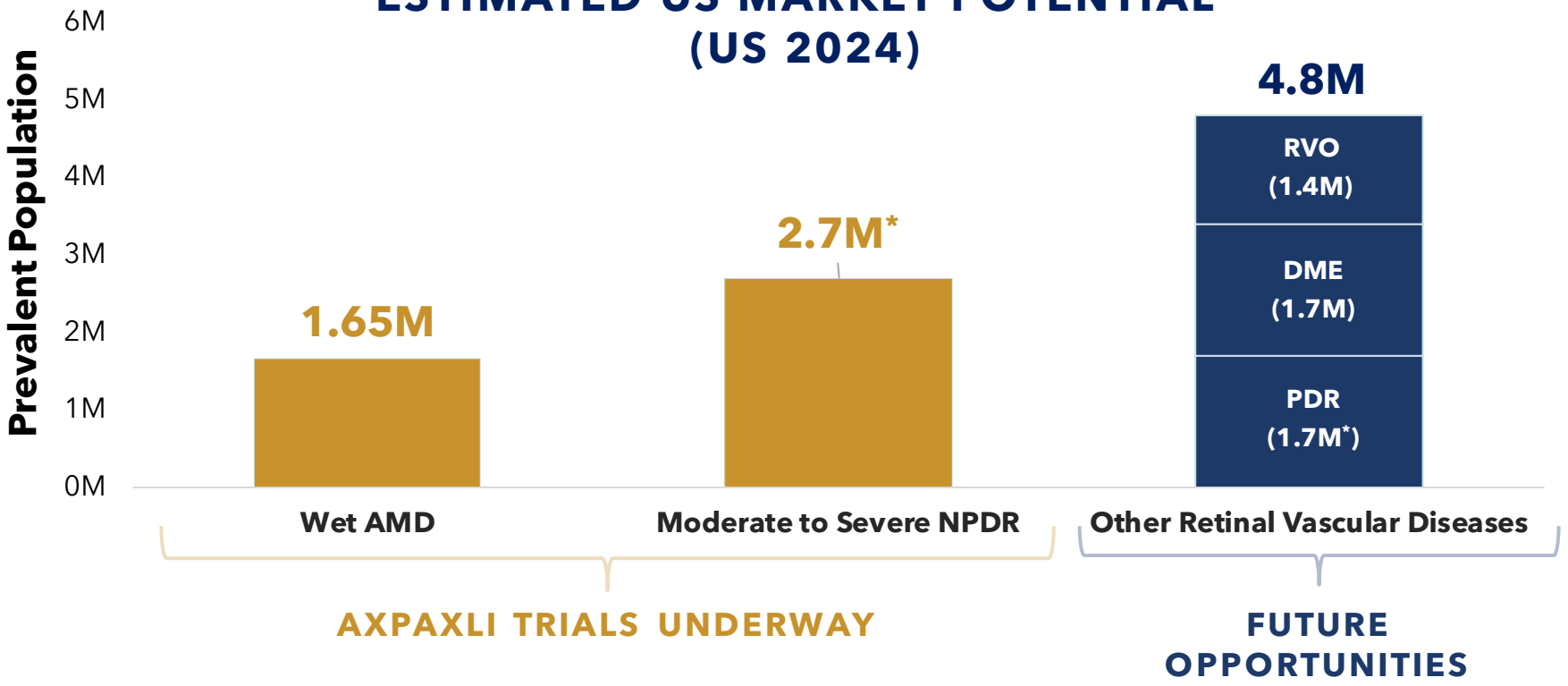
THE MARKET OPPORTUNITY FOR AXPAXLI™ EXTENDS BEYOND WET AMD

RETINAL VASCULAR DISEASE: ESTIMATED US MARKET POTENTIAL[1] (US 2024)



Total US Market Potential: **9.2M**

Well Resourced for Success: ~$500M in cash[2]

AMD (Age-related macular degeneration); DME (Diabetic macular edema); NPDR (Non-proliferative diabetic retinopathy); PDR (Proliferative diabetic retinopathy); RVO (Retinal vein occlusion).
*Excludes patients with DME as some patients have both NPDR/PDR and DME.

1. Downs P. *2023 retinal pharmaceuticals market report: Global analysis for 2022 to 2028*. Market Scope; 2023.
2. Ocular Therapeutix Press release on March 11, 2024. https://investors.ocutx.com/news-releases/news-release-details/ocular-therapeutixtm-reports-fourth-quarter-and-full-year-2023

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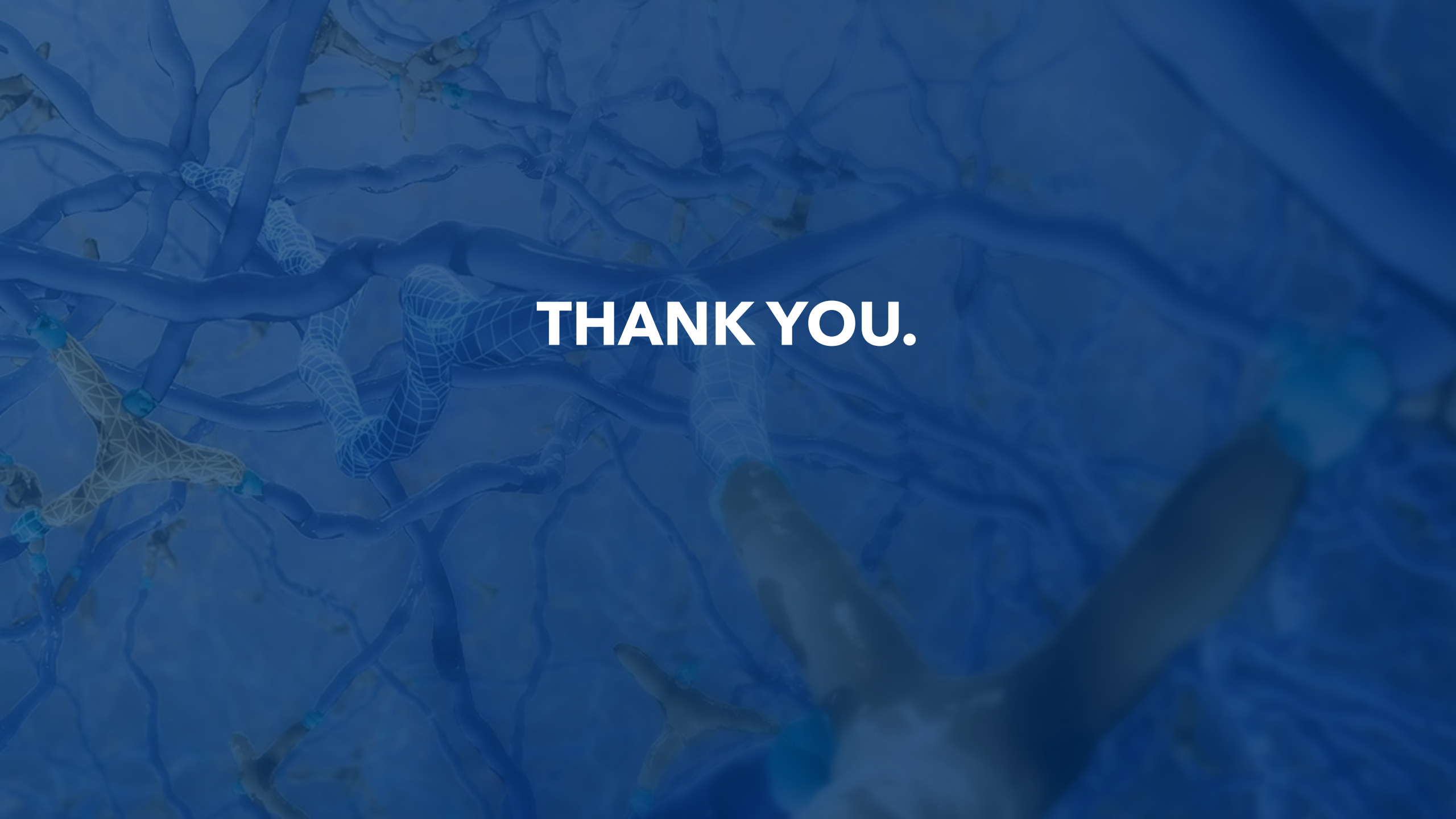
THANK YOU.