(NASDAQ: OCUL)

TRANSFORMING DRUG DELIVERY

LEVERAGING A NOVEL TECHNOLOGY PLATFORM

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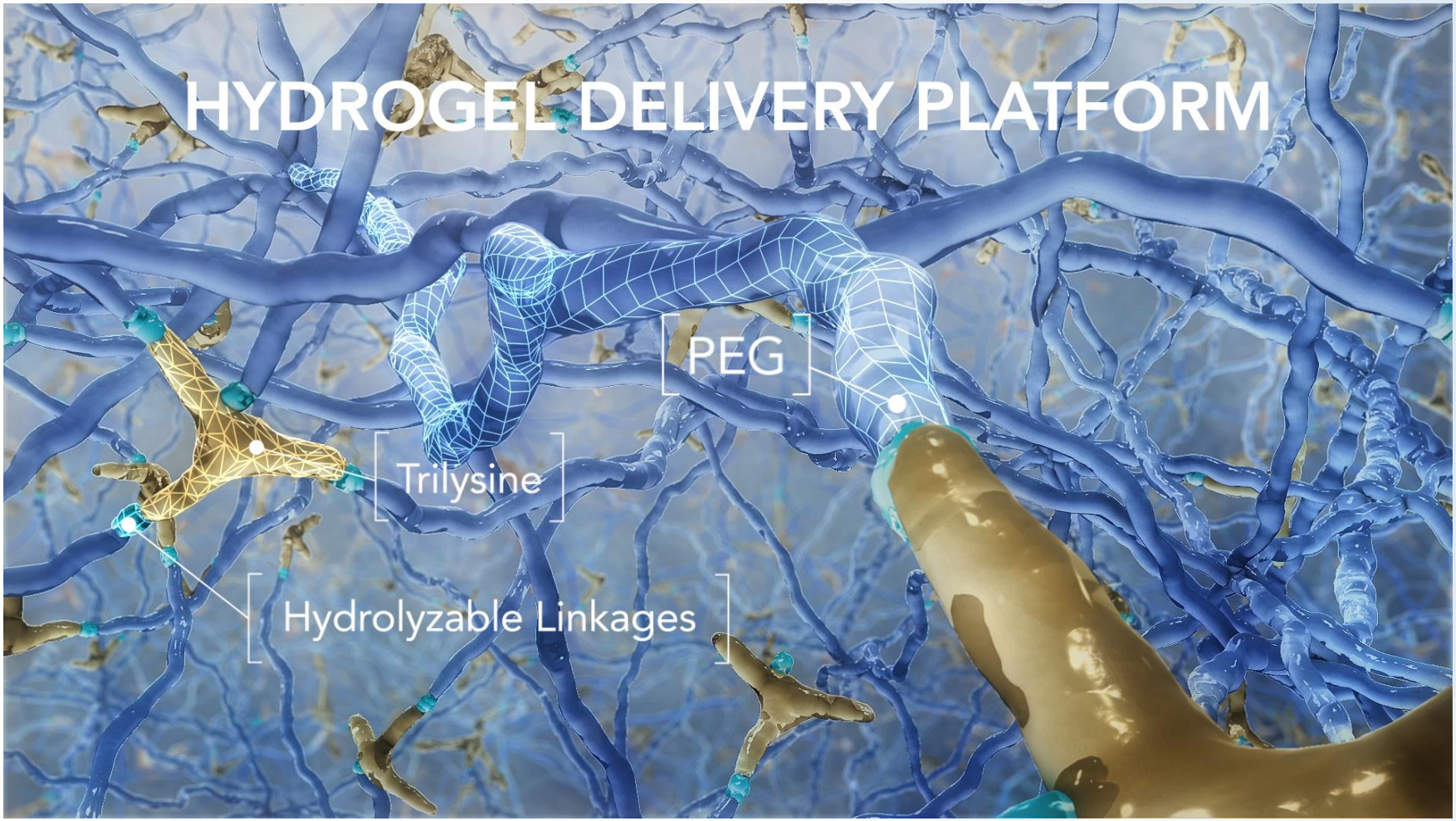
Ocular Therapeutix™

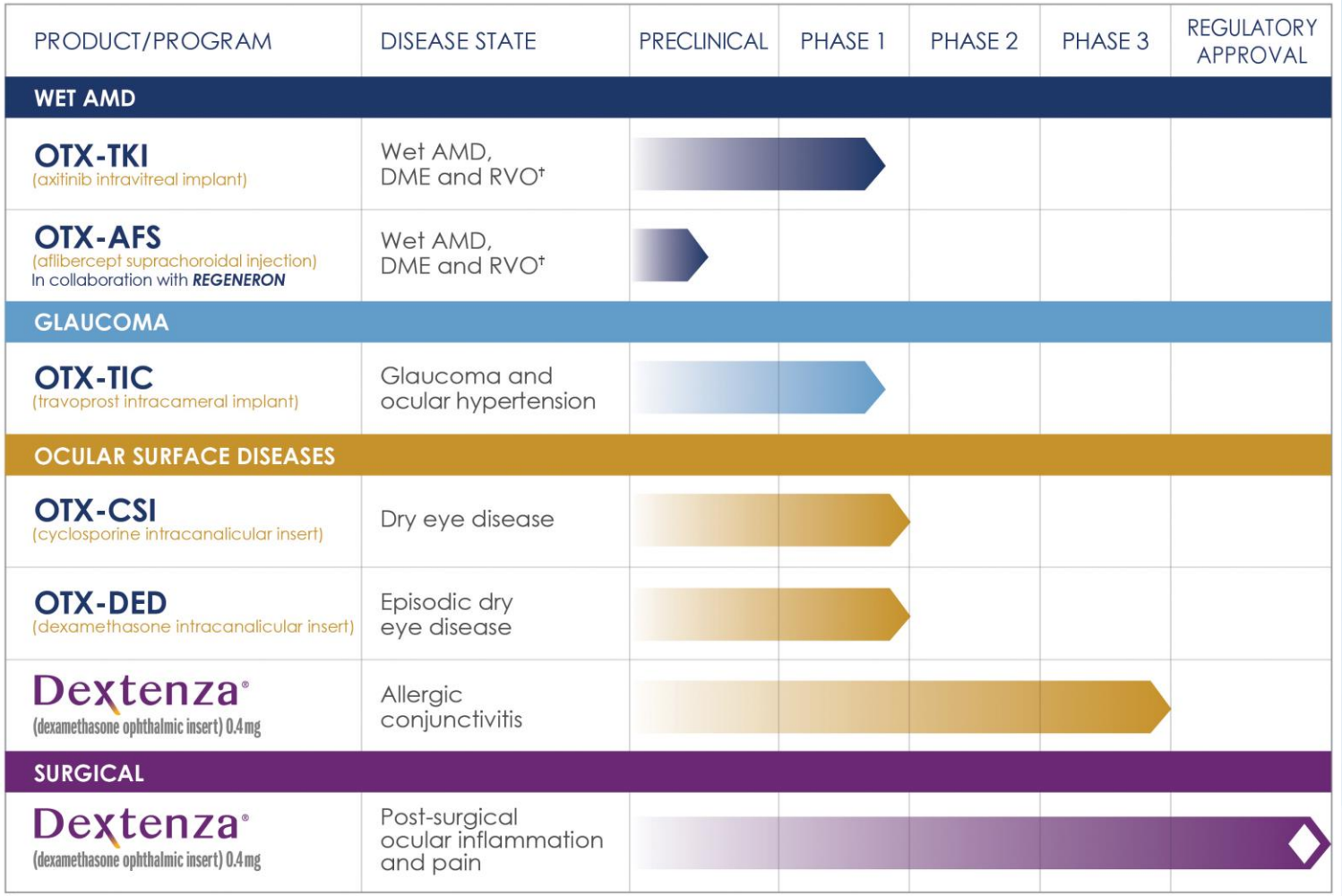
FORWARD LOOKING STATEMENTS

Any statements in this presentation about future expectations, plans, and prospects for the Company, including the commercialization of DEXTENZA®, ReSure® Sealant, or any of the Company's product candidates; the commercial launch of, and effectiveness of reimbursement codes for, DEXTENZA; the development and regulatory status of the Company's product candidates, such as the Company's development of and prospects for approvability of DEXTENZA for additional indications including allergic conjunctivitis, OTX-DED for the treatment of episodic dry eye disease, OTX-CSI for the treatment of dry eye disease, OTX-TIC for the treatment of primary open-angle glaucoma and ocular hypertension, OTX-TKI for the treatment of retinal diseases including wet AMD, and OTX-AFS as an extended-delivery formulation of the VEGF trap aflibercept for the treatment of retinal diseases including wet AMD; the ongoing development of the Company's extended-delivery hydrogel depot technology; the size of potential markets for our product candidates; the potential utility of any of the Company's product candidates; the potential benefits and future operation of the collaboration with Regeneron Pharmaceuticals, including any potential future payments thereunder; projected net product revenue and other financial metrics of DEXTENZA; the expected impact of the COVID-19 pandemic on the Company and its operations; the 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 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, ReSure Sealant or any product candidate that receives regulatory approval, including the conduct of post-approval studies, the ability to retain regulatory approval of DEXTENZA, ReSure Sealant or any product candidate that receives regulatory approval, the ability to maintain reimbursement codes for DEXTENZA, the initiation, timing and conduct of clinical 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, the Company's ability to generate its projected net product revenue on the timeline expected, if at all, the sufficiency of cash resources, the Company's existing indebtedness, the ability of the Company's creditors to accelerate the maturity of such indebtedness upon the occurrence of certain events of default, the outcome of the Company's ongoing legal proceedings, the severity and duration of the COVID-19 pandemic including its effect on the Company's and relevant regulatory authorities' operations, the need for additional financing or other actions 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 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.

TRANSFORMING DRUG DELIVERY WITH A NOVEL TECHNOLOGY PLATFORM



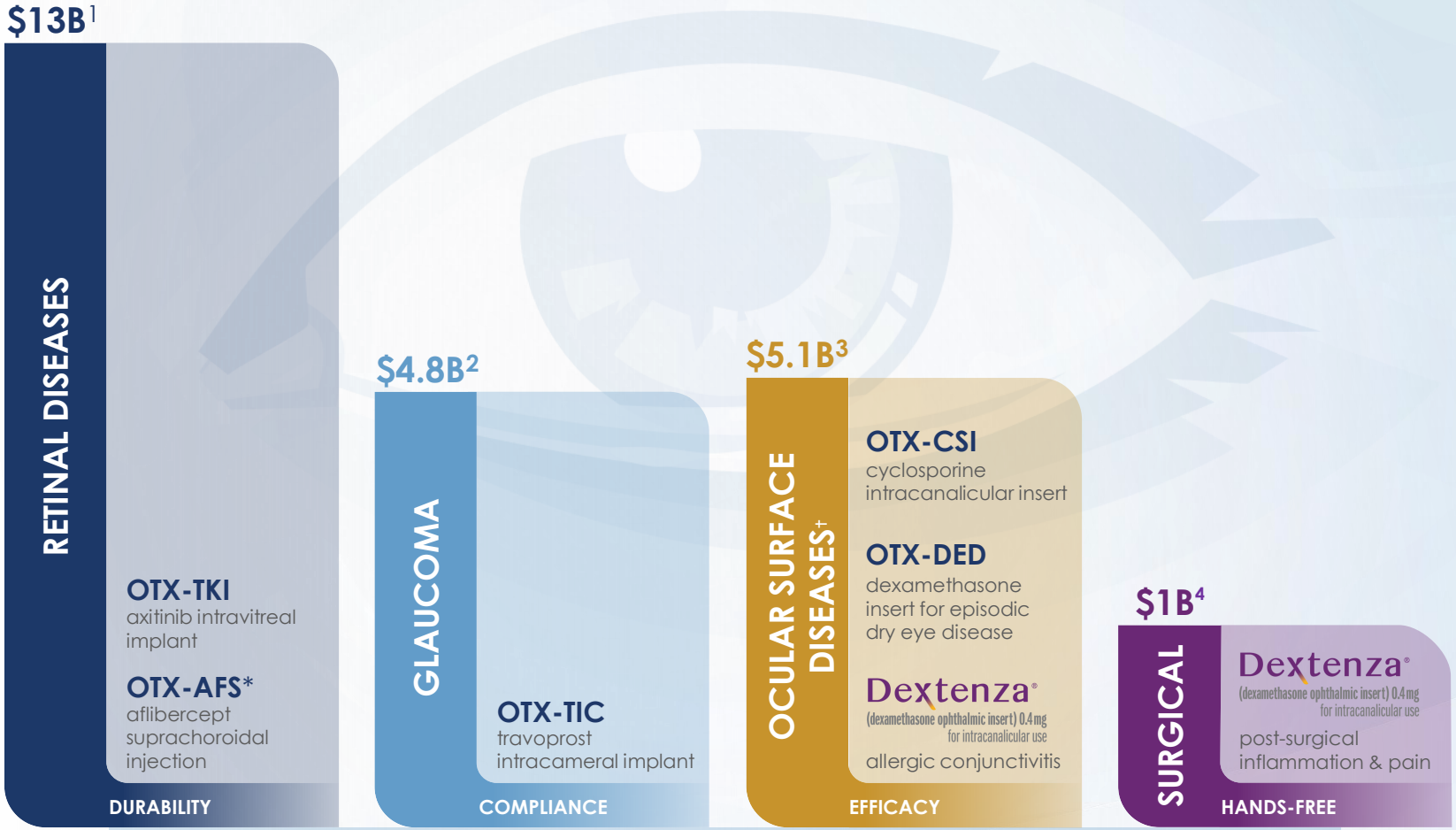
PIPELINE AT A GLANCE



† Wet Age-related Macular Degeneration (Wet AMD), Diabetic Macular Edema (DME), Retinal Vein Occlusion (RVO)

TOTAL GLOBAL MARKETS

DEVELOPING PRODUCTS WITH THE POTENTIAL TO BECOME A STANDARD OF CARE FOR SELECT INDICATIONS IN SEVERAL OF THE LARGEST SEGMENTS IN OPHTHALMOLOGY



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OTX-TKI (AXITINIB INTRAVITREAL IMPLANT)

SUSTAINED RELEASE THERAPY FOR RETINAL DISEASES

ISSUES WITH EXISTING TREATMENTS

- Require injections every 4-8 weeks[1,2]
- May cause endophthalmitis, hemorrhage, damage to the lens or retinal detachment due to repeated injections[3]
- Cause discomfort, eye pain, decreased vision, increased photosensitivity, and floaters with injections for patients[3]

KEY PRODUCT ATTRIBUTES

- Targeting sustained release for 4.5-6 months
- Broader anti-angiogenic profile (small molecule)
- Small fiber (27-30G needle) with minimal/no visual impact
- Preservative-free

ONGOING PHASE 1 CLINICAL TRIAL

- First (200µg) and second (400µg) cohorts fully enrolled
- Currently dosing third cohort (two arms: 600ug vs 400ug + anti-VEGF induction injection)
- To date, observed to have a generally favorable safety profile

1. EYLEA Full Prescribing information 2019 2. Lucentis full Prescribing Information 2019 3. Bochot A, Fattal E. Liposomes for intravitreal drug delivery: a state of the art. *J Control Release*. 2012;161(2):628-634.

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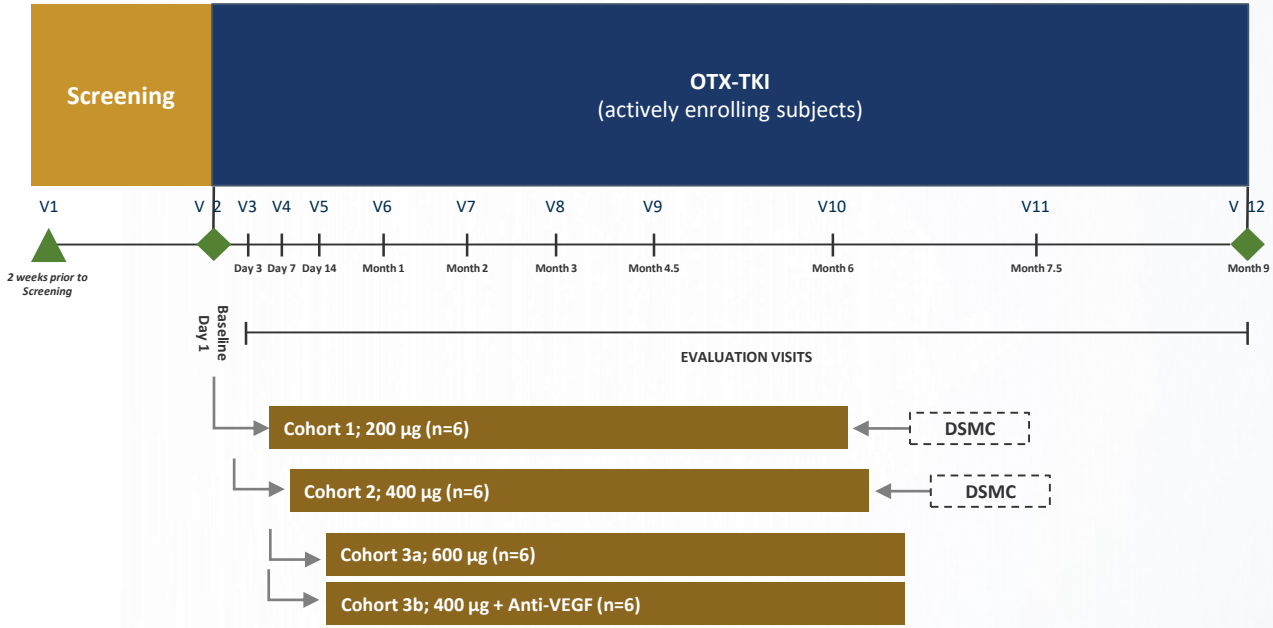
OTX-TKI PHASE 1 STUDY

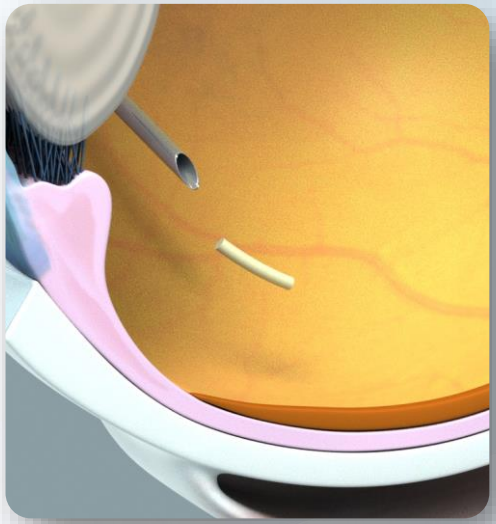
DESIGN

- Open-label, dose-escalation, feasibility study
- 5 sites in Australia
- One eye treated per patient
- Key Inclusion criteria:
  - Active primary subfoveal neovascularization (SFNV) secondary to AMD – previously treated or naïve subjects but with retinal fluid present

OBJECTIVES

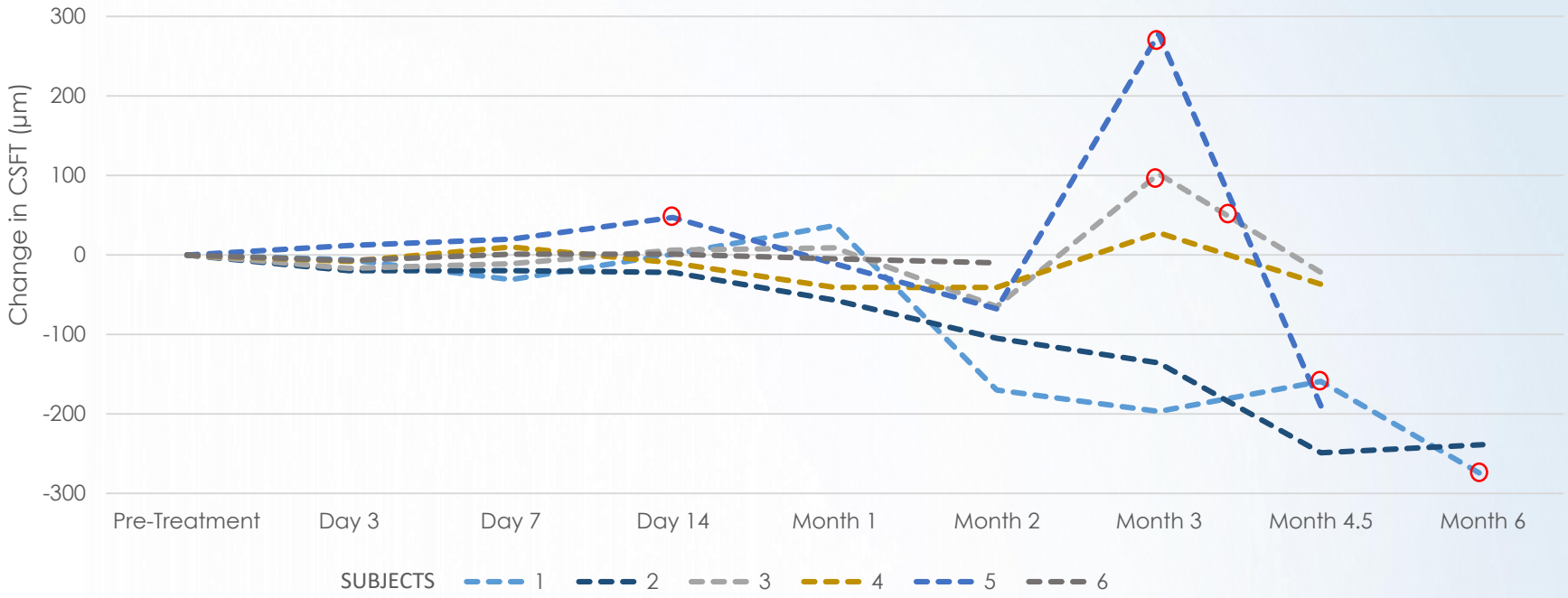
- Safety, tolerability, and biological activity
- Safety evaluations at all visits; mean change in central subfield thickness (CSFT) measured by SD-OCT, BCVA, and clinically-significant leakage on FA and/or OCT-A at 6 months





INDIVIDUAL CHANGE IN CENTRAL SUBFIELD THICKNESS

OTX-TKI STUDY EYE – COHORT 2



*All CSFT values compared to Baseline visit

○ Denotes administration of rescue therapy

NOTE: Values shown are Mean ± SEM;
Interim review, unmonitored data as of 07/01/2020

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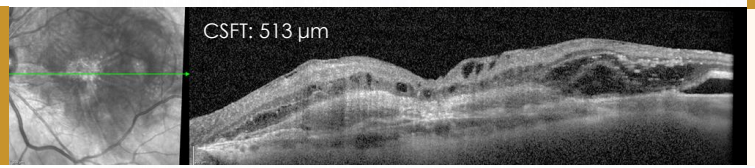
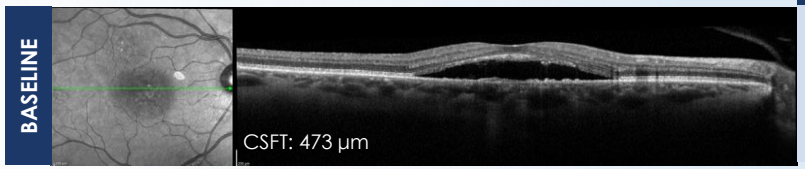
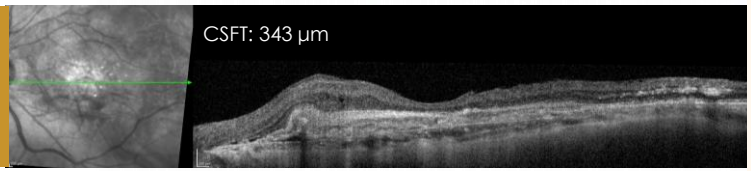
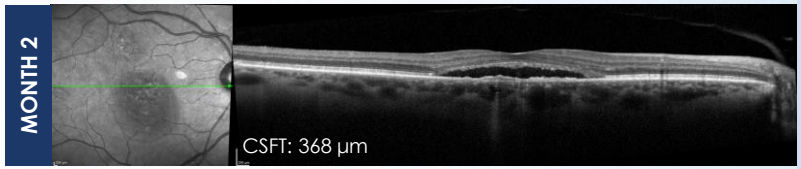
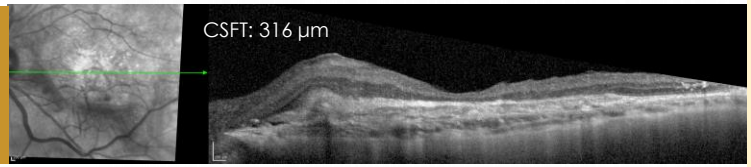
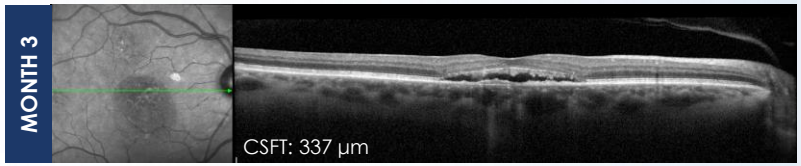
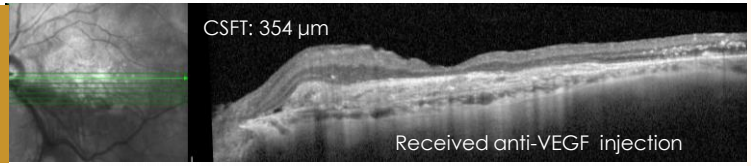
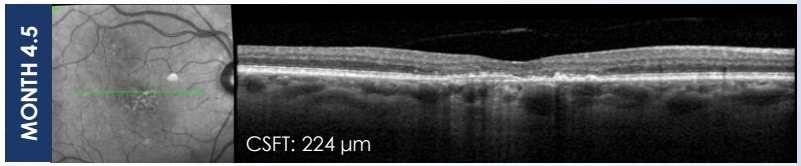
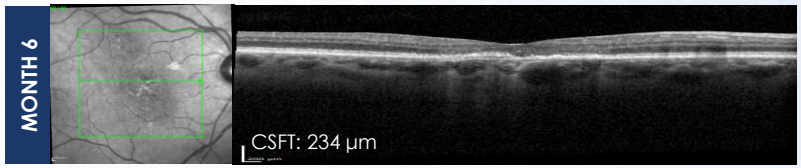
COHORT 2: SD-OCT EVALUATION

Subject 1: Treatment Naïve (OS)		BCVA	Subject 2: History of EYLEA Q4 Weeks (OD)		BCVA
BASELINE		1.40 @ 1m (20/502)	BASELINE		-0.04 (20/18)
MONTH 2		1.40 @ 1m (20/502)	MONTH 2		-0.06 (20/17)
MONTH 3		1.48 @ 1m (20/604)	MONTH 3		-0.06 (20/17)
MONTH 4.5		1.36 @ 1m (20/458)	MONTH 4.5		0.30 (20/40)
			MONTH 6		-0.08 (20/17)

Preliminary biological signal of clinically-meaningful decrease in retinal fluid:
Some subjects showed a decrease in intraretinal and/or subretinal fluid by 2 months

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OTX-TKI CONCLUSIONS TO DATE

- **OTX-TKI was generally well tolerated**
  To date, observed to have a generally favorable safety profile in both fully enrolled cohorts
- **Preliminary biological signal of clinically-meaningful decrease in retinal fluid**
  Some cohort 2 subjects showed a decrease in intraretinal and/or subretinal fluid by 2 months
- **Therapy durability suggests extended duration of action**
  In the 400µg dose cohort, subjects have demonstrated durability of therapy for 4.5-6 months. Patients are still being followed in cohort 2.
- **Consistent bio-resorption observed**
  Implant biodegraded in all subjects in cohort 1 by 9-10.5 months
- **Implant location observation suggests limited movement**
  Implant has been able to be adequately monitored

Study is ongoing

Continued long-term evaluation of both cohorts

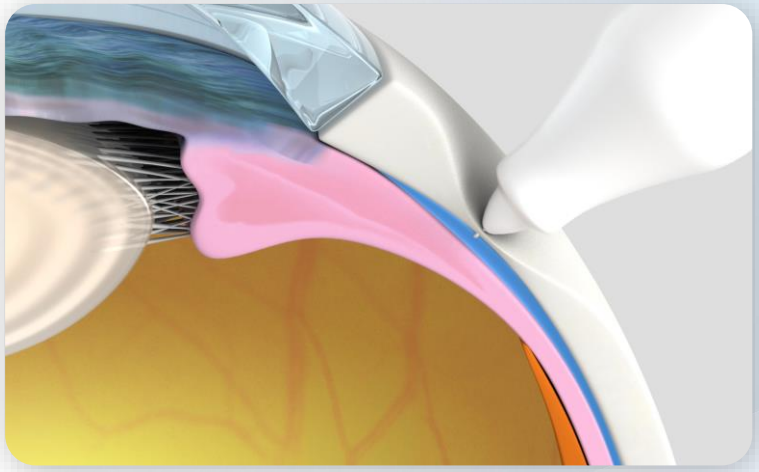
- Need to establish durability of treatment
- Identify Maximum Tolerated Dose (MTD)
- Understand utility of OTX-TKI with anti-VEGF injection

REGENERON PARTNERSHIP
OTX-AFS (AFLIBERCEPT SUPRACHOROIDAL INJECTION)*

REGENERON

AMENDED AGREEMENT TO DEVELOP A NOVEL, SUSTAINED-RELEASE FORMULATION OF EYLEA® (AFLIBERCEPT)

- **EYLEA is a vascular endothelial growth factor (VEGF) trap approved for the treatment of wet age-related macular degeneration (wet AMD) and other serious retinal diseases**
  - EYLEA is the global market leader with $7.5 billion in revenue in 2019[1]
- **Evaluating opportunity to incorporate aflibercept with our sustained release hydrogel for injection in the suprachoroidal space**
  - Goal is to overcome limitations of intravitreal injections and extend aflibercept's duration of activity, thereby decreasing dosing frequency
- **Deal parameters**
  - Regeneron subsidizes Ocular's formulation efforts
  - Regeneron to fund personnel and material costs associated with pre-clinical development
  - Regeneron to fund up to $305 million in milestone payments with royalties in high single digits to low-to-mid-teens as a % of net sales
  - Includes only large molecule anti-VEGFs



1. 2019 Regeneron annual report

*Formerly known as OTX-IVT

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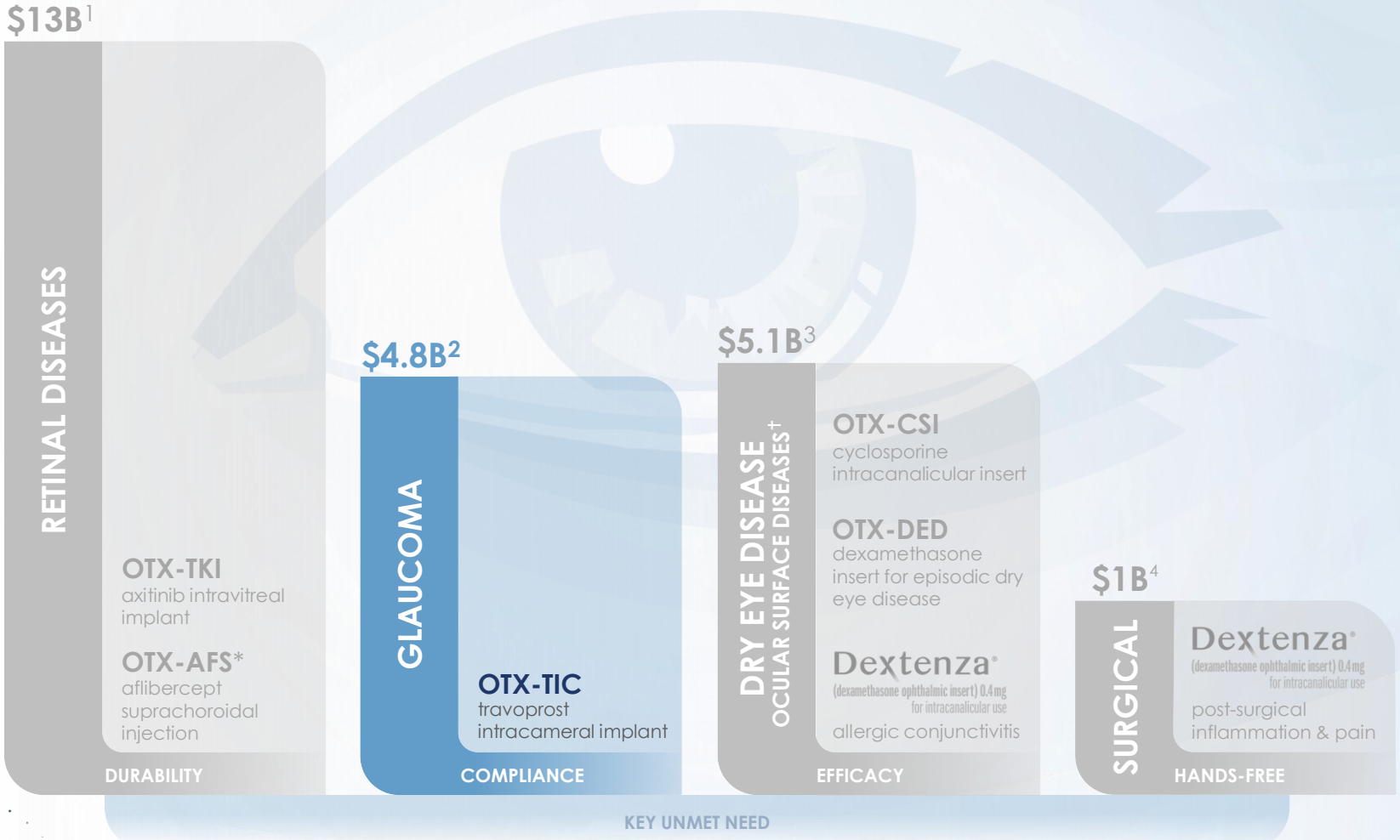

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OTX-TIC (TRAVOPROST INTRACAMERAL IMPLANT)

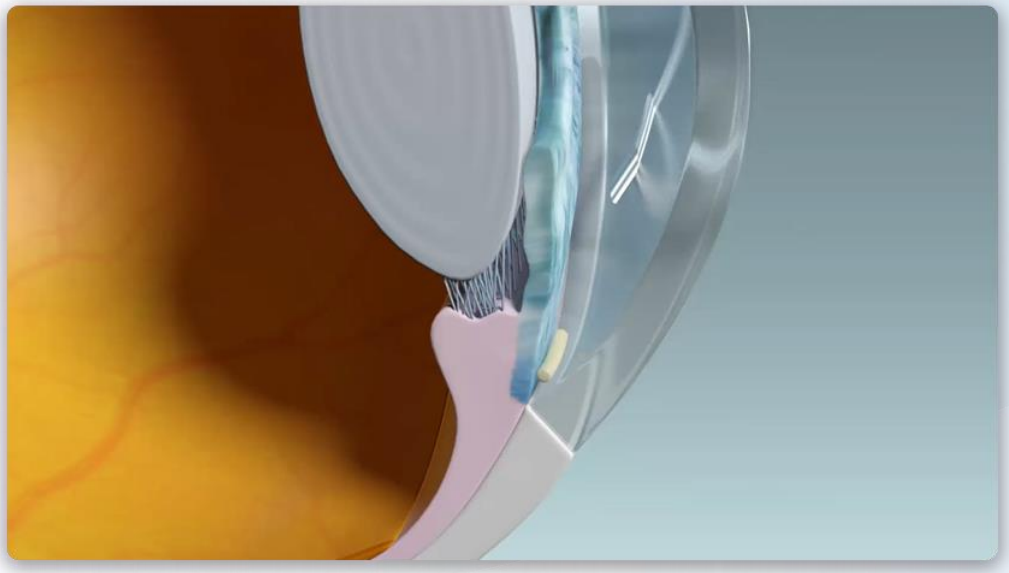
REMOVES THE ISSUE OF PATIENT NON-COMPLIANCE WITH EYE DROPS

ISSUES WITH EXISTING TREATMENTS

- High rates of non-adherence to glaucoma therapies
- Poor adherence has been shown to be associated with disease progression and blindness[1,2]
- Ocular hyperemia
- Life-long daily burden of patient administration

KEY PRODUCT ATTRIBUTES

- Travoprost loaded microparticles embedded in hydrogel
- Administered with 27G or 26G needle
- Resides in the iridocorneal angle
- Fully biodegradable
- Preservative-free



1. Rossi GC, et al. Do adherence rates and glaucomatous visual field progression correlate? Eur J Ophthalmol. 2011; 21:410–4. **2.** Sleath B, et al. The relationship between glaucoma medication adherence, eye drop technique, and visual field defect severity. Ophthalmology. 2011; 118:2398–402.

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OTX-TIC FOR THE TREATMENT OF GLAUCOMA

Phase 1 Study Design

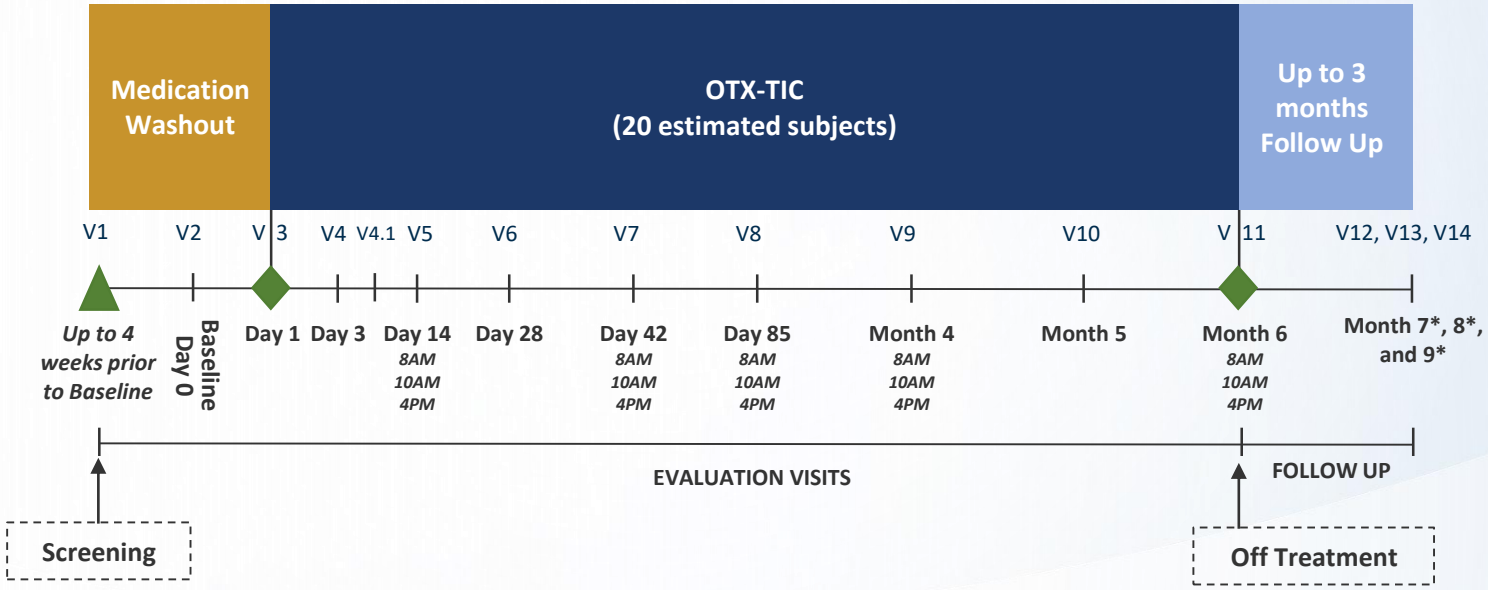
- Open-label, proof-of-concept study
- US study, approximately 20 subjects at 5 sites
- 5 subjects per cohort, 4 cohorts
- One eye per patient will be treated
- Key Inclusion criteria:
  - Controlled ocular HTN or POAG
  - Open, normal anterior chamber angles on gonioscopy

Objectives

- Safety, tolerability, and biological activity
- Diurnal IOP at Baseline, 2 weeks, 6 weeks, 12 weeks, Month 4, and Month 6 (8 AM, 10 AM, 4 PM)

Active Comparator:

- Non-study eye receives topical travoprost daily



- Monthly visits until IOP is within 10% of baseline or until clinically stable

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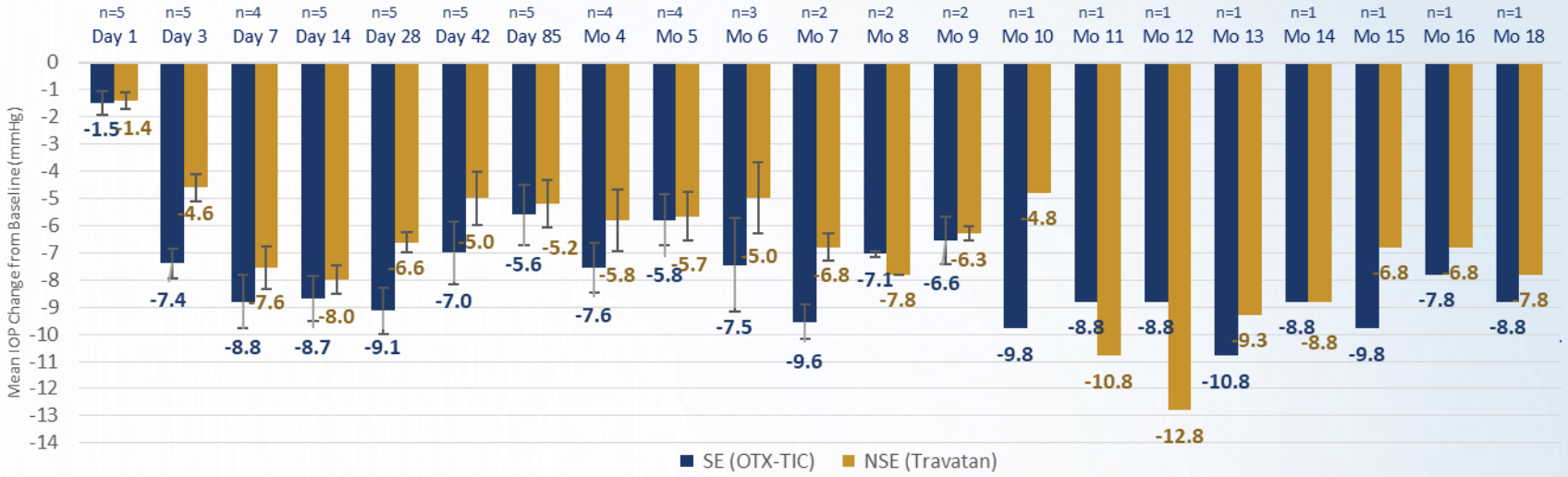
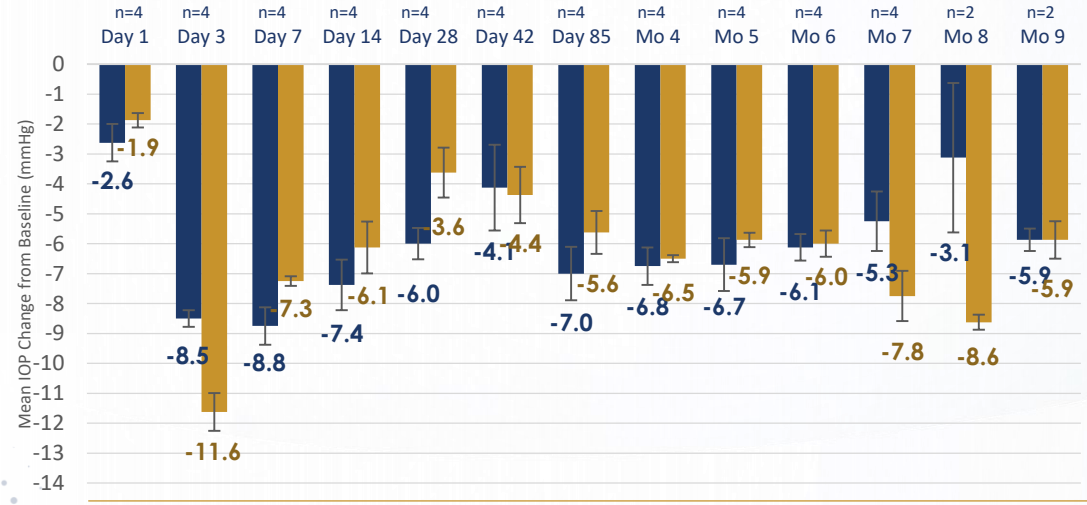
IOP DECREASE UP TO 7-10 MMHG RECORDED IN COHORTS 1 (UP TO 18 MONTHS) & 2 (UP TO 9 MONTHS)

DECREASED IOP AS EARLY AS TWO DAYS AFTER OTX-TIC IMPLANTATION

Cohort 1: 15µg



Cohort 2: 26µg



NB: Interim look; Unmonitored data *If the study eye was given other IOP lowering medication, the IOP value was removed from the analysis. Data as of April 2020.

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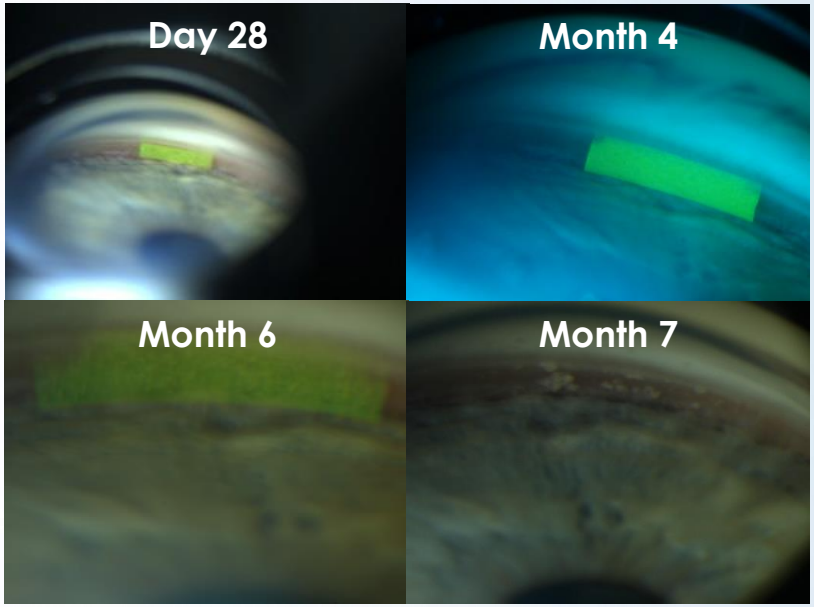
OTX-TIC PHASE 1 INTERIM FINDINGS

- **Clinically-meaningful decrease in IOP**
  Mean IOP values were decreased in patients receiving both OTX-TIC and topical travoprost as early as two days following administration, and mean IOP values remained decreased from baseline values
- **Extended duration of therapy**
  Many subjects exhibited duration of IOP lowering effect of 6 months or longer
- **Consistently bioresorbable**
  In most subjects by 5-7 months
- **Implant location and limited movement**
  Implant was not observed to move at slit lamp and was visible at all exams in all patients; in one subject, there was slight rotation noted at the Day 14 visit as compared to the Day 7 visit
- **Corneal health**
  Endothelial cell counts and pachymetry assessments indicate no clinically meaningful changes from baseline

VISUALIZATION OF IMPLANT



Plan to initiate Phase 2 clinical trial in first half of 2021

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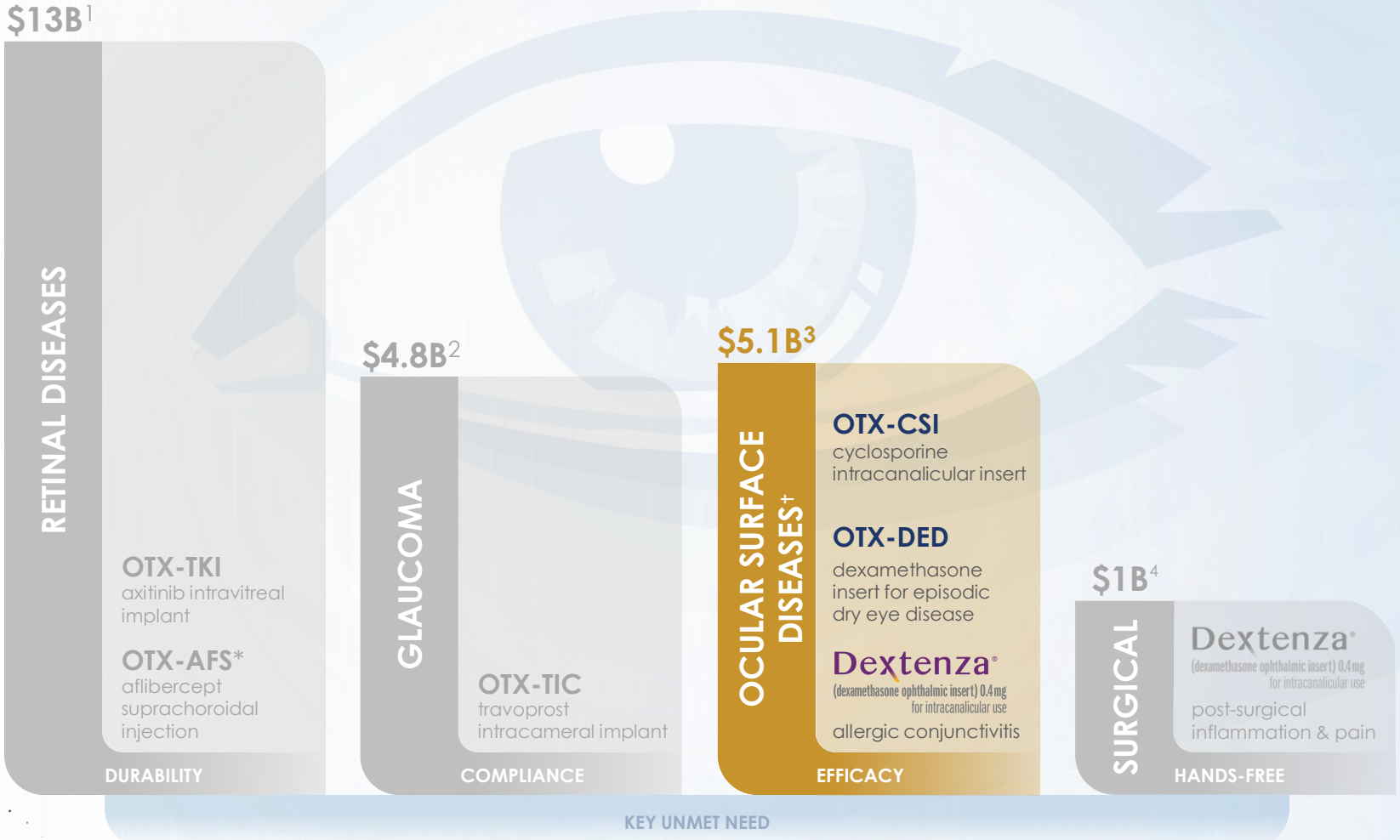

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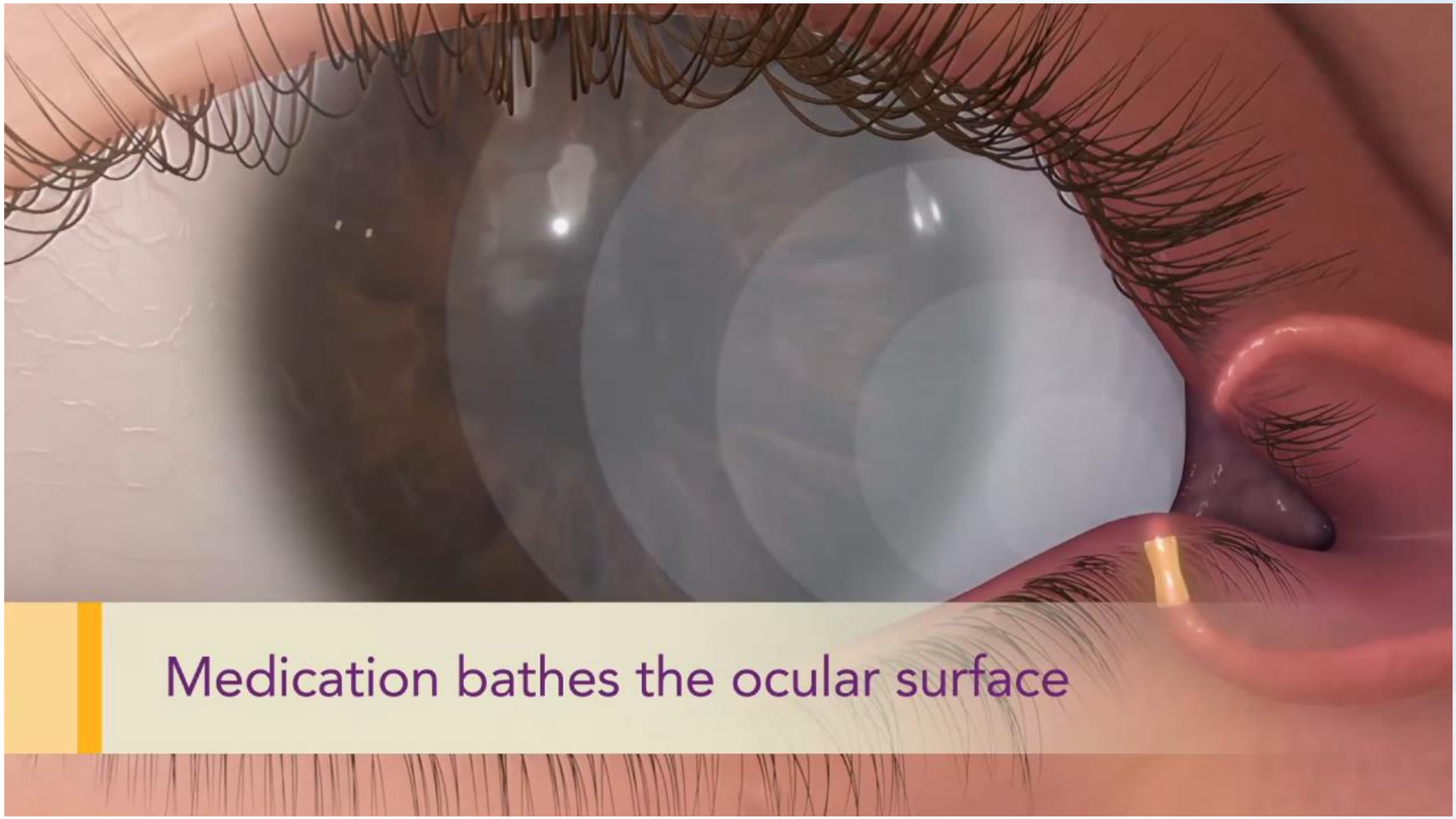
INTRACANALICULAR INSERTS

AN INNOVATION IN DRUG DELIVERY TO THE OCULAR SURFACE



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OTX-CSI (CYCLOSPORINE INTRACANALICULAR INSERT)

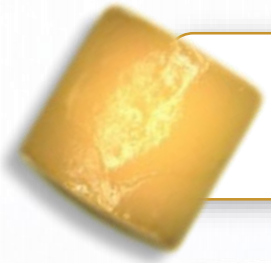
SUSTAINED RELEASE THERAPY FOR DRY EYE DISEASE

ISSUES WITH EXISTING TREATMENTS

- Slow onset of action for therapy
- High level of burning, stinging and irritation upon administration
- Burden of patient administration

KEY PRODUCT ATTRIBUTES

- Cyclosporine loaded in hydrogel
- Preservative-free
- Designed to deliver effective therapy up to 12 weeks with a single insert
- Occludes the punctum
- Fully biodegradable insert



PLAN TO INITIATE PHASE 2 CLINICAL TRIAL IN 2020

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OTX-DED (DEXAMETHASONE INTRACANALICULAR INSERT)

OFF-LABEL STEROIDS ARE CURRENTLY USED TO TREAT EPISODIC DRY EYE

ISSUES WITH EXISTING TREATMENTS

- Approved therapies for DED are known for slow onset of action and burning/stinging upon application
- Topical steroids (which are not FDA approved for DED) can be abused and contain preservatives causing ocular toxicity

KEY PRODUCT ATTRIBUTES

- Dexamethasone loaded in hydrogel
- Preservative-free
- Occludes the canaliculus providing more rapid onset of action
- Fully biodegradable insert
- Leverages strong safety profile of DEXTENZA®

Plan to submit Phase 2–enabling IND in 2020

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DEXTENZA FOR THE TREATMENT OF ALLERGIC CONJUNCTIVITIS

AN IN-OFFICE INDICATION FOR DEXTENZA

Dextenza®
(dexamethasone ophthalmic insert) 0.4 mg
for intracanalicular use

ISSUES WITH EXISTING TREATMENTS

- Corticosteroids are effective in treating both signs and symptoms of acute and chronic allergy
- Corticosteroids are not often prescribed due to the ability to abuse and/or overuse the treatment
- Treatment requires frequent administration of eyedrops, and hands touching the face several times per day

KEY PRODUCT ATTRIBUTES

- A non-abusable formulation
- Preservative-free
- Leverages strong safety profile for DEXTENZA in the treatment inflammation and pain following ophthalmic surgery

Plan to file sNDA in Q4 to add the treatment of ocular itching associated with allergic conjunctivitis as an additional indication for DEXTENZA

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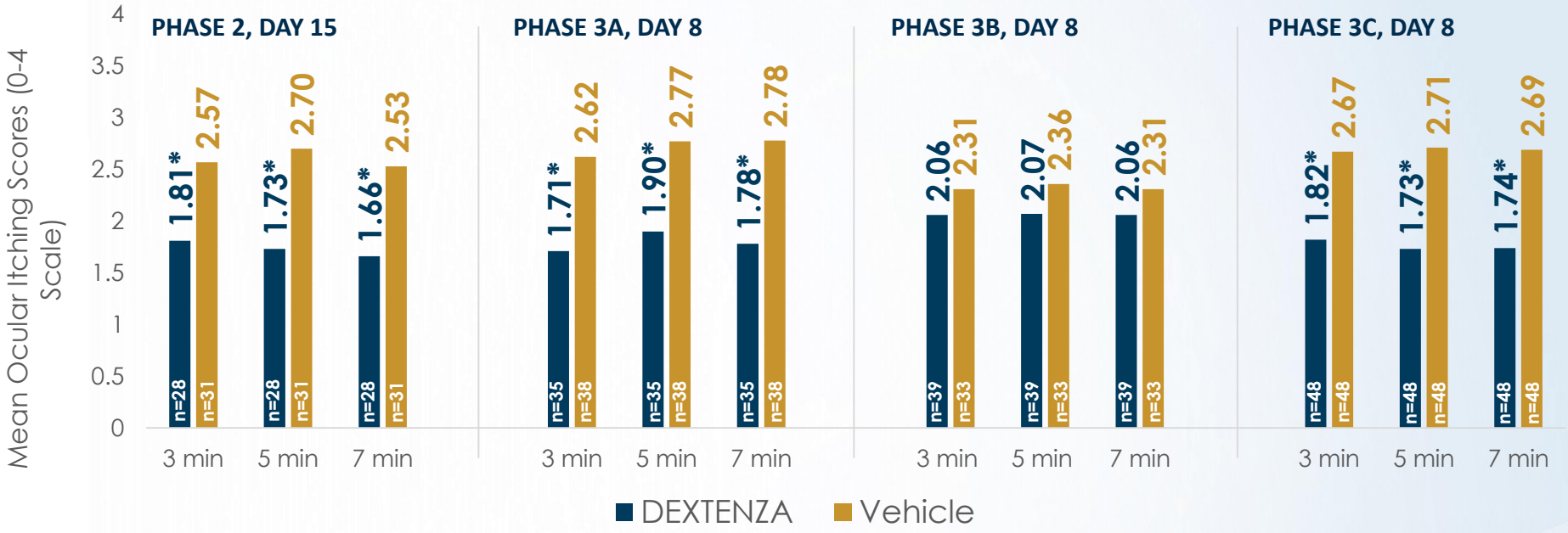
RESULTS: PRIMARY EFFICACY ENDPOINT
MEAN OCULAR ITCHING SCORES ACROSS ALL STUDIES



*Statistically Significant; *P*≤0.0025; Population: ITT + LOCF (Phase 2) & ITT + MCMC (Phase 3 Subject level imputation)

McLaurin E, et al. Evaluating the Safety and Efficacy of DEXTENZA, a Dexamethasone Insert (0.4 mg) for the Treatment of Ocular Itching. Presented at the American Society of Cataract and Refractive Surgery Annual Meeting; San Diego, CA, May 3-7, 2019.

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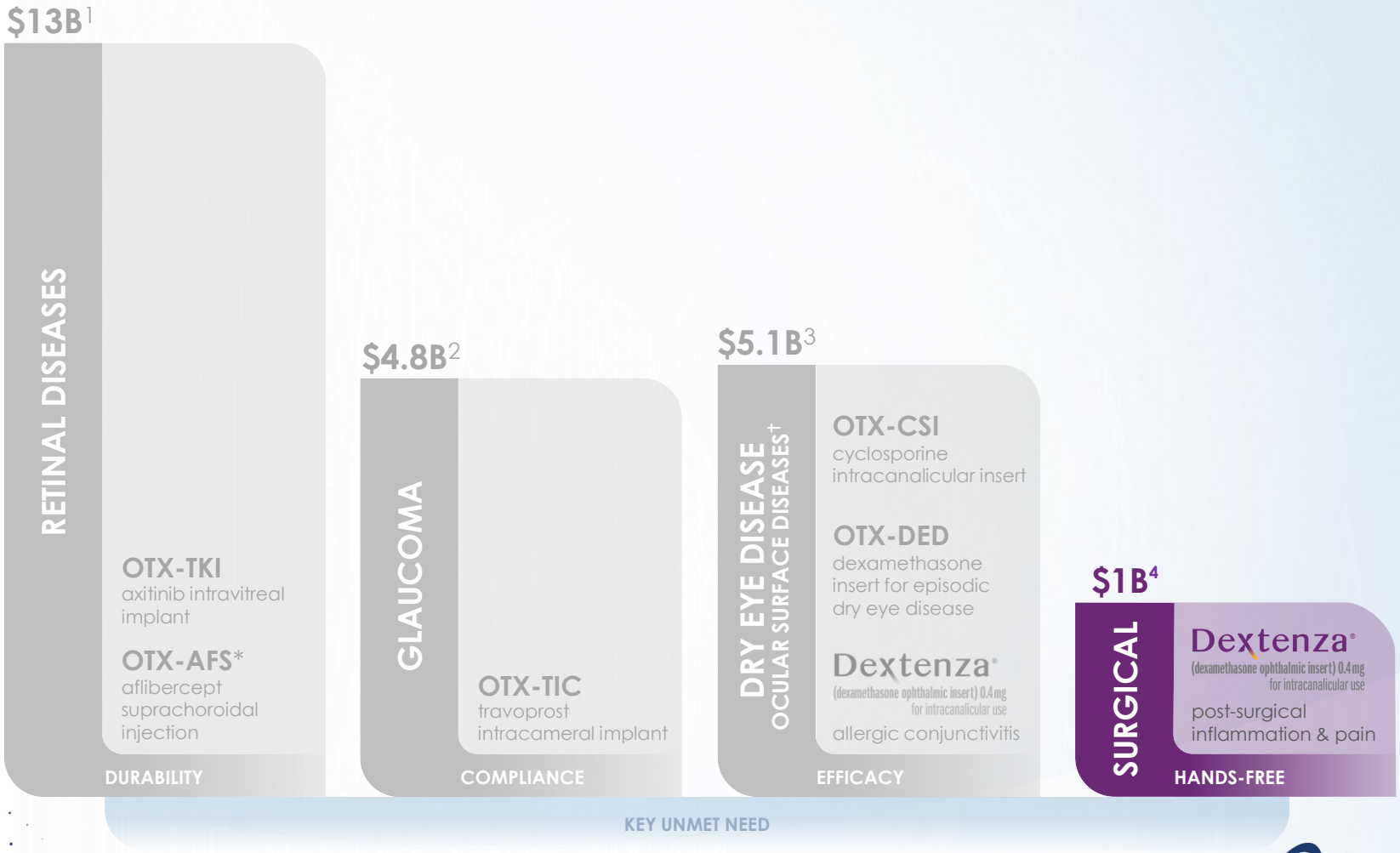
GLOBAL MARKET VALUES

DEVELOPING PRODUCTS WITH THE POTENTIAL TO BECOME A STANDARD OF CARE FOR SELECT INDICATIONS IN SEVERAL OF THE LARGEST SEGMENTS IN OPHTHALMOLOGY



These data reflect the total global market for the respective indications. Our market opportunity for such indications reflects a portion of this market.

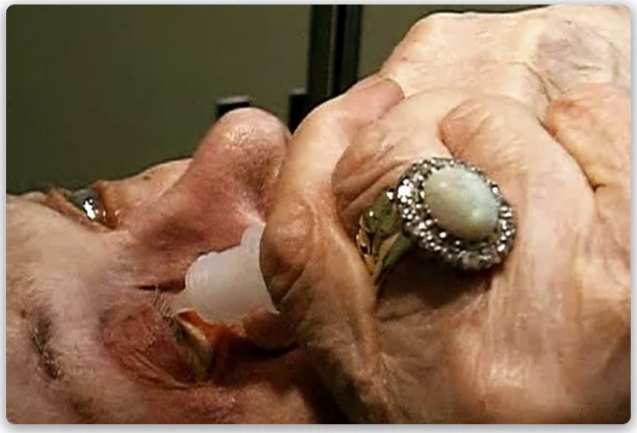
* In collaboration with REGENERON; †Data shown here is only representative of Dry Eye and not other Ocular Surface Diseases

1. 2019 Retina Pharma Market Scope Report 2. 2019 Glaucoma Pharma Market Scope Report 3. 2019 Dry Eye Market Scope Report 4. Estimated using historical costs of topical eyedrops (not DEXTENZA) and the total addressable market based on the total US ocular surgical steroid market value 2019

Ocular Therapeutix™

THE UNMET NEED IN TREATMENT OF PAIN AND INFLAMMATION FOLLOWING SURGERY

EYE DROPS HAVE POOR CORNEAL RESIDENCE TIME[3,4]



LESS THAN **5%** OF DROPS REACH OCULAR TISSUE

STEROID DROPS ARE THE MOST COMPLEX POST-OP CATARACT TREATMENT REGIMEN

Common clinical approach: 4 weeks with taper[1]

	SUN	MON	TUES	WED	THURS	FRI	SAT	TAPER
Week 1								~ 28 drops
Week 2								~ 21 drops
Week 3								~ 14 drops
Week 4								~ 7 drops

~70 DROPS[2]

Ocular rebound inflammation may develop secondary to rapid tapering or abrupt discontinuation of steroids[3]

1. Kessel L et al. *Ophthalmology*. 2014;121(10):1915-24. 2. Data on file 00663. Ocular Therapeutix Inc. 3. Renfro L, Snow JS. *Dermatol Clin*. 1992;10(3):505-512 3. Kushwaha SK et al. *Int J Pharm Investig*. 2012;2(2):54-60. 4. Gaudana,R, et al. AAPS Journal. 2010;12 (3):348-360.

Ocular Therapeutix™

DEXTENZA® (DEXAMETHASONE OPHTHALMIC INSERT)

A HANDS-FREE ALTERNATIVE TO EYE DROPS

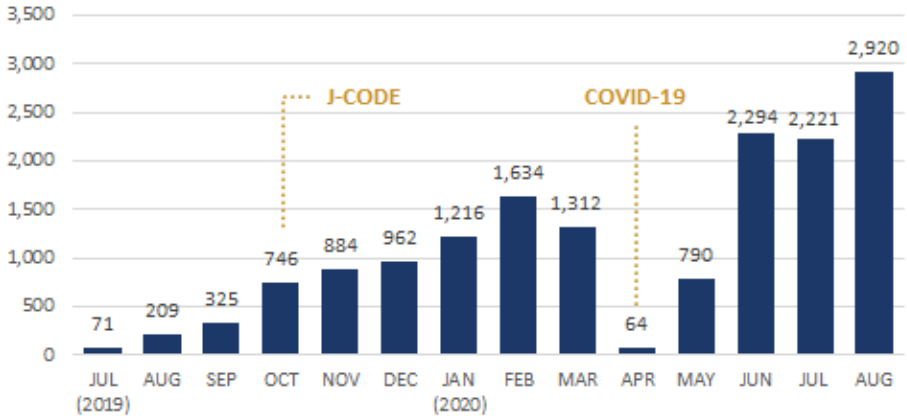
FDA approved for the treatment of ocular inflammation and pain following ophthalmic surgery.

REIMBURSEMENT AND CODING

- Product J-code 1096
- Procedure CPT code 0356T (Category 1 application filed)
- Medicare Administrative Contractor coverage growing
- Physician reimbursement for 0356T of ~$100 per insertion

Provides a tapered delivery of preservative-free steroid onto the ocular surface for 30 days

Billable Inserts to ASCs/HOPDs Since Launch



Dextenza®
(dexamethasone ophthalmic insert) 0.4 mg
for intracanalicular use

1. DEXTENZA [package insert]. Bedford, MA: Ocular Therapeutix Inc; 2019.
2. Data on file 00663. Ocular Therapeutix Inc.

Ocular Therapeutix™

RECENT AND ANTICIPATED NEAR-TERM MILESTONES

OTX-TKI (wet AMD) – Plan to provide Phase 1 clinical update at AAO (Nov 2020) and file for US exploratory IND in 2020

OTX-TIC (glaucoma) – Plan to initiate Phase 2 clinical trial in first half of 2021

OTX-CSI (dry eye) – Plan to initiate Phase 2 clinical trial in 2020

OTX-DED (episodic dye eye) – Plan to submit Phase 2 enabling IND in 2020

DEXTENZA® (inflammation and pain) – Drive towards more than 5,000 billable inserts per month by year end

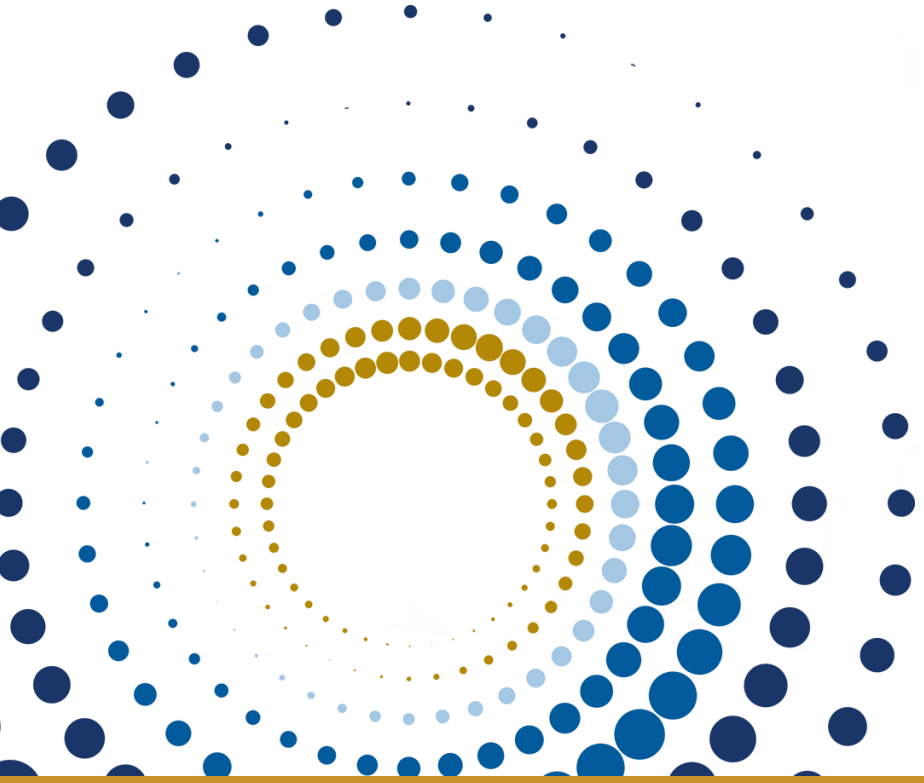
DEXTENZA® (allergic conjunctivitis) – Plan to file sNDA in 2020

Ocular Therapeutix™

(NASDAQ: OCUL)

TRANSFORMING DRUG DELIVERY

LEVERAGING A NOVEL TECHNOLOGY PLATFORM



THANK YOU

Ocular Therapeutix™