



November 2019

CORPORATE REVIEW

Innovating Transformative Therapies

Nasdaq: ALDX
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Our Mission

Developing Next-Generation Medicines to Improve the Lives of Patients with Immune-Mediated Diseases



~7%

Of Western Society

Suffer from some form of **immune-mediated disease**, and **incidence is increasing**



Unmet
Needs

Disease control elusive despite existing therapies, and thus **novel approaches are needed**

Source: Lerner, Jeremias, and Matthias, International Journal of Celiac Disease, vol. 3, no. 4 (2015): 151-155;

Shurin and Smolkin, Advances in Experimental Medicines and Biology 601:3-12, 2007; Kuek et al, Postgraduate Medical Journal 83(978): 251-260, 2007.

Deep and Innovative Pipeline Focused on Immune-Mediated Diseases

Disease Area	Compound	[Mechanism]	Indication	Preclinical	Phase 1	Phase 2	Phase 3	Next Anticipated Milestone
Ocular Diseases	Reproxalap	[RASP]	Dry Eye Disease					Phase 3-Part 1 completion Q4 2019
			Allergic Conjunctivitis					Phase 3 initiation H1 2020
	ADX-2191	[DHFR]	Proliferative Vitreoretinopathy					Phase 3-Part 1 initiation Q4 2019
	ADX-103/10X	[RASP]	Retinal Disease					Phase 1/2 initiation 2020
	Undisclosed		Ocular Inflammation	Research Collaboration (undisclosed)				
Systemic Diseases	Reproxalap	[RASP]	Sjögren-Larsson Syndrome					Parallel Regulatory Advice
	ADX-1612	[CHP]	PTLD					Phase 2 initiation H2 2019
			Mesothelioma	Investigator-Sponsored Trial				
			Ovarian Cancer	Investigator-Sponsored Trial				
	ADX-629	[RASP]	Autoimmune / Metabolic Disease					
	ADX-1615	[CHP]	Autoimmune Disease / Cancer					
	Undisclosed	[RASP]	Systemic Inflammatory Disease	Research Collaboration				

Our Lead Programs May Offer Potential Benefits Over Standard of Care

Late Stage Programs	Current Standard of Care	Pricing Benchmarks [†]	Drug Candidate and Dev. Stage	Potential Competitive Advantages [†]
<i>Ocular Diseases</i>				
Dry Eye Disease	Xiidra®, Restasis®	\$500-550 per month (dry eye disease pricing)	Reproxalap: Phase 3	Rapid onset, broad activity, reduction in itch
Allergic Conjunctivitis	Antihistamines		Reproxalap: Phase 3	Non-drying, durable activity; Responder superiority vs. vehicle
Proliferative Vitreoretinopathy	None (repeat surgeries)	\$30,000 per course (avg. cost of surgeries)	ADX-2191: Phase 3	Clinically demonstrated activity; Currently no FDA- or EMA-approved therapy
<i>Systemic Diseases</i>				
Sjögren-Larsson Syndrome	None (manage symptoms)	\$200,000 - \$400,000 per year	Reproxalap: Phase 3	Clinically demonstrated activity; Currently no FDA- or EMA-approved therapy

[†]Pending clinical data, regulatory discussions, payor negotiations, competition, potential legislative changes, and other factors, which may not be in Aldeyra's control.

Preliminary assumptions are subject to change.

Source: Aldeyra internal estimates based on primary and secondary market research; published literature

Our Lead Programs Represent Compelling Commercial Opportunities

Late Stage Programs

Ocular Diseases

Dry Eye Disease

Estimated
U.S. Population[†]

34 million DED
Up to 10 million with
DED & AC

30 million AC
(addressable market)

U.S. Healthcare
Providers

~18,000
ophthalmologists
and ~40,000
optometrists

Competitive
Value Proposition

Potential benefits over
current therapies, which
do not work well
for many patients

Infrastructure
Requirement[‡]

Medium sized
sales force for national reach

Allergic Conjunctivitis

Proliferative Vitreoretinopathy

4,000

Retina specialists
at targeted centers

Potential first and only
Rx treatment

Small specialized operation

Systemic Diseases

Sjögren-Larsson Syndrome

1,000

Geneticists and ped.
neurologists

Potential first and only
Rx treatment

Small specialized operation



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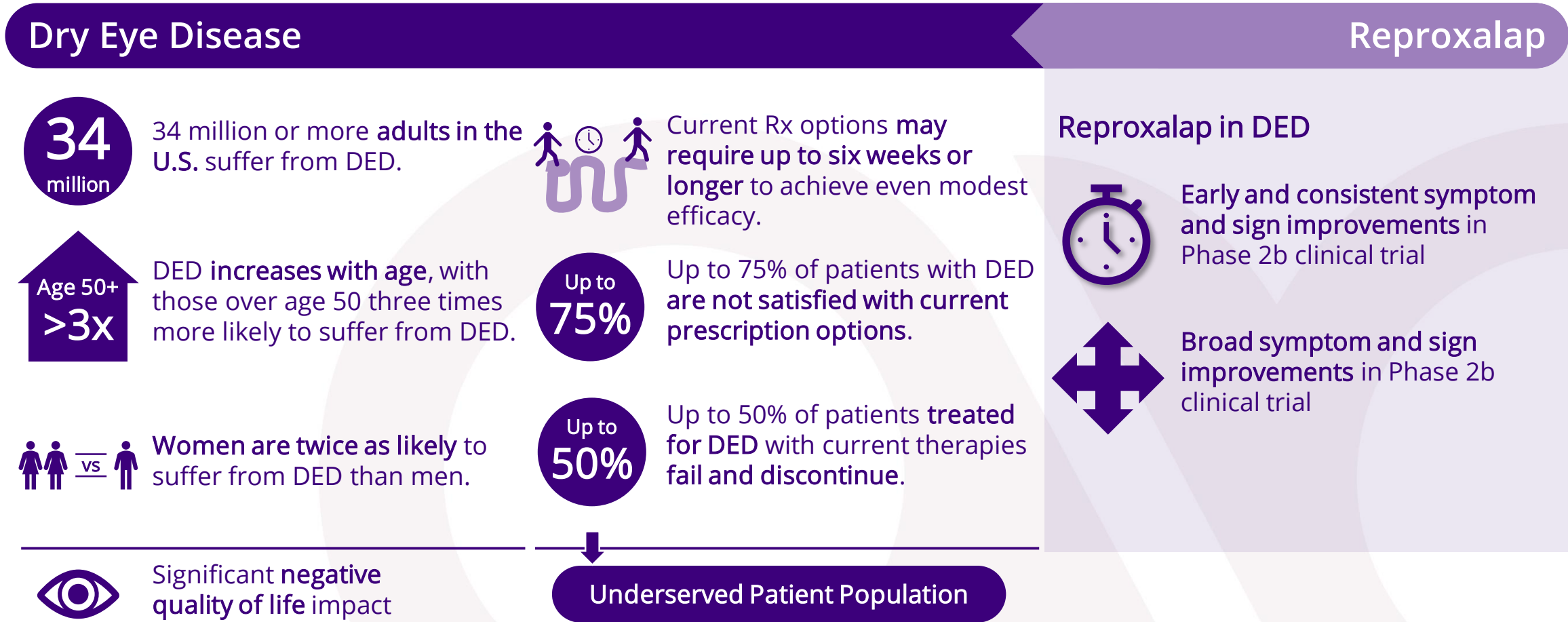
CORPORATE REVIEW

Ocular Disease Area

- **DRY EYE DISEASE**
- ALLERGIC CONJUNCTIVITIS
- PROLIFERATIVE VITREORETINOPATHY

Reproxalap Represents a New Approach For Dry Eye Disease

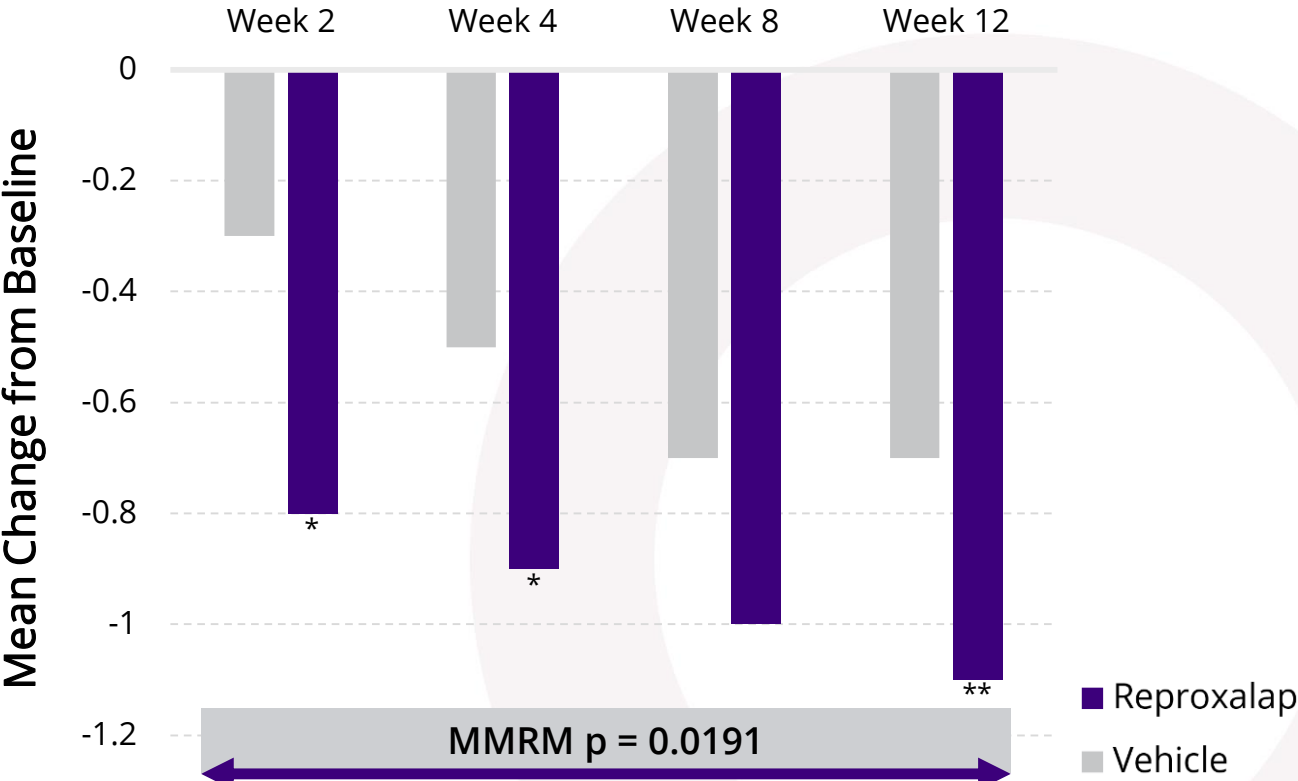
– A Persistently Disturbing And Inadequately Treated Condition



Phase 3 Dry Eye Disease Symptom and Sign Endpoints Achieved in Phase 2b Clinical Trial†

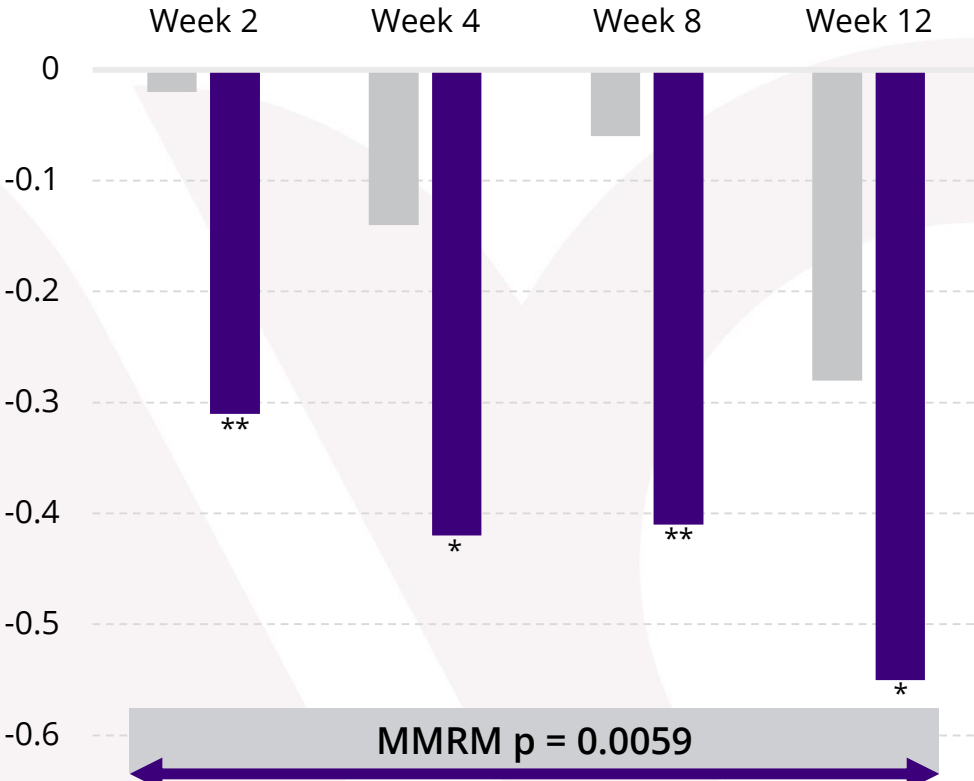
Primary Symptom Endpoint for Phase 3‡

OD & 4-Symptom Questionnaire: Dryness (0-5)
Baseline Score ≥ 3 (N=69 | 69)



Primary Sign Endpoint for Phase 3‡

Fluorescein Staining: Nasal (0-4)
Baseline Score ≥ 2 (N=62 | 56)



Topical ocular reproxalap has been studied in over 1,000 patients thus far with no observed safety concerns; mild instillation site irritation is the most commonly reported adverse event in clinical trials.
† The safety and efficacy results of later phase or subsequent clinical trials may not confirm the results of earlier trials.
‡ RENEW Phase 3 symptom co-endpoints are ocular dryness score VAS (0-100mm) and fluorescein nasal region staining.
Source: Reproxalap 0.25% DED Phase 2b clinical trial results; p values shown represent reproxalap effect vs vehicle.

*p<0.05 **p<0.01
OD = Ocular Discomfort
MMRM = Mixed Effect Model Repeated Measures (across 12 weeks)

Broad Drug Activity Across All Measured Dry Eye Disease Symptoms and Signs in Phase 2b Clinical Trial Supports Differentiated Product Profile

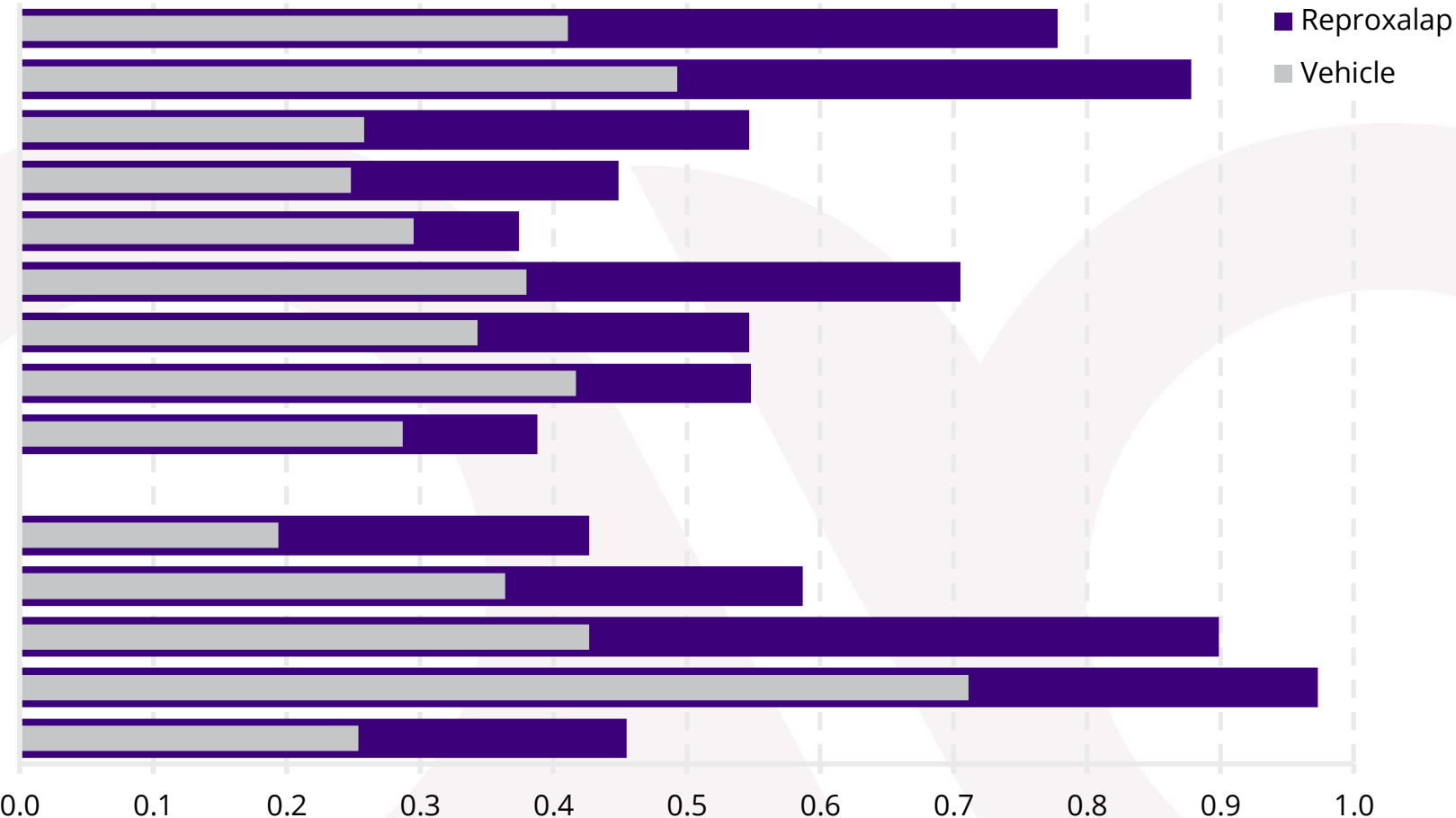
Improvement Effect Size at Week 12

Dry Eye Disease Symptoms

- 4-Symptom: Ocular Discomfort
- 4-Symptom: Dryness
- 4-Symptom: Grittiness
- 4-Symptom: Stinging
- 4-Symptom: Burning
- SANDE: Severity
- SANDE: Frequency
- Ocular Discomfort Scale
- Ocular Surface Disease Index

Dry Eye Disease Signs

- Fluorescein Stain (Nasal)
- Lissamine Green Stain (Nasal)
- Schirmer's Test
- Tear Film Break-Up Time
- Osmolarity



Average improvement effect size across both eyes for Schirmer's Test, Tear Film Break-Up Time, and Osmolarity
Topical ocular reproxalap has been studied in over 1,000 patients thus far with no observed safety concerns;
mild instillation site irritation is the most commonly reported adverse event in clinical trials.

SANDE = Symptom Assessment in Dry Eye
Improvement Effect size = Change from Baseline / Standard Deviation at Baseline
Source: Reproxalap 0.25% DED Phase 2b clinical trial results

Adaptive Phase 3 Dry Eye Disease Clinical Program

Adaptive Phase 3 Program

- ✓ Confirm symptom and sign endpoints from Phase 2b trial
- ✓ Confirm dosing regimen (QID vs. QID to BID taper)
- ✓ Confirm sample size for subsequent trial

Dry Eye Disease Clinical Program to NDA Submission

Initiated April 2019

RENEW
Phase 3 (Part 1)

RENEW
Phase 3 (Part 2)

Confirmatory DED
Phase 3

NDA*

Initiated April 2019

Formulation Trial

DED Safety Study

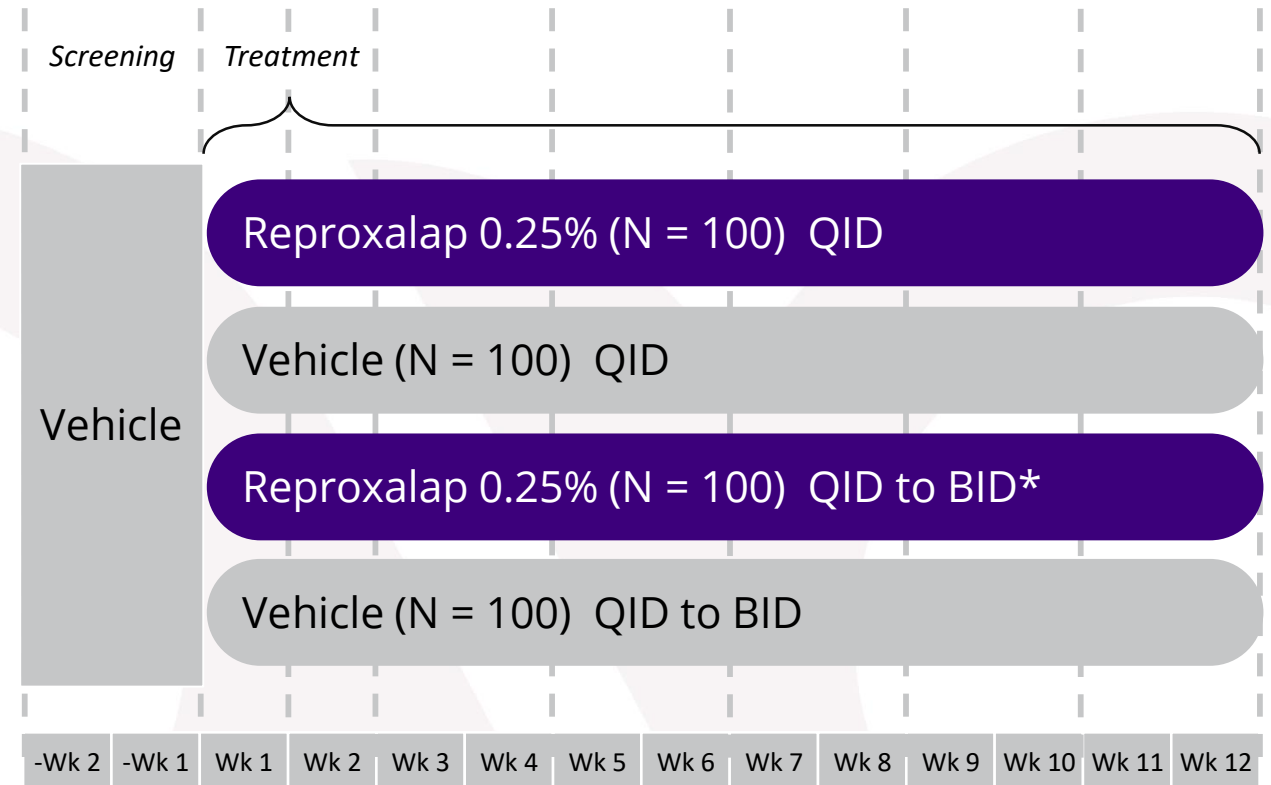
Adaptive design, co-primary endpoints, and innovative analysis strategy confirmed with FDA at EOP2 Meeting

The RENEW Phase 3 Clinical Trial in Dry Eye Disease

Part 1 Initiated April 2019

- **RENEW-Part 1 primary objective:**
 - Evaluate efficacy of reproxalap ophthalmic solution (0.25%) vs. vehicle to confirm dosing regimen and sample size for RENEW-Part 2
- **RENEW-Part 1 inclusion/exclusion criteria:**
 - Same as used for Phase 2b
 - Moderate to severe dry eye disease
- **RENEW co-primary endpoints:**
 - Ocular dryness score (0-100mm VAS) and fluorescein nasal region staining
- **RENEW analysis strategy:**
 - Both co-primary endpoints will be assessed using Mixed Model Repeated Measures (MMRM) from week 2 to 12
 - Both co-primary endpoints will be assessed in separate pre-specified patient populations
 - Ocular dryness score (OD4SS): baseline score of ≥ 3
 - Fluorescein nasal staining: baseline score ≥ 2

Phase 3 Dry Eye Disease Clinical Trial: Part 1





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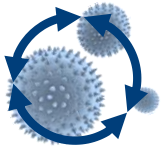
CORPORATE REVIEW

Ocular Disease Area

- DRY EYE DISEASE
- **ALLERGIC CONJUNCTIVITIS**
- PROLIFERATIVE VITREORETINOPATHY

Reproxalap Represents a New Approach of Allergic Conjunctivitis – A Burdensome and Growing Disease with Unmet Medical Need

Allergic Conjunctivitis



Allergy seasons are getting **longer and more severe** with pollen spreading to new areas.



AC prescription volume is growing **>4x** faster than the U.S. population*.



Up to 30 million of AC sufferers in the U.S. **do not respond** adequately to or are dissatisfied with antihistamines.



Many AC patients make **significant sacrifices** due to lack of drug activity.



Antihistamines are not **effective** in an estimated 24% of treated AC patients.



Nearly 1 in 5 of AC patients are using corticosteroid and/or NSAID eye drops**.

Underserved Patient Population



Growing and burdensome unmet medical need

Reproxalap

Reproxalap in AC

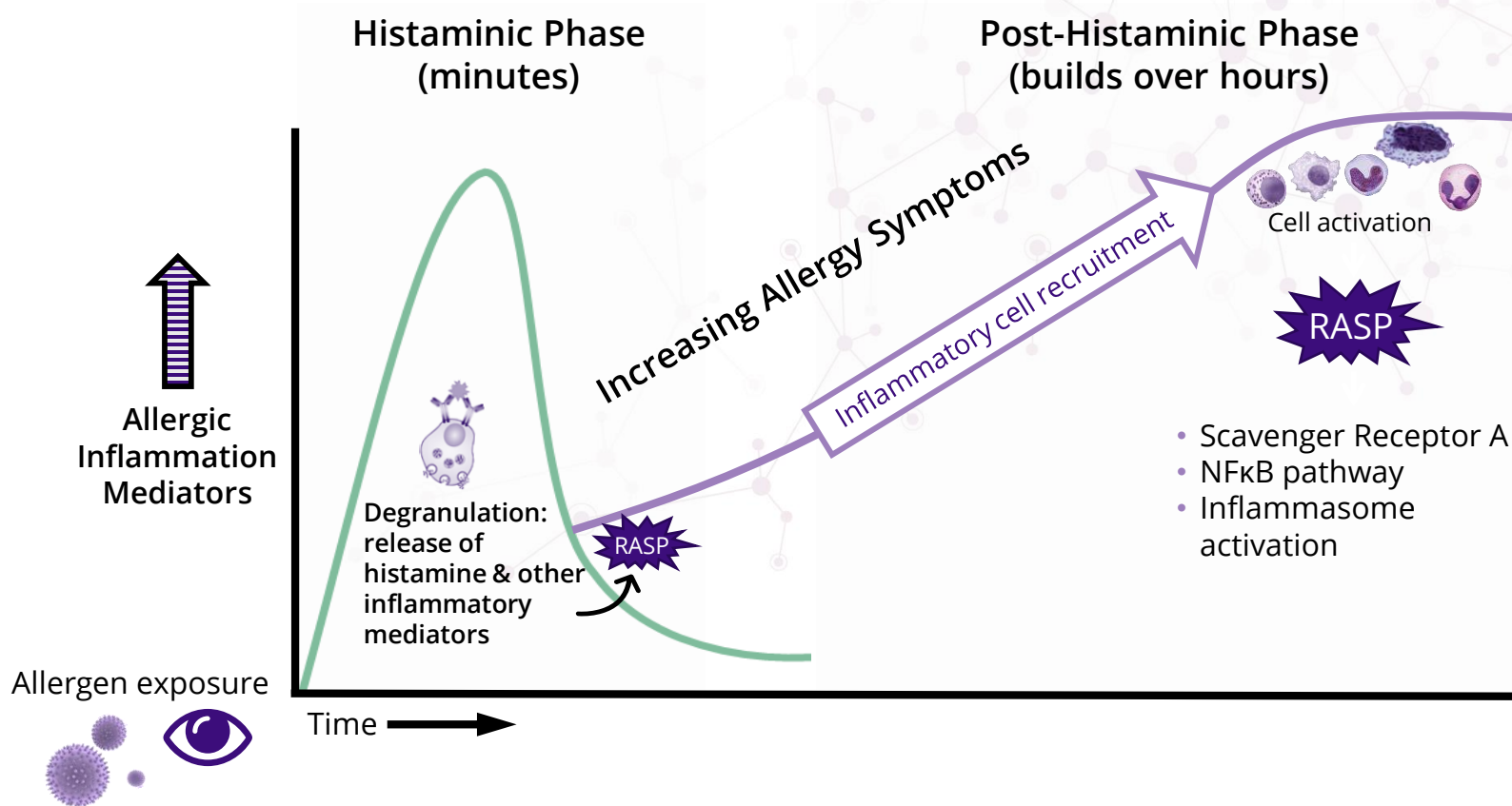


Clinically significant and durable symptom response in ALLEVIATE Phase 3 and allergen chamber clinical trials



Active in post-histaminic allergy, for which no drug is approved

Reproxalap's Novel Mechanism of Action Has The Potential to Provide Differentiated Activity Versus Antihistamines

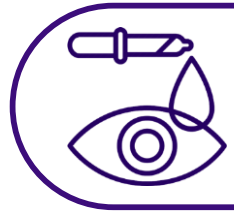


Reproxalap

- Reproxalap irreversibly inhibits RASP, limiting allergic inflammation.
- Reproxalap has the potential to be uniquely effective in post-histaminic allergy, which affects all allergic conjunctivitis patients.

Reproxalap Has The Potential to be the First Novel Allergic Conjunctivitis New Drug Application in Decades

Reproxalap's Phase 3 Program Utilizes Two Allergic Conjunctivitis Clinical Models



Conjunctival Allergen Challenge

Investigator administers one drop of allergen mixture on to the eye and records results.

60 minutes post allergen exposure evaluated

ALLEVIATE

Positive Results Announced March 2019



Allergen Chamber

Investigator monitors and assists patients in a controlled allergen chamber.

3.5 hours of continuous allergen exposure evaluated

INVIGORATE

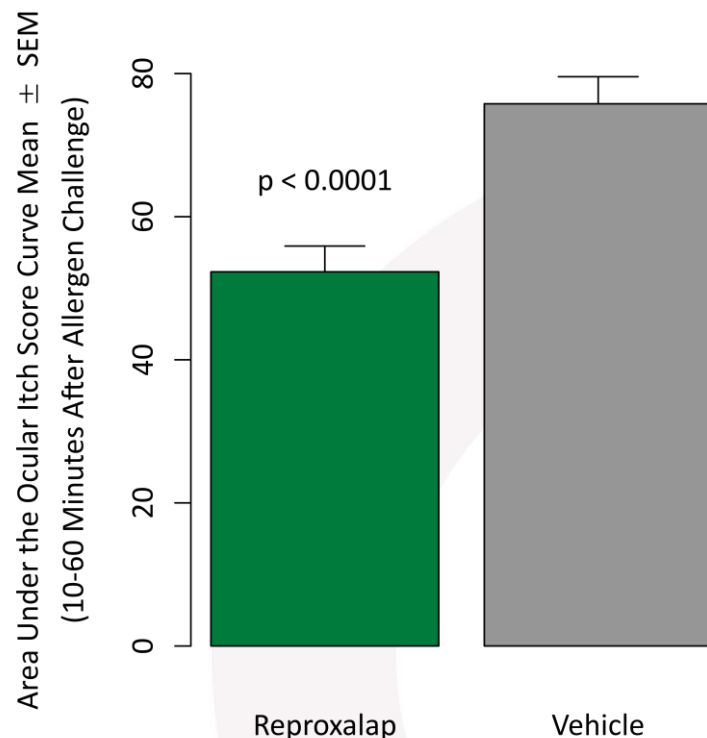
Expected to initiate H1 2020

- ✓ Supported by positive allergen chamber trial results

Reproxalap Demonstrated Greater and More Durable Clinical Responses than Vehicle Group in ALLEVIATE Phase 3 Clinical Trial

Primary Endpoint

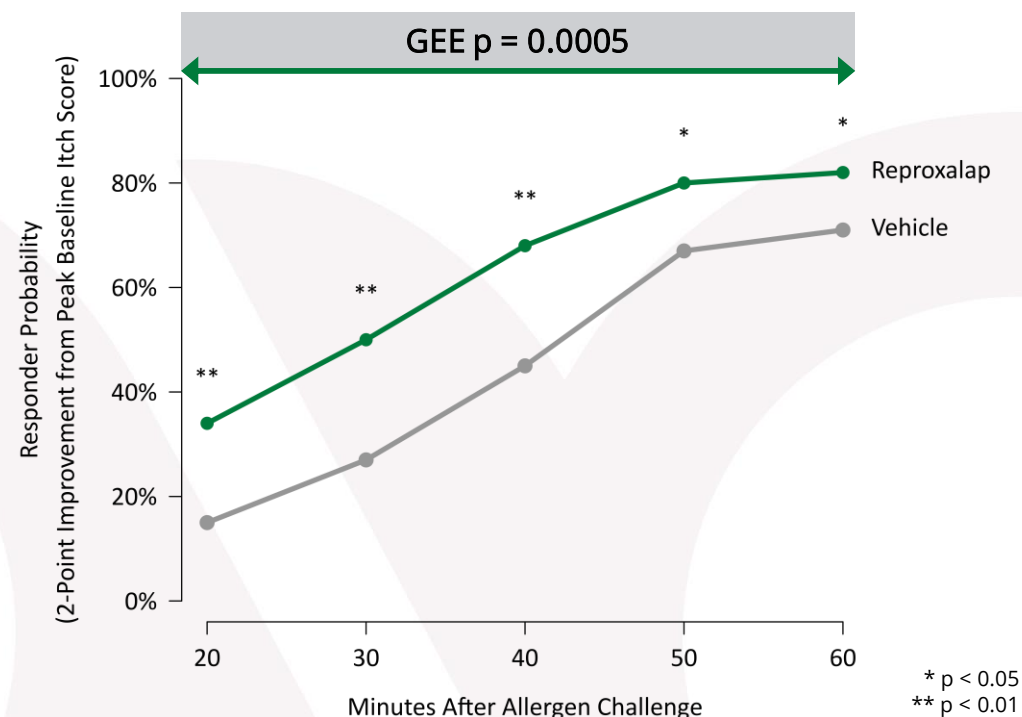
Area Under the Curve: Ocular Itch Score (0-4) 10 to 60 Minutes After Conjunctival Allergen Challenge



Improvement in itch score over one hour after allergen exposure statistically greater for reproxalap vs. vehicle

Key Secondary Endpoint

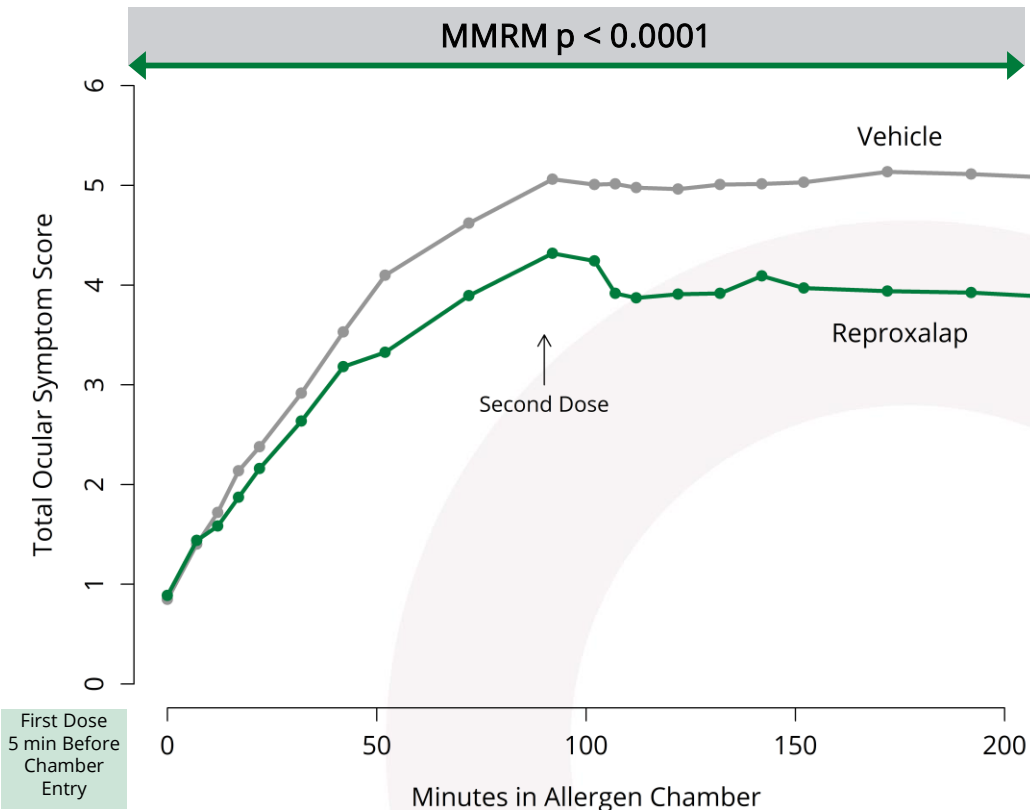
Probability of Two-Point Response: Ocular Itch Score (0-4) 20 to 60 Minutes After Conjunctival Allergen Challenge



Clinically significant response rate of reproxalap statistically higher than that of vehicle

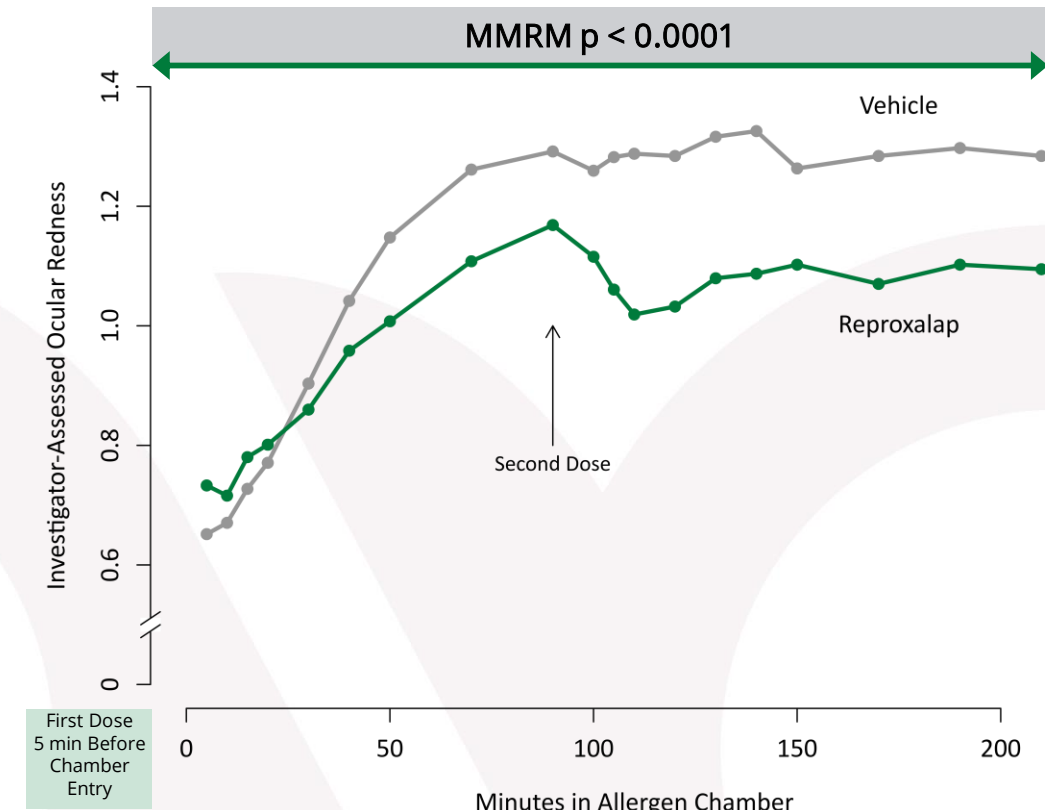
Reproxalap Demonstrated Greater and More Durable Clinical Responses than Vehicle in Allergen Chamber Clinical Trial

Total Ocular Symptom Score (0-11 scale) During 3.5 Hours of Exposure



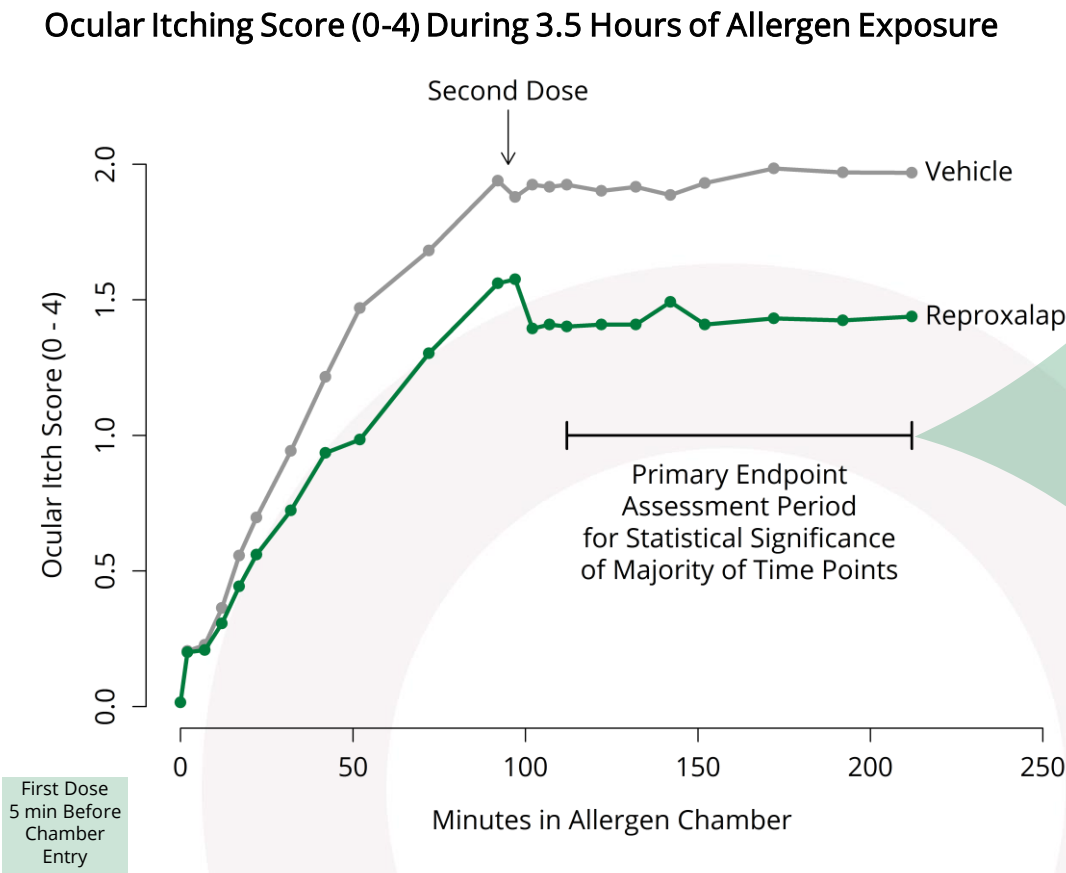
Statistically significant reduction in all assessed ocular symptoms and signs (itch, redness, and tearing) for 3.5 hours of continuous exposure to allergen

Ocular Redness Score (0-4) During 3.5 Hours of Exposure



Statistically significant reduction in ocular redness vs. vehicle for 3.5 hours of continuous exposure to allergen

Confirmed INVIGORATE Phase 3 Primary Endpoint Achieved in Allergen Chamber Clinical Trial*



Allergen chamber time point	p value
112	0.0002
122	0.0004
132	0.0002
142	0.0044
152	0.0001
172	<0.0001
192	<0.0001
212	0.0002

All time points from 110 to 210 minutes were statistically significant in Allergen Chamber trial



*The safety and efficacy results of later phase or subsequent clinical trials may not confirm the results of earlier trials; p-value derived from Mixed effect Model Repeat Measurement (MMRM) time point analyses.
Source: Aldeyra Therapeutics allergen chamber clinical trial – reproxalap 0.25% (ClinicalTrials.gov #NCT03709121); n=66

Allergic Conjunctivitis Phase 3 Clinical Program

Allergic Conjunctivitis

Clinical Program to NDA Submission

Results Announced
March 2019

ALLEVIATE Phase 3 (CAC)

Agreement on INVIGORATE
Phase 3 Design Reached
October 2019

Type C
FDA Meeting

Additional Phase 3 Testing

AC Safety Study

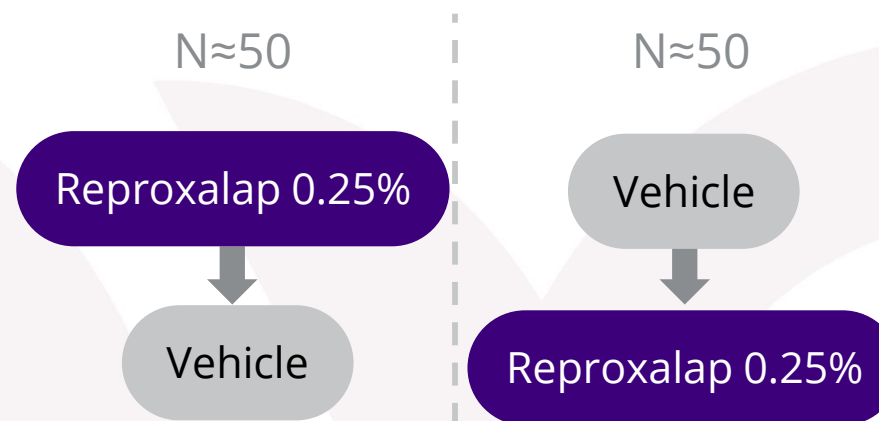
NDA*

The INVIGORATE Phase 3 Clinical Trial Design

- **Primary endpoint:**
 - Statistical significance in ocular itch (0-4 scale) at a majority of eleven time points between 110 and 210 minutes
- **Secondary endpoints:**
 - Investigator-assessed ocular redness score
 - Patient-reported ocular tearing score
 - Total ocular symptom score
- **Inclusion/exclusion criteria:**
 - Same as prior allergen chamber trial
- **Dosing schedule and chamber exposure:**
 - Same as prior allergen chamber trial

Expected to initiate H1 2020

Two-Way Randomized Crossover





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CORPORATE REVIEW

Ocular Disease Area

- DRY EYE DISEASE
- ALLERGIC CONJUNCTIVITIS
- **PROLIFERATIVE VITREORETINOPATHY**

ADX-2191 Represents a New Approach For PVR

– A Rare Sight-Threatening Retinal Disease With No Approved Therapy

Proliferative vitreoretinopathy

ADX-2191

4,000
U.S.

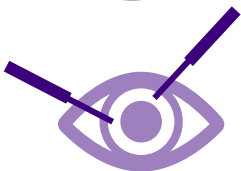
PVR is a **rare disease**, with ~4,000 patients per year in the U.S. and nearly twice as many in Europe and Japan.



Left untreated, retinal detachment due to PVR can **progress to permanent blindness**.



There is currently **No FDA- or EMA-approved therapy**.



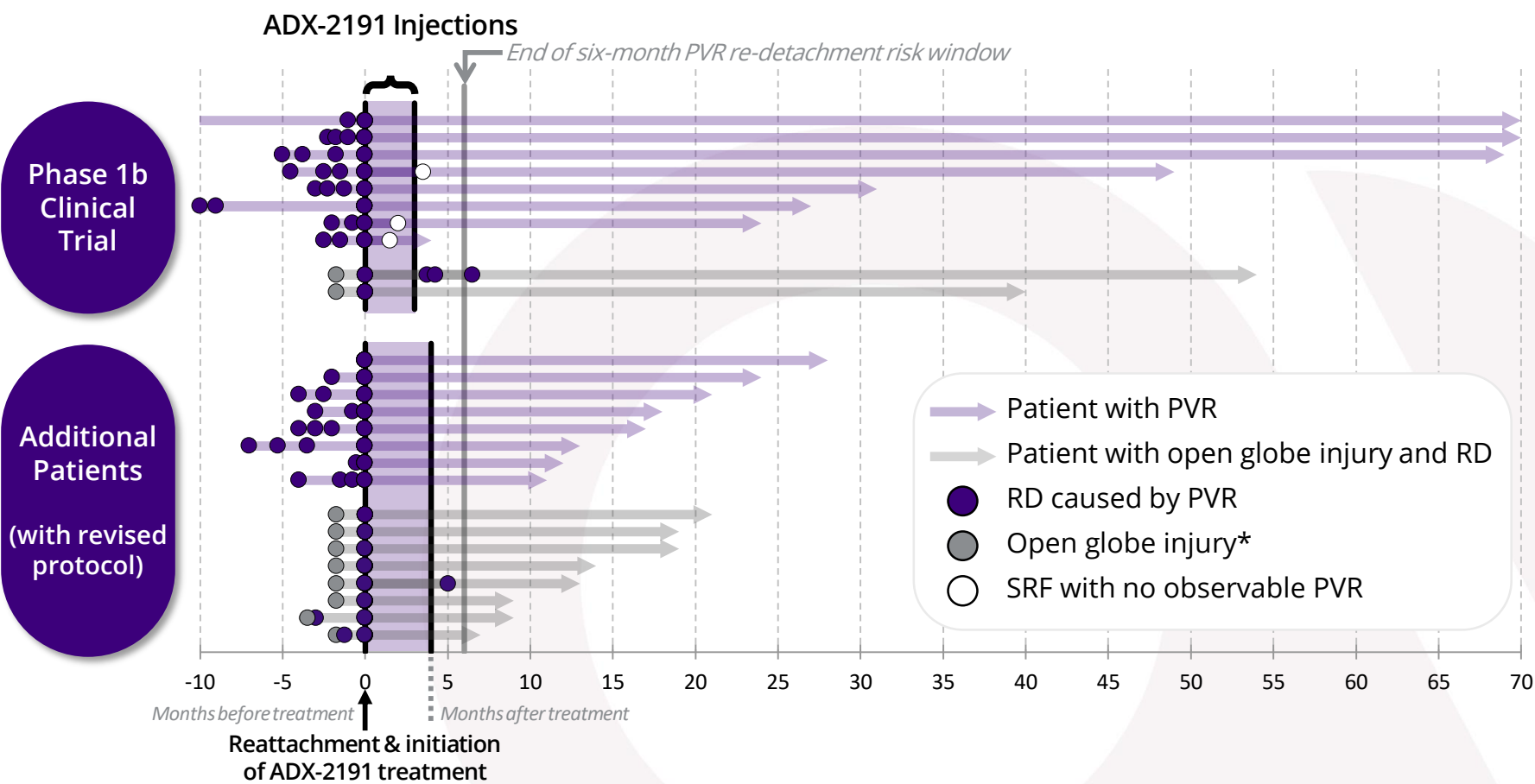
Repeat surgery, which can lead to **vision loss**, is currently the only possible course of action.

ADX-2191

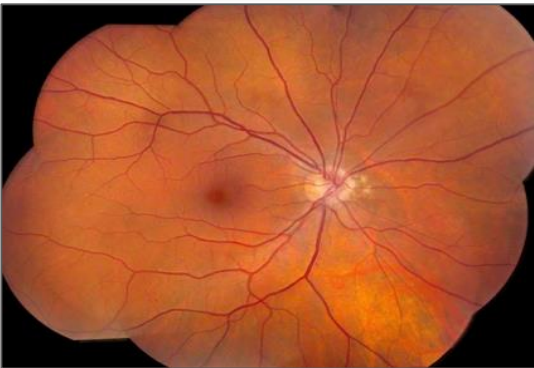
- A **novel approach and potential therapeutic breakthrough** in PVR treatment
- **Granted U.S. orphan designation** for the prevention of PVR
- **Granted FDA fast track designation** for the prevention of PVR
- **Tolerability and reattachment success** during study period **demonstrated in Phase 1b** open-label investigator sponsored clinical trial
- **GUARD adaptive Phase 3 clinical trial expected to initiate Q4 2019**

ADX-2191 Reduced Recurrent Retinal Detachment in Investigator Sponsored Phase 1b Clinical Trial and in Additional In-Practice Use

Retinal Detachments Over Time by Patient



Normal Retina



Retinal Detachment Due to PVR



 aldehyra

*Timing of open globe injury as shown is estimated. Typically 6-8 weeks prior to reattachment & initiation of ADX-2191. There is no assurance that prior results, such as signals of safety, activity or durability of effect, observed from this open label investigator sponsored trial will be replicated in more rigorous clinical trials involving ADX-2191. Source: ADX-2191 PVR Phase 1b investigator sponsored clinical trial (n=10) results and additional in-practice use (n=16)

RD = Retinal detachment
PVR = Proliferative vitreoretinopathy
SRF = Subretinal fluid

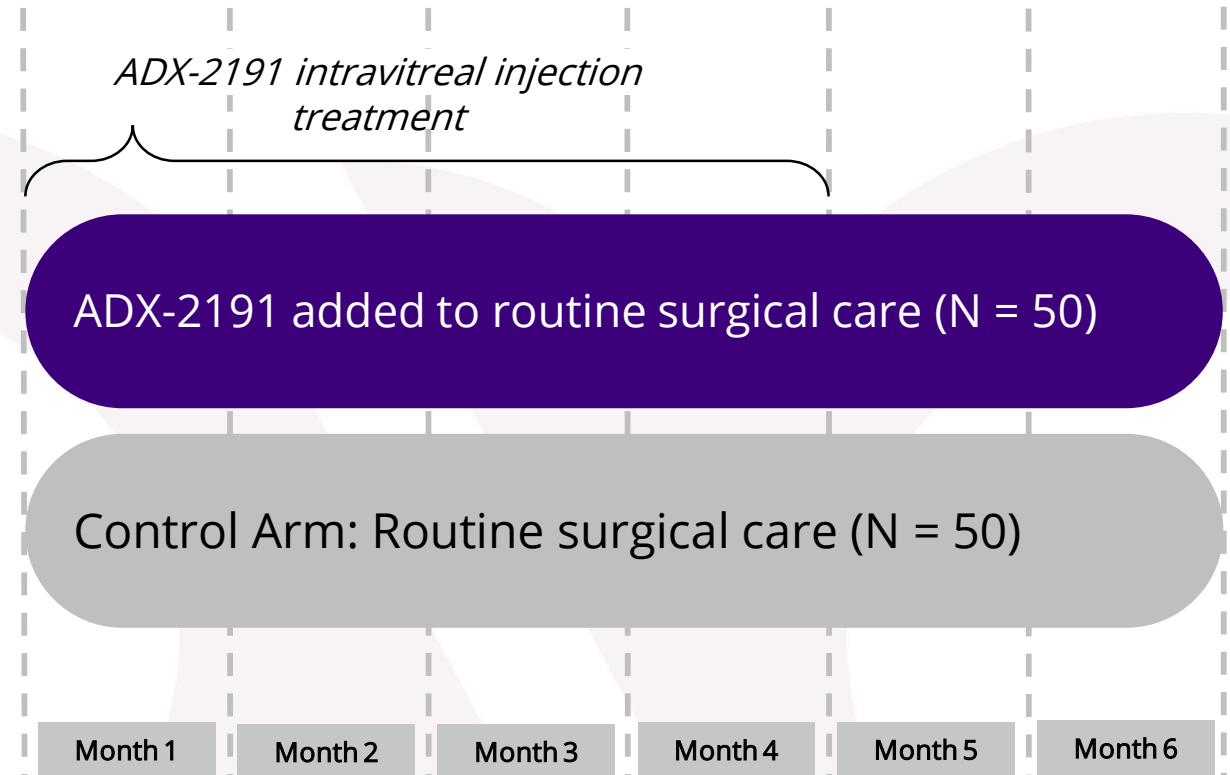
ADX-2191: GUARD Trial Design in Proliferative Vitreoretinopathy

Adaptive Phase 3 (Part 1) Clinical Trial Design

- **Primary objective:**
 - Evaluate efficacy of intravitreal ADX-2191 injections for prevention of recurrent retinal detachment due to proliferative vitreoretinopathy (PVR)
- **Design:**
 - Multi-center, randomized, controlled, two- part, adaptive Phase 3 clinical trial
- **Inclusion highlights:**
 - Recurrent retinal detachment due to PVR, or
 - Retinal detachment associated with open-globe injury
- **Dosing regimen:**
 - At surgery, weekly (x8), and then every other week (x4) intravitreal ADX-2191 injections
- **Endpoint:**
 - Retinal re-detachments due to PVR requiring re-operation within 6 months:
 1. OCT demonstrating fovea-off retinal detachment
 2. Photographic documentation retinal detachment

Expected to initiate Q4 2019

Adaptive Phase 3 PVR Clinical Trial Design: Part 1





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CORPORATE REVIEW

Systemic Disease Area

- SJÖGREN-LARSSON SYNDROME

Reproxalap Represents a New Approach For SLS

– A Rare RASP-Mediated Disease with No Approved Therapy

Sjögren-Larsson Syndrome

1,000
U.S.

SLS is a rare inborn error of metabolism caused by a mutation in the gene encoding fatty aldehyde dehydrogenase; there are ~1,000 SLS patients in the U.S. and a greater number in Europe.



Severe symptoms significantly impact SLS patient and caregiver quality of life.



There is currently no FDA- or EMA-approved therapy.



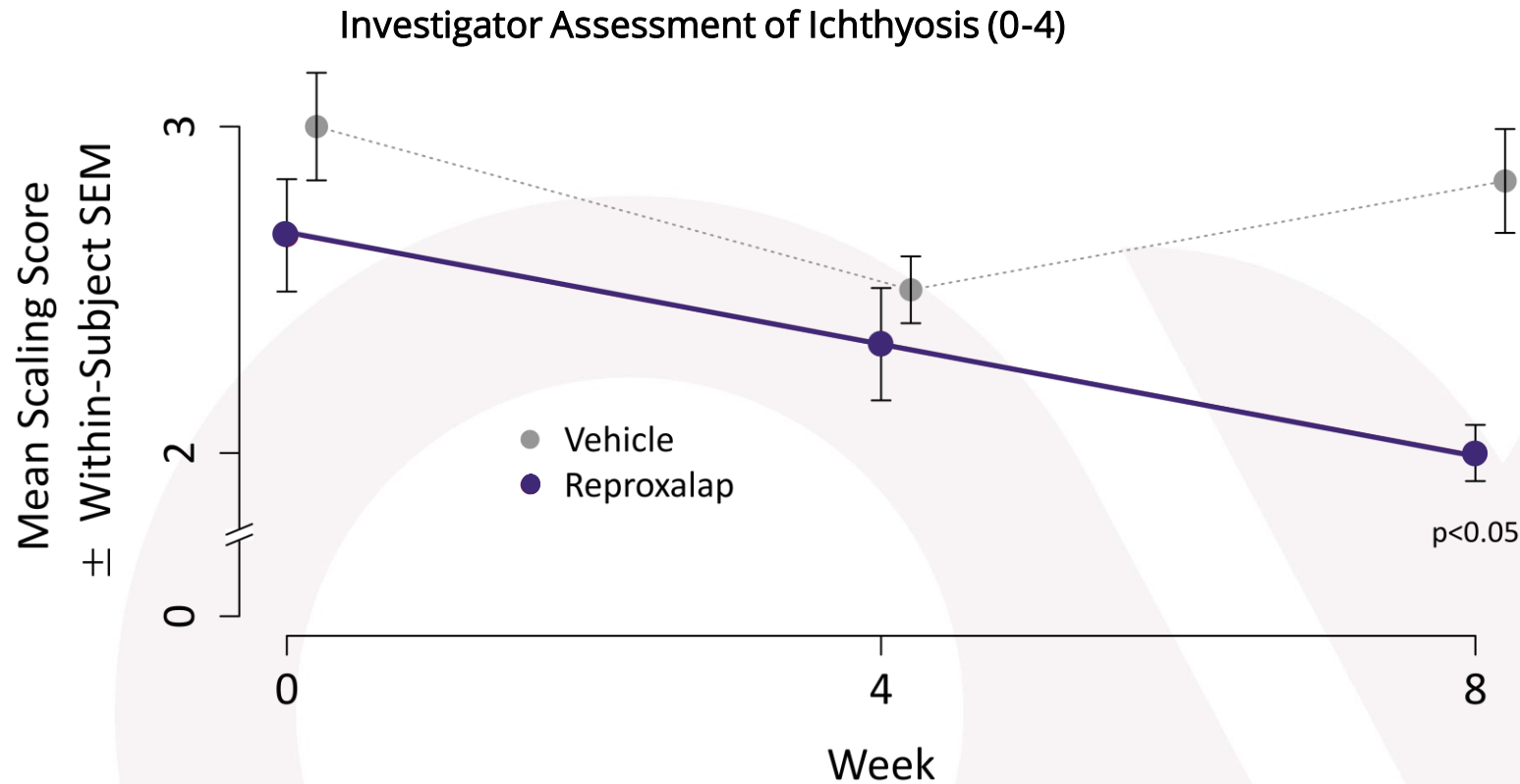
Nonstop disease burden diminishes quality of patient/caregiver life, with hours devoted to managing painful scaling, monitoring, & care.

Reproxalap

Reproxalap

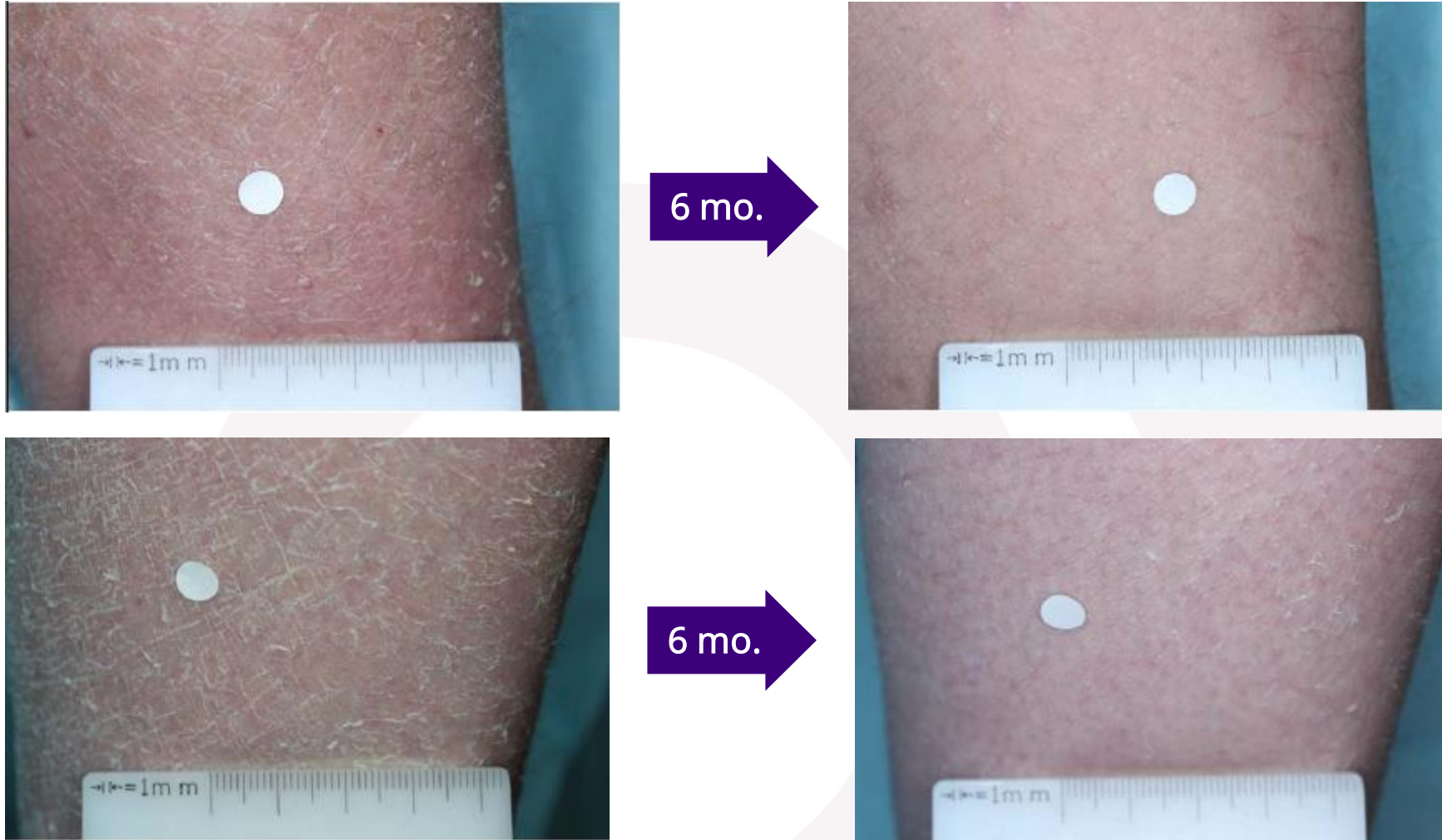
- A novel approach and potential lifelong therapy to replace missing enzymatic activity in SLS
- Granted U.S. orphan designation for the treatment of congenital ichthyosis (primary symptom of SLS)
- Significantly reduced SLS ichthyosis in a randomized, vehicle-controlled Phase 2 clinical trial
- RESET Phase 3-Part 1 completed Q2 2019; results to be discussed with regulatory authorities prior to initiating subsequent clinical testing

Reproxalap Demonstrated Clinically Relevant and Consistent Activity in Phase 2 Clinical Trial



Over two months of treatment, ichthyosis improved consistently from moderate to mild disease

Scaling Scores Statistically Lower Than Baseline Observed in Reproxalap-Treated Patients in RESET Part 1





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CORPORATE REVIEW

Building The Future

Our Value Proposition

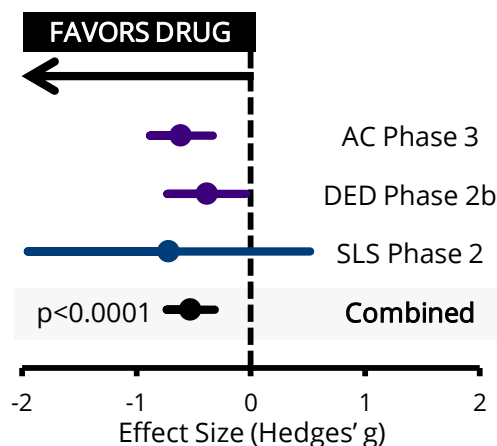


Our Phase 3 Drug Candidates Are Protected and Well Positioned

Reproxalap

- Worldwide rights, royalty free
- Composition of matter IP through 2033 (with Hatch-Waxman extension) and extensive additional patent protection
- FDA Orphan Drug Designation for the treatment of congenital ichthyosis (primary symptom of SLS)
- Meta analysis strongly supports drug activity

Bars represent 95% confidence intervals. Between-group comparisons used for vehicle controlled trials (DED, AC, SLS). Results based on dryness (OD & 4 Symptom Score) in DED, area under the curve ocular itch in AC, and scaling in SLS.



ADX-2191

- Worldwide rights
- FDA 505(b)(2) approval pathway
- Methods of use (therapeutic and delivery) IP and additional patent work ongoing
- FDA Orphan Drug Designation for the prevention of PVR
- If approved, ADX-2191 has the potential to be the only approved form of the drug for use in the eye
- U.S. Drug Quality and Security Act prohibits the compounding of approved drugs

Experienced Management Team and Board of Directors

Management Team

Todd Brady, M.D., Ph.D.
President, CEO, & Director

Joshua Reed, M.B.A.
Chief Financial Officer

David Clark, M.D.
Chief Medical Officer

David McMullin, M.B.A.
Chief Commercial Officer

Stephen Machatha, Ph.D.
SVP Technical Operations



Board of Directors

Richard Douglas, Ph.D.
CHAIRMAN

Former SVP Corporate Development at Genzyme

Ben Bronstein, M.D.

Former CEO Peptimmune⁸

Marty Joyce, M.B.A.

Former CFO of Serono USA

Gary Phillips, M.D.

CEO OrphoMed

Jesse Treu, Ph.D.

Domain Associates

Neal Walker, D.O.

CEO Aclaris Therapeutics

Todd Brady, M.D., Ph.D.

CEO Aldeyra Therapeutics

1. Acquired by Xanthus/Antisoma
2. Acquired by Schwarz/UCB
3. Acquired by Alexion
4. Acquired by Takeda

5. Acquired by Ligand
6. Acquired by Merck
7. Acquired by Alexion
8. Acquired by Genzyme

Upcoming and Recently Achieved Development Milestones:^{*}

Novel Approaches to Address Immune-Mediated Disease

○ = Ocular Diseases
○ = Systemic Diseases



Reproxalap allergic conjunctivitis design for INVIGORATE Phase 3 confirmed October 2019



ADX-2191 proliferative vitreoretinopathy GUARD Phase 3 - Part 1 clinical trial initiation Q4 2019



ADX-1612 post-transplant lymphoproliferative disorder Phase 2 clinical trial initiation H2 2019



Reproxalap dry eye disease RENEW Phase 3 - Part 1 completion Q4 2019



Reproxalap allergic conjunctivitis INVIGORATE Phase 3 initiation H1 2020



ADX-629 systemic Phase 1 clinical trial initiation H2 2019



Reproxalap Sjögren-Larsson Syndrome RESET Phase 3 - Part 1 completion Q2 2019



Positive reproxalap allergic conjunctivitis allergen chamber trial top-line results



Reproxalap dry eye disease RENEW Phase 3 - Part 1 clinical trial initiation April 2019



Positive reproxalap allergic conjunctivitis ALLEVIATE Phase 3 trial results March 2019



Innovating Transformative Therapies