ALDEYRA THERAPEUTICS™

Corporate Review

August 2018

NASDAQ: ALDX

Disclaimers and Forward-Looking Statements

This presentation and various remarks which may be made during this presentation contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding Aldeyra's possible or assumed future results of operations, expenses and financing needs, business strategies and plans, research and development plans or expectations, trends, the structure, timing and success of Aldeyra's planned or pending clinical trials, expected milestones, market sizing, pricing and reimbursement, competitive position, regulatory matters, industry environment and potential growth opportunities, among other things. Forward-looking statements include all statements that are not historical facts and, in some cases, can be identified by terms such as "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "anticipate," "project," "target," "design," "estimate," "predict," "potential," "plan" or similar expressions and the negatives of those terms.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause Aldeyra's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These statements reflect Aldeyra's current views with respect to future events and are based on assumptions and subject to risks and uncertainties, including the development, clinical and regulatory plans or expectations for Aldeyra's product candidates and Aldeyra's continuing review and quality control analysis of clinical data. Important factors that could cause actual results to differ materially from those reflected in Aldeyra's forward-looking statements are described in Aldeyra's most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q, as well as Aldeyra's subsequent filings with the Securities and Exchange Commission. All of Aldeyra's development timelines may be subject to adjustment depending on recruitment rate, regulatory review, preclinical and clinical results, and other factors that could delay the initiation, completion, or reporting of clinical trials.

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

Deep and Innovative Pipeline focused on immune-mediated diseases

Near-Term Development Catalysts support path to commercialization

Solid Track Record of development success

Large Market Potential of late-stage pipeline

Solid Cash Position

Cash, cash equivalents and marketable securities were $38.9 million as of March 31, 2018

Our Mission

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

~7%

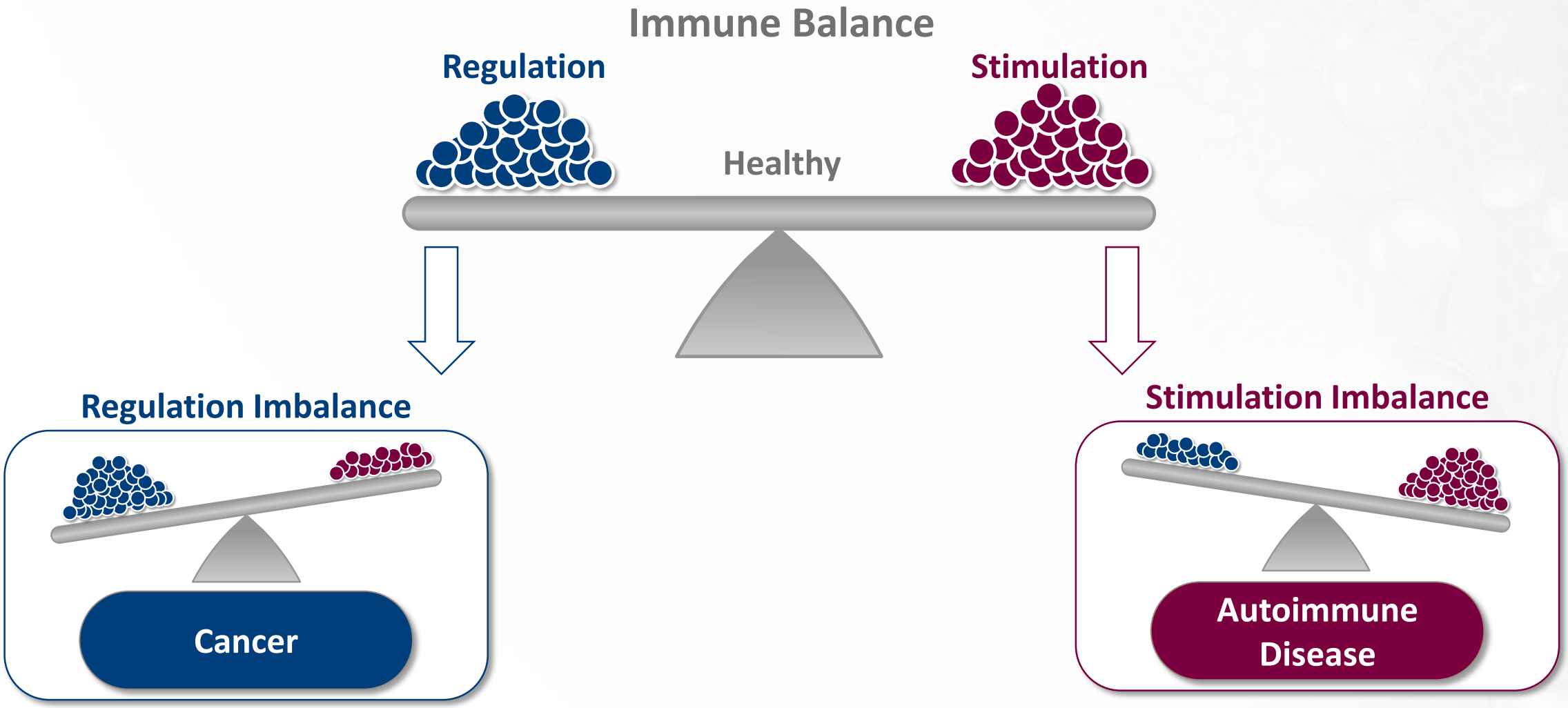
Of Western Society

Suffer from some form of **immune-mediated disease**

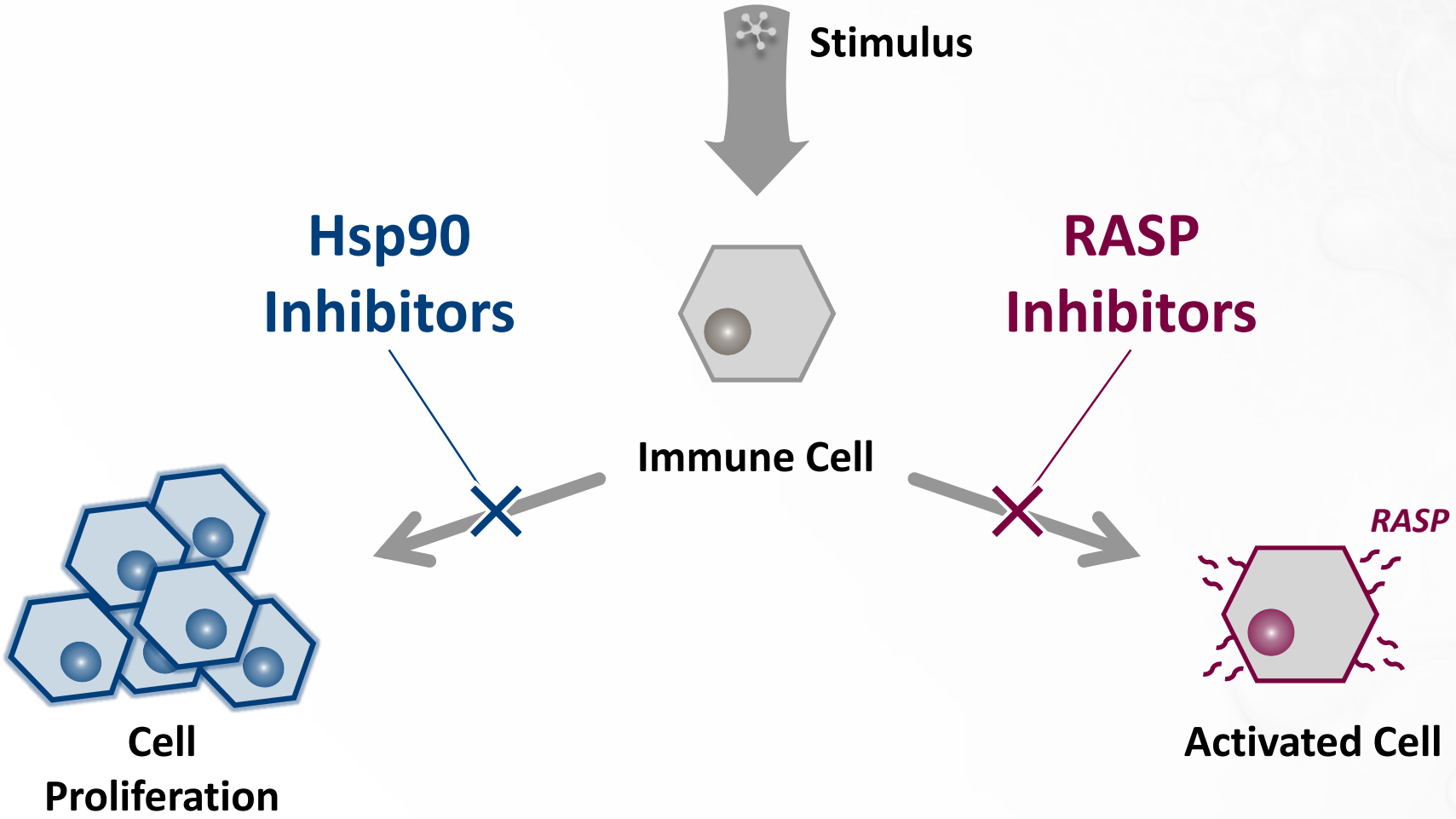
Disease control elusive despite existing therapies, and thus **novel approaches are needed**

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

Immune System Imbalance Leads to Disease

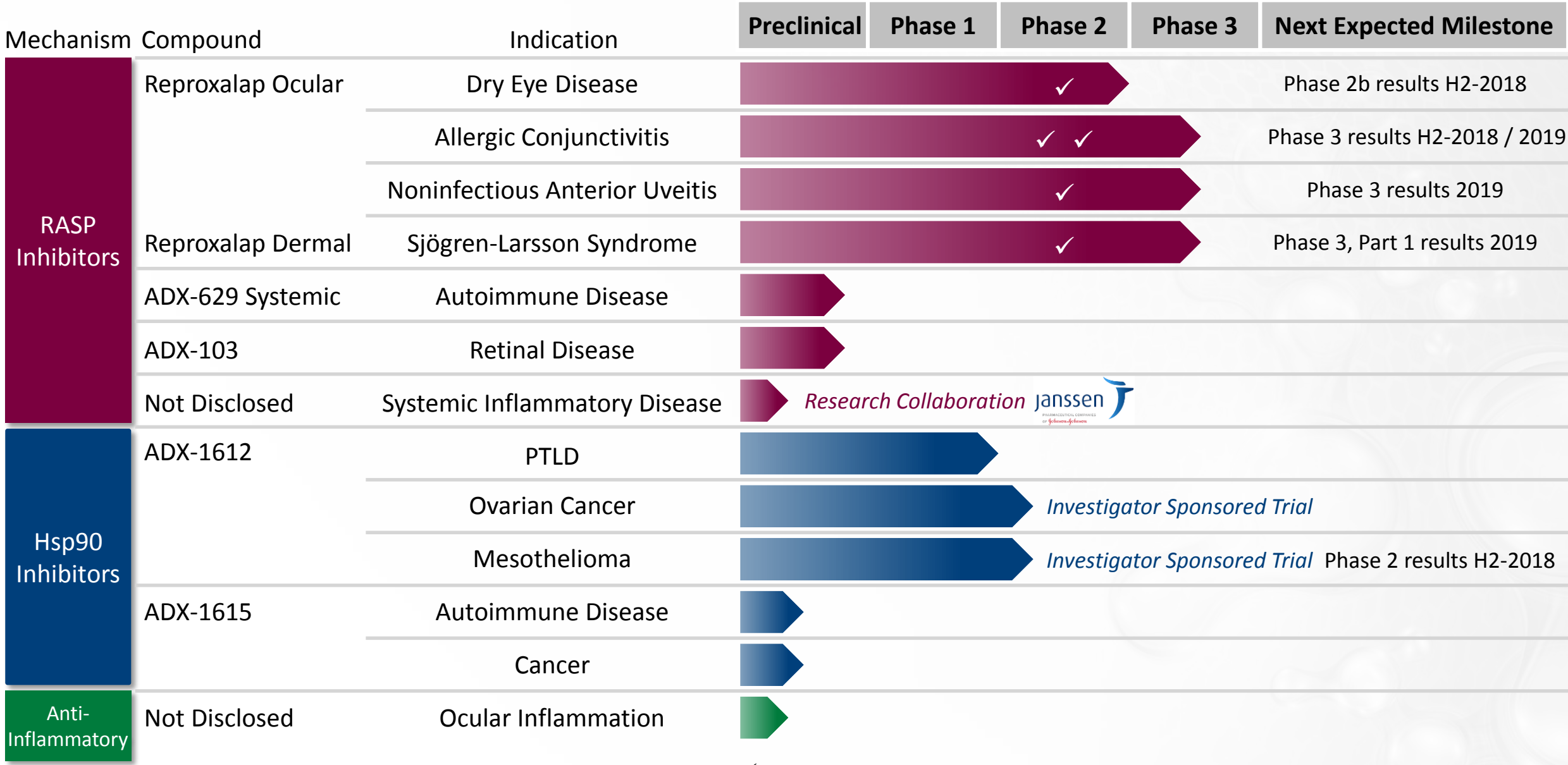


Novel Approaches to Address Immune-Mediated Disease



RASP = Reactive Aldehydes Species

Deep and Innovative Pipeline



RASP = Reactive Aldehydes Species
PTLD = Post-Transplant Lymphoproliferative Disorder

✓ = Positive Phase 2 clinical data reported in 2016 – 2017

Reproxalap: Our Lead Product Candidate
Potential Benefits Over Standard of Care Across Four Indications

	Reproxalap Development Stage	Current Standard of Care	Potential Reproxalap Competitive Advantages†
Ocular Inflammation			
Dry Eye Disease	**Phase 2b**	Xiidra®, Restasis®	**Rapid onset, broader activity**
Allergic Conjunctivitis	**Phase 3**	Antihistamines	**Non-drying, durable activity; Responder superiority vs. vehicle**
Noninfectious Anterior Uveitis	**Phase 3**	Corticosteroids	**No expected risk of glaucoma or other corticosteroid toxicities**
Inborn Errors of Metabolism			
Sjögren-Larsson Syndrome	**Phase 3**	Bathing, Moisturizers	**Clinically demonstrated efficacy; 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.

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Reproxalap:
Target Therapies with Significant Market Potential

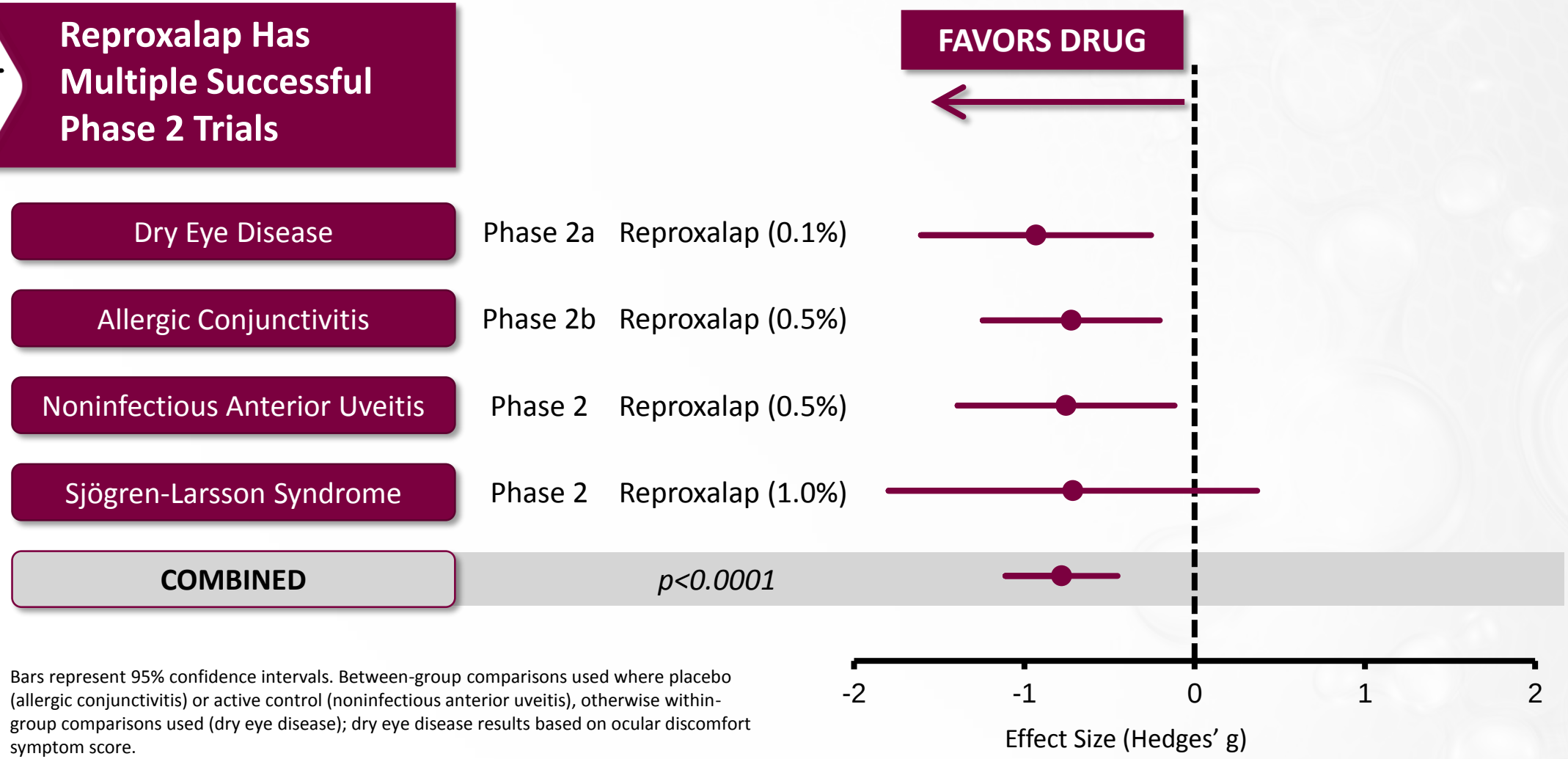
Market and Commercialization Potential

	Estimated U.S. Population*	Healthcare Providers	Commercial Build-out	Pricing Benchmarks†
Ocular Inflammation				
Dry Eye Disease	20 million	Ophthalmologists and Optometrists	Internal Sales Force or Partner	$500 or greater per course
Allergic Conjunctivitis	30 million	Ophthalmologists and Optometrists	Internal Sales Force or Partner	
Noninfectious Anterior Uveitis	150,000	Anterior Segment Ophthalmologists (~30 Centers)	Internal Sales Force or Partner	
Inborn Errors of Metabolism				
Sjögren-Larsson Syndrome	1,000‡	Pediatric Geneticists, Tertiary Care Dermatologists	Internal Sales Force or Partner	$200,000 - $400,000 per year

*Aldeyra estimates based on internal market research and publicly available information.
†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.
‡Extrapolated from a Swedish estimate and a U.S. genetic mutation analysis, it is generally assumed that there are approximately 1,000 Sjögren-Larsson Syndrome (SLS) patients in the United States and a greater number of SLS patients in Europe.

Reproxalap:
Meta-Analysis Strongly Supports Drug Activity

Reproxalap Has Multiple Successful Phase 2 Trials



Bars represent 95% confidence intervals. Between-group comparisons used where placebo (allergic conjunctivitis) or active control (noninfectious anterior uveitis), otherwise within-group comparisons used (dry eye disease); dry eye disease results based on ocular discomfort symptom score.

Source: Aldeyra analysis of Phase 2 clinical trial data on file.

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Reproxalap: Ocular Inflammation

- Dry Eye Disease
- Allergic Conjunctivitis
- Noninfectious Anterior Uveitis

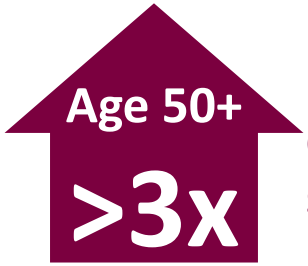
Dry Eye Disease:
A Chronic Disease with Inadequate Therapy

Large Disease Burden

20 million

of **adults in the U.S.** estimated to suffer from Dry Eye Disease (DED)

Women are twice as likely to suffer from DED than men



DED **increases with age**, with those over age 50 three times more likely to suffer from DED

DED can significantly effect vision-related **quality of life**

Inadequate Current Therapy

Restasis®

2017 Sales: $1.5 billion

- Only a subset of patients respond favorably
- May take up to six weeks or longer to have an effect

Xiidra® (launched 2016)

2017 Sales: $259 million

- Up to 25% of users experience eye irritation or discomfort and an associated bad taste

A Unique Opportunity

Reproxalap

- A **novel and differentiated approach** to treat DED
- **Rapid Improvement of multiple signs and symptoms** observed in patients with DED in a Phase 2a clinical trial
- Phase 2b **results expected H2 2018**

Sources: "Dry Eyes" by R. M. Shtein, MD; www.uptodate.com, May 2018; Farrand et al; American Journal of Ophthalmology 90:98, 2017; Allergan 10K and Shire 10K; Aldeyra research.

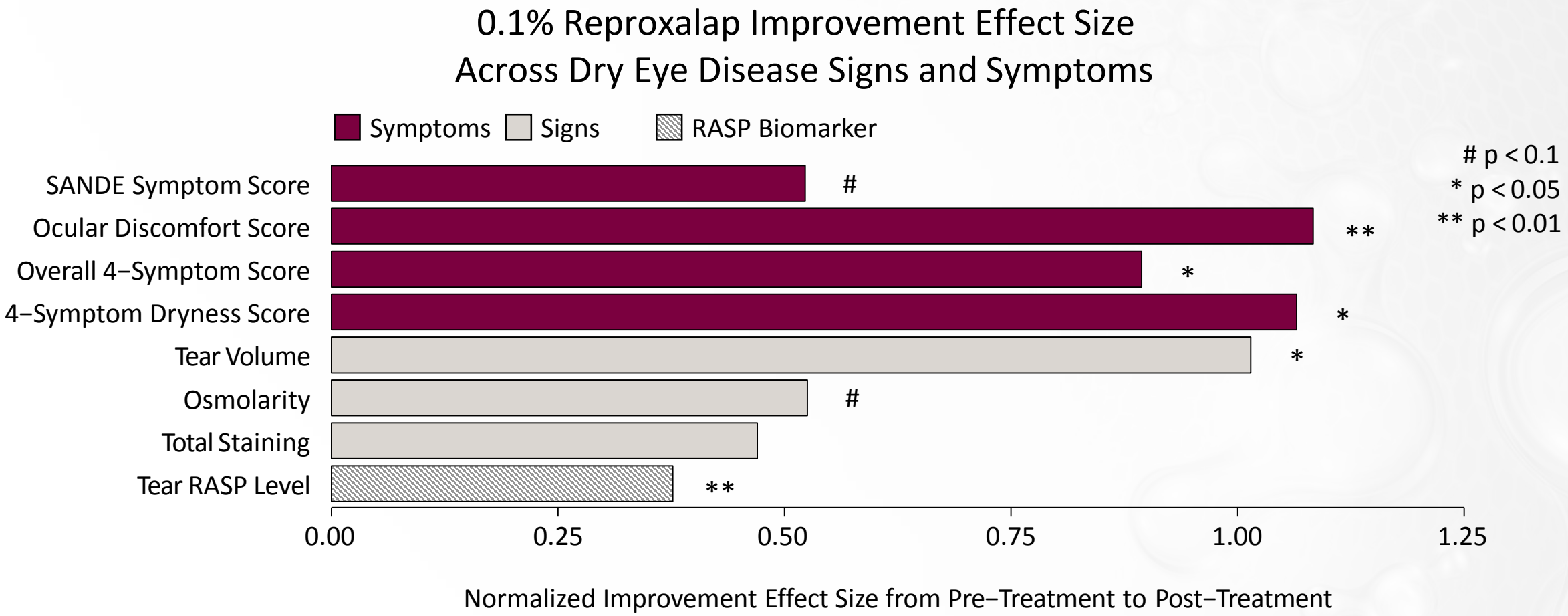
Reproxalap Improved Numerous Dry Eye Disease Signs and Symptoms in Phase 2a Clinical Trial

	Endpoint (Pooled Data)	Pre-Treatment*	Post-Treatment*	p value
Symptoms	Symptom Assessment in Dry Eye (SANDE) Score (0-100)	61	52	0.003
	Ocular Discomfort Score (0-4)	2.3	1.5	0.00002
	Overall 4-Symptom Score (0-4)	2.6	2.0	0.0004
Signs	Tear Volume (Schirmer Test)	5.6 mm	8.3 mm	0.008
	Osmolarity	304 mOsm/L	294 mOsm/L	0.003
	Total Staining (Lissamine Green) (0-20)	5.2	4.3	0.002

After one month of therapy, multiple signs and symptoms of dry eye disease improved, a broad and rapid therapeutic response.

*Pre-Treatment = Day 0; Post-Treatment = Day 28; units are subject reported scores unless otherwise indicated.

Improvement Effect Sizes Were Robust and Statistically Significant in Phase 2a Clinical Trial



RASP = Reactive Aldehydes Species
Effect size = Mean difference from Day 0 to Day 28 / Standard Deviation of Day 0.

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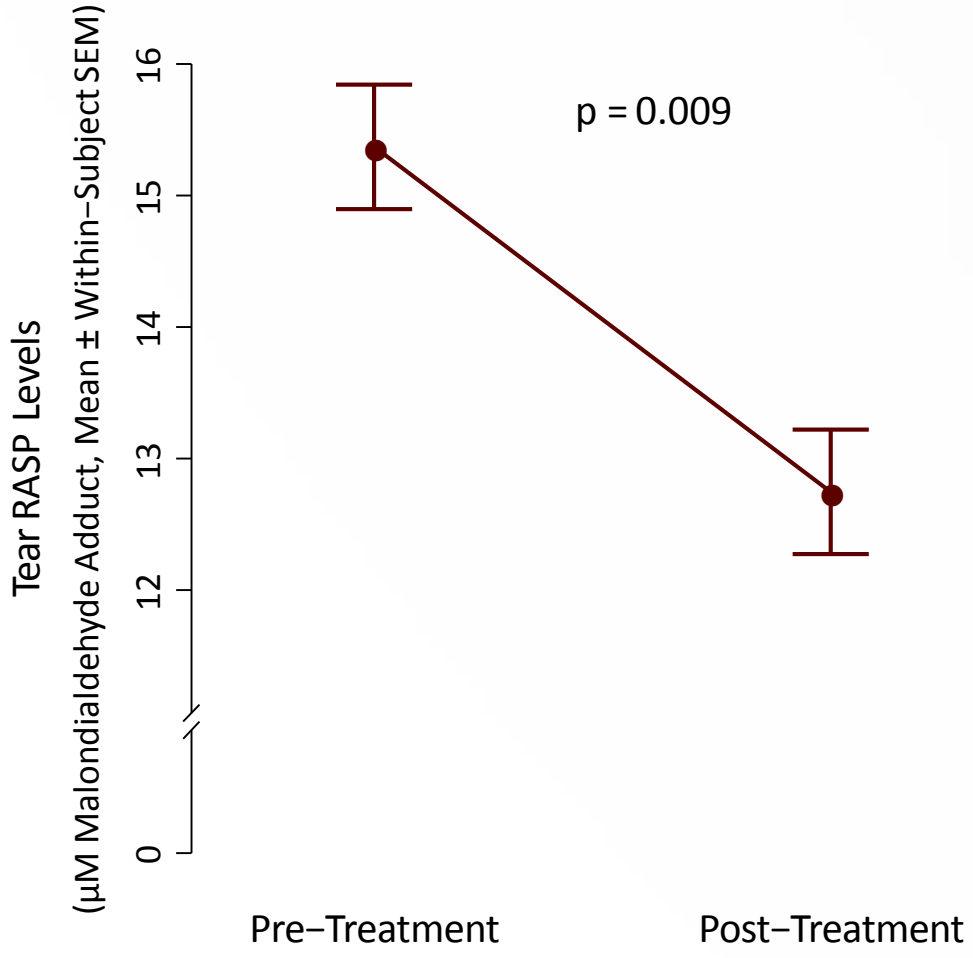
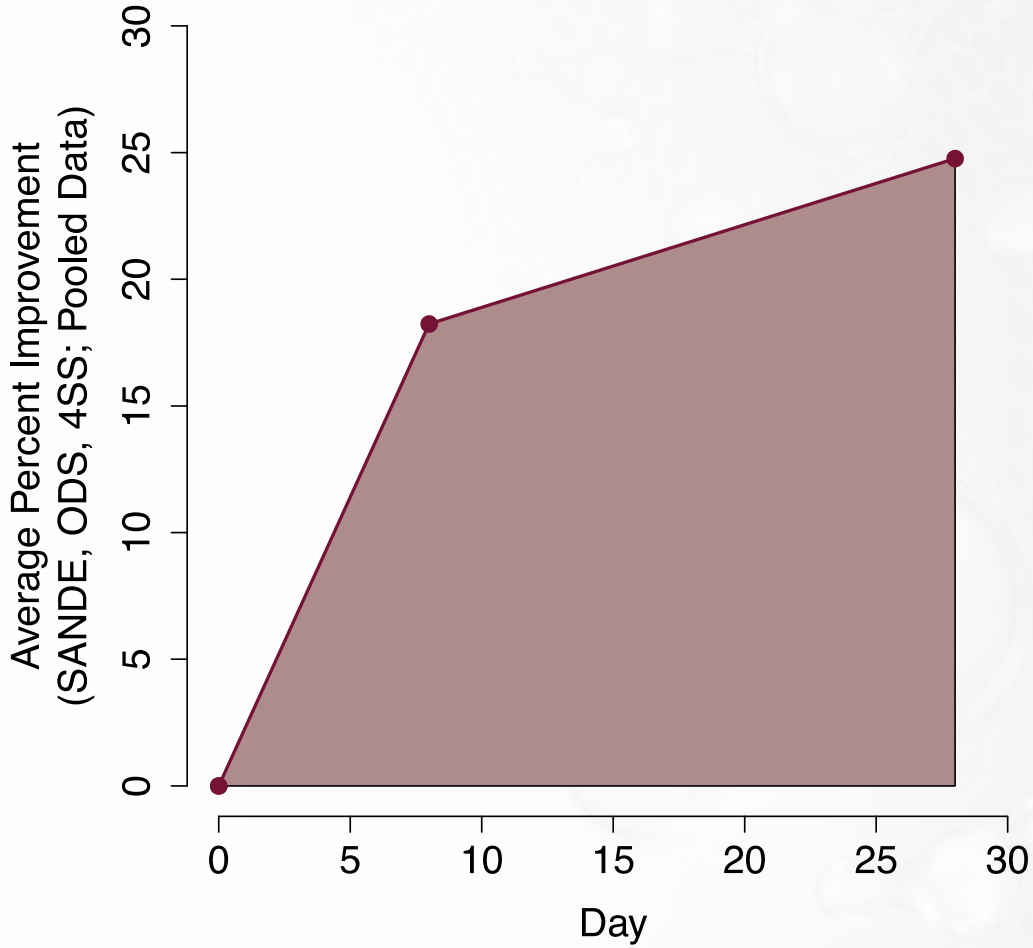
Drug Activity in Phase 2a Clinical Trial Supported by Biomarker Reduction and Increased Efficacy Over Time



RASP = Reactive Aldehydes Species
Pre-Treatment = Day 0, Post-Treatment = Day 28.



SANDE=Symptom Assessment in Dry Eye Score, ODS=Ocular Discomfort Score,
4SS=Overall 4–Symptom Score

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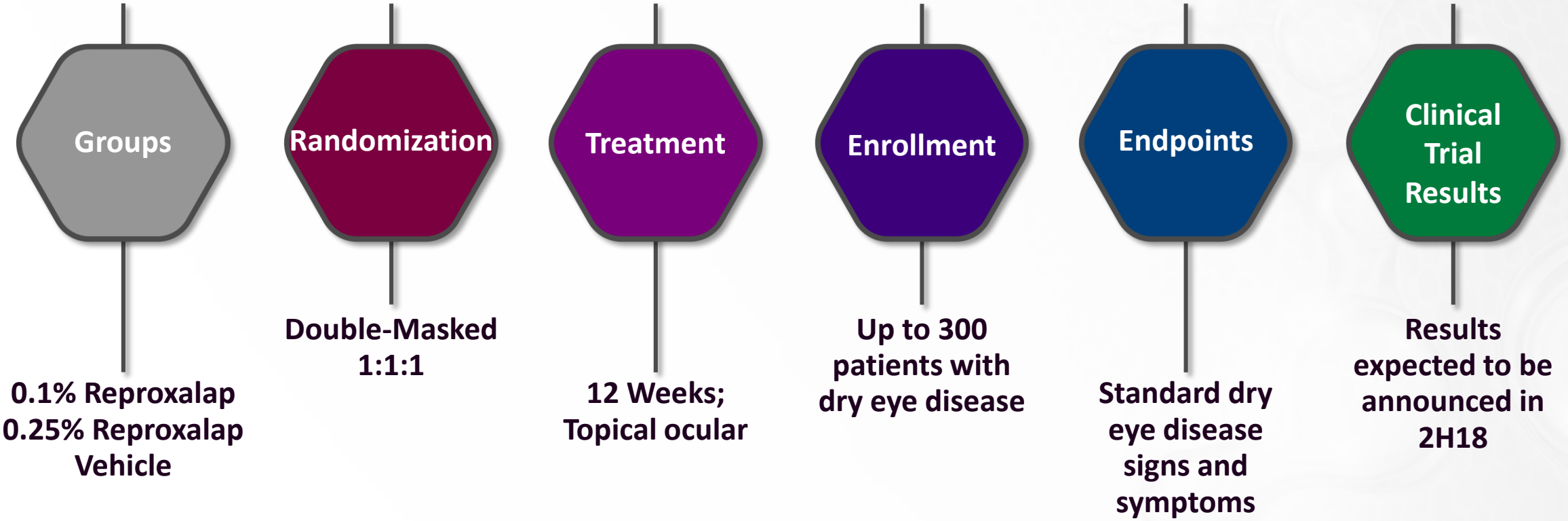
Dry Eye Disease Phase 2b Clinical Trial Design
Initiated January 2018



Further information can be found on www.clinicaltrials.gov: Trial #NCT03404115.

Allergic Conjunctivitis: A Common Disease with Unmet Medical Need

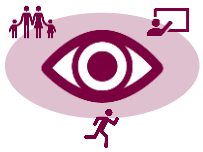
Large Disease Burden

20% **globally**

20% or more of people globally suffer from allergic conjunctivitis (AC) annually, and prevalence is increasing

AC can cause persistently disturbing symptoms **acutely, seasonally,** and **perennially**

Comorbidities with AC are common, including ocular conditions such as dry eye disease



AC may limit patient **quality of life**, affecting daily activities and psychosocial relations

Unmet Medical Need

24%

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

2%

- Approximately 2% of AC patients have **severe conditions** and may be **steroid-dependent**

A Unique Opportunity

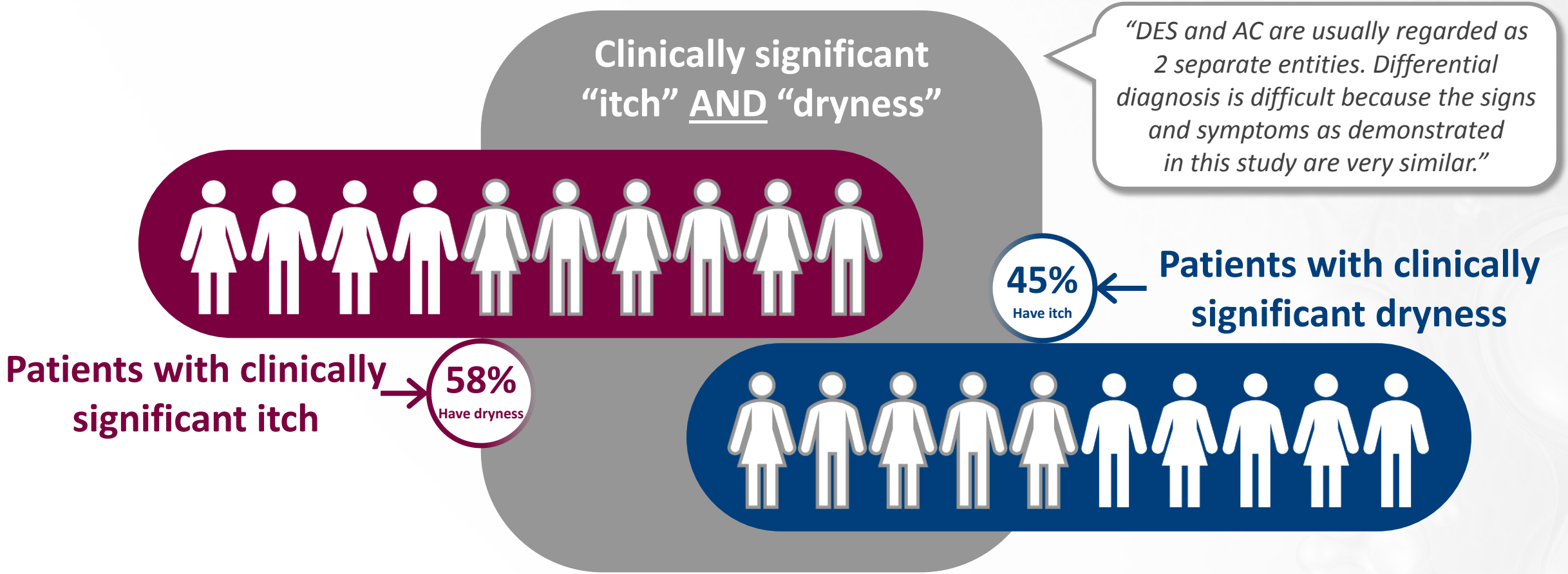
Reproxalap

- A **novel and differentiated approach** to treat AC
- **Mitigated post-histaminic allergy** at levels statistically superior to control in two Phase 2 clinical trials
- Phase 3 **results expected H2 2018 or early 2019**

Sources: "Allergic Conjunctivitis" by Hemran et al; www.uptodate.com, Dec. 2017; Sanchez et al; J Investig Allergol Clin Immunol Suppl. 2: 1-19, 2011; Leonardi et al, Clinical & Experimental Allergy, 45, 1118, 2015; Abelson et al, Allergy Clin Immunol115:118, 2005; Aldeyra 2017 US physician market research.

Allergic Conjunctivitis and Dry Eye Disease are Related, and Comorbidity is Common

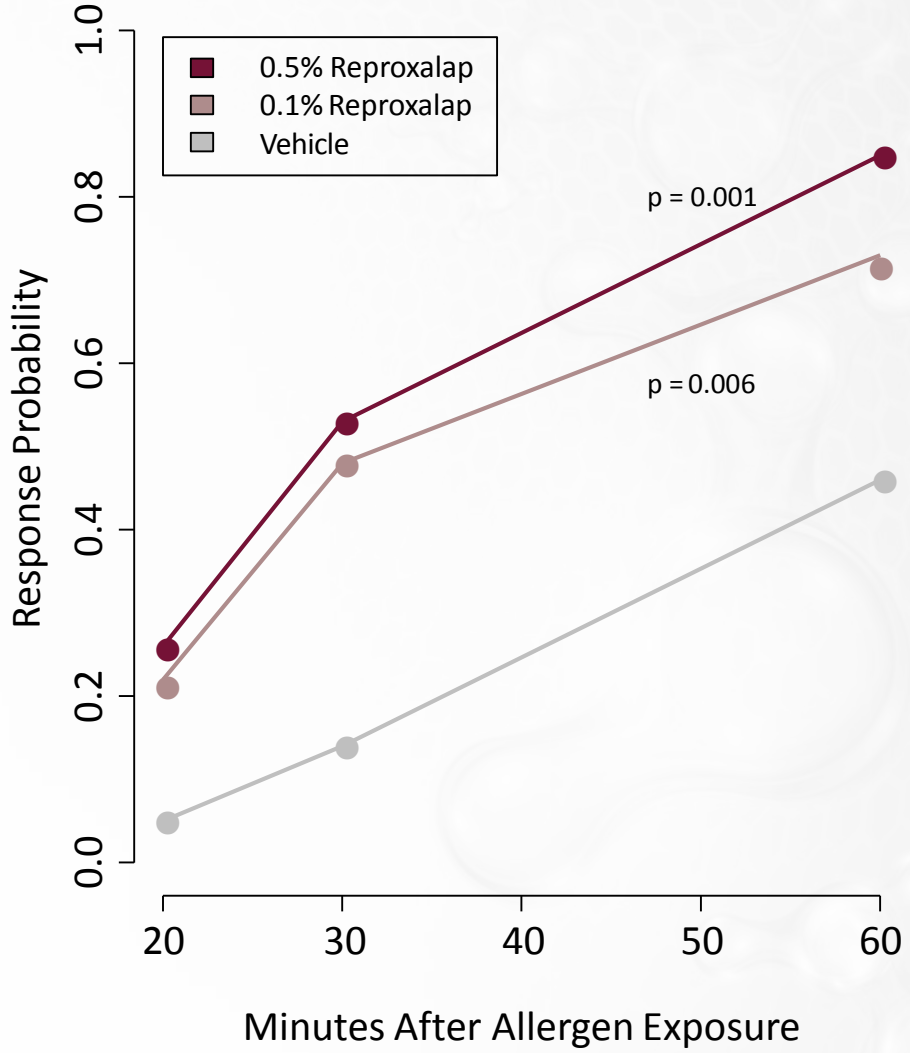
2011 Study of Allergic Conjunctivitis and Dry Eye Syndrome



Source: M.M. Hom et al. / Ann Allergy Asthma Immunol 108 (2012) 163–166.

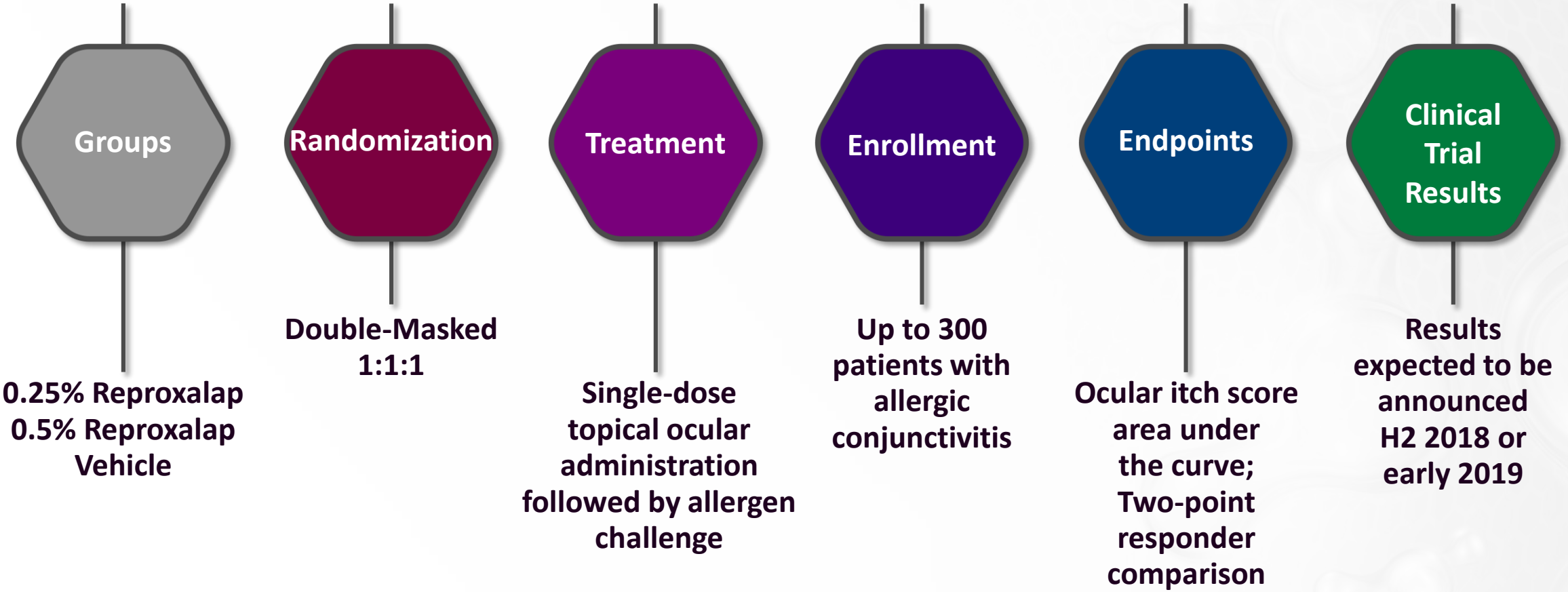
Reproxalap Groups Showed Higher and More Durable Clinical Responses vs. Vehicle Group in Phase 2b Clinical Trial

- On the ocular itch scale (range 0 – 4), clinical response was defined as improvement of two points from peak itch score.
- Probability of response statistically higher in 0.1% and 0.5% reproxalap groups vs. vehicle (p=0.006 and p=0.001, respectively).



ALLEVIATE Trial Design in Allergic Conjunctivitis

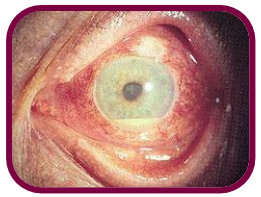
Phase 3 Clinical Trial Initiated April 2018



Further information can be found on www.clinicaltrials.gov: Trial #NCT03494504.

Noninfectious Anterior Uveitis: A Serious Disease That Can Cause Loss of Vision

Serious Inflammatory Disease



Noninfectious Anterior Uveitis (NAU) is a severe **autoimmune acute ocular inflammation**

Inflammatory cells in front of eye cause **pain**, **photophobia**, and **loss of vision**

150K annually

NAU is a **rare disease** with an estimated 150,000 U.S. patients per year

NAU has a big impact on **quality of life**, leading to loss of work and significant economic burden

Inadequate Current Therapy

Steroids

- Currently treated with **corticosteroids**, which may lead to **cataracts and glaucoma**

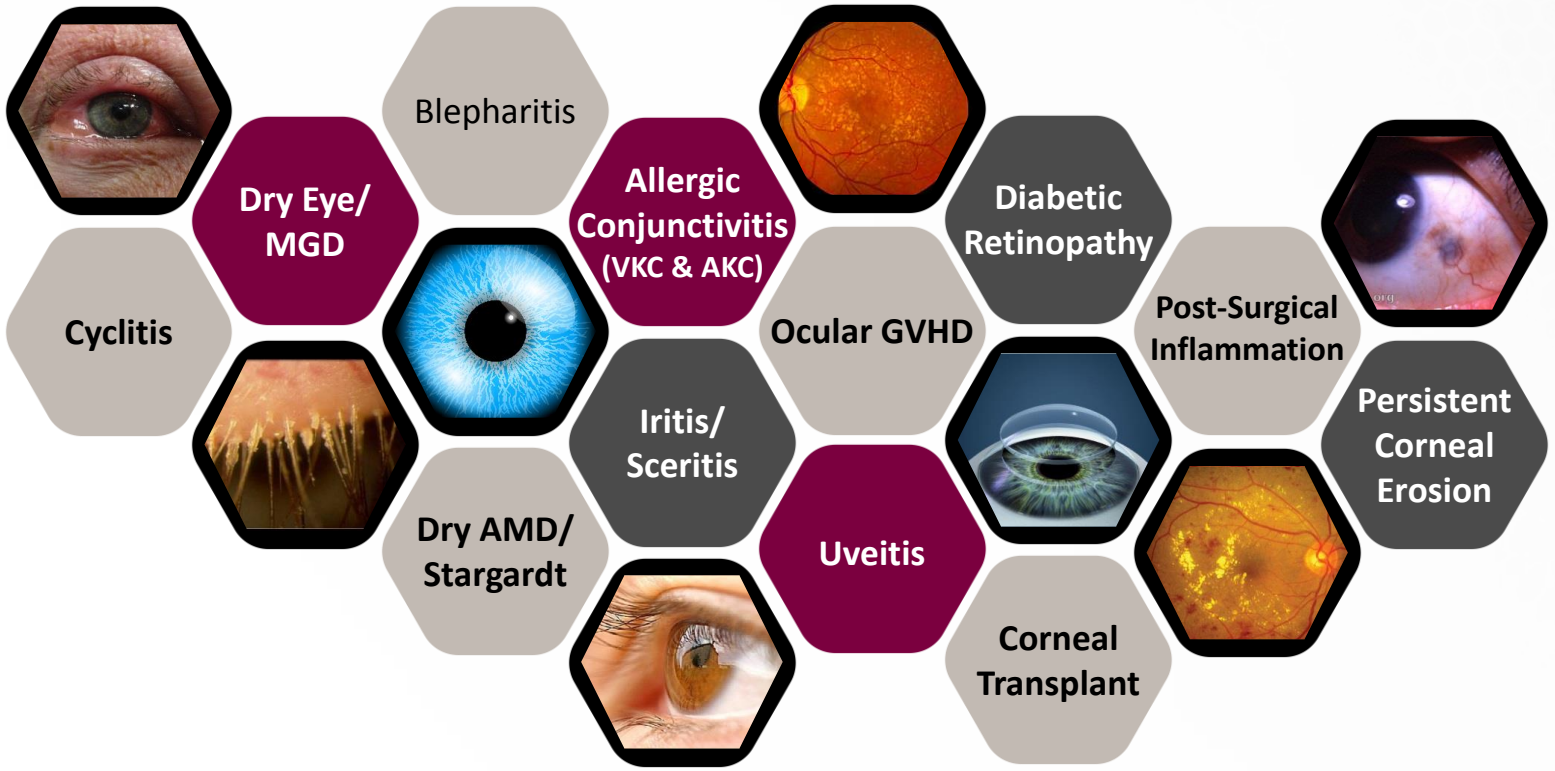
A Unique Opportunity

Reproxalap

- A **novel and differentiated approach** to treat NAU
- **Reduced anterior chamber cell count** in a randomized, vehicle controlled Phase 2 clinical trial, but **did not cause corticosteroid-related side effects**
- Phase 3 **results expected 2019**

Steroid Toxicity Creates Significant Demand for Novel Approaches

Widespread corticosteroid use:



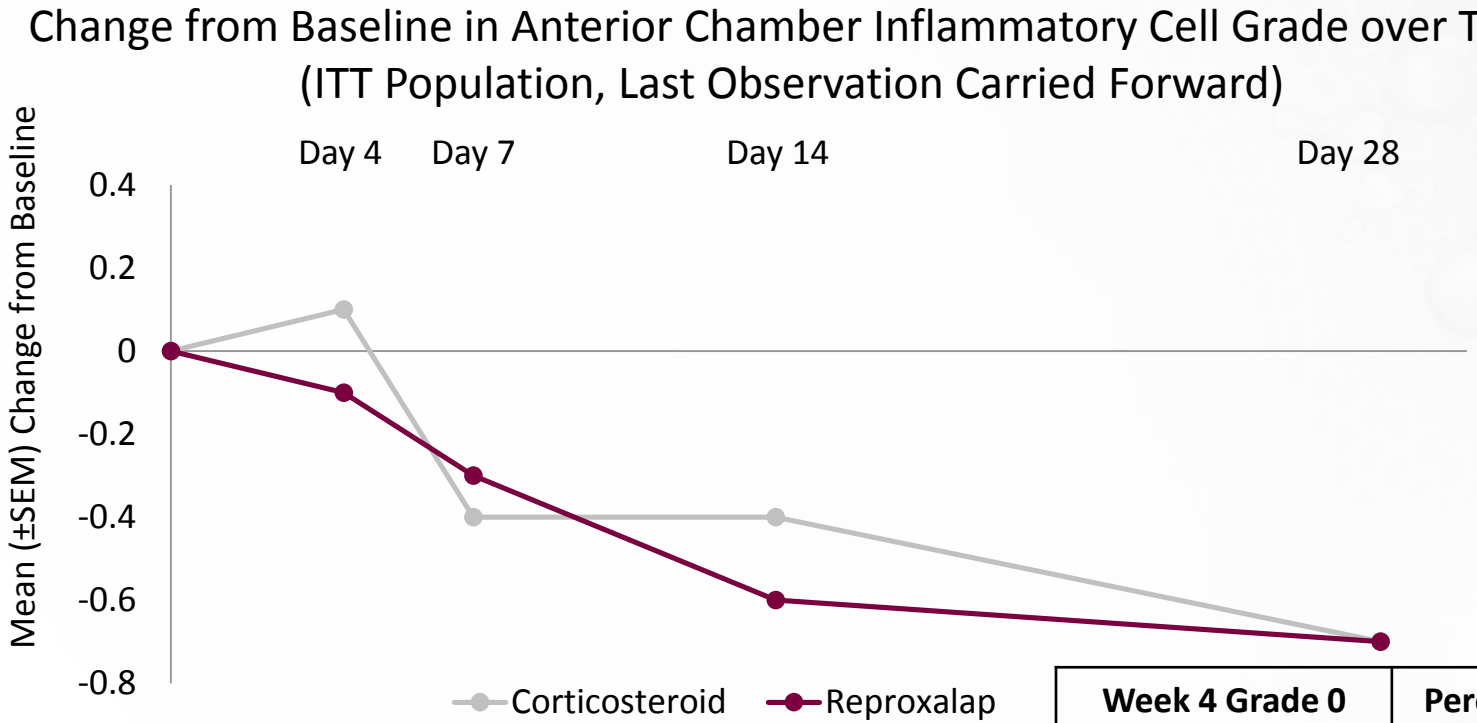
Potential corticosteroid side-effects:

- ❑ Blurred vision
- ❑ Cataracts
- ❑ Corneal ulceration
- ❑ Delayed wound healing
- ❑ Glaucoma
- ❑ Ocular infection
- ❑ Ptosis
- ❑ Redness
- ❑ Swelling
- ❑ Tear film instability

Despite toxicity, current topical ocular corticosteroid usage generates annual sales around $800M*

MGD: meibomian gland dysfunction, VKC: vernal keratoconjunctivitis, AKC: atopic keratoconjunctivitis, AMD: age-related macular degeneration.
Post-Surgical Inflammation includes inflammation resulting from corneal trauma, including cataract and refractive surgery.
*Based on 2016 IMS data; Neither reproxalap nor any of Aldeyra's other product candidates are currently in clinical development for any of the above diseases, other than dry eye disease, allergic conjunctivitis, and noninfectious anterior uveitis.

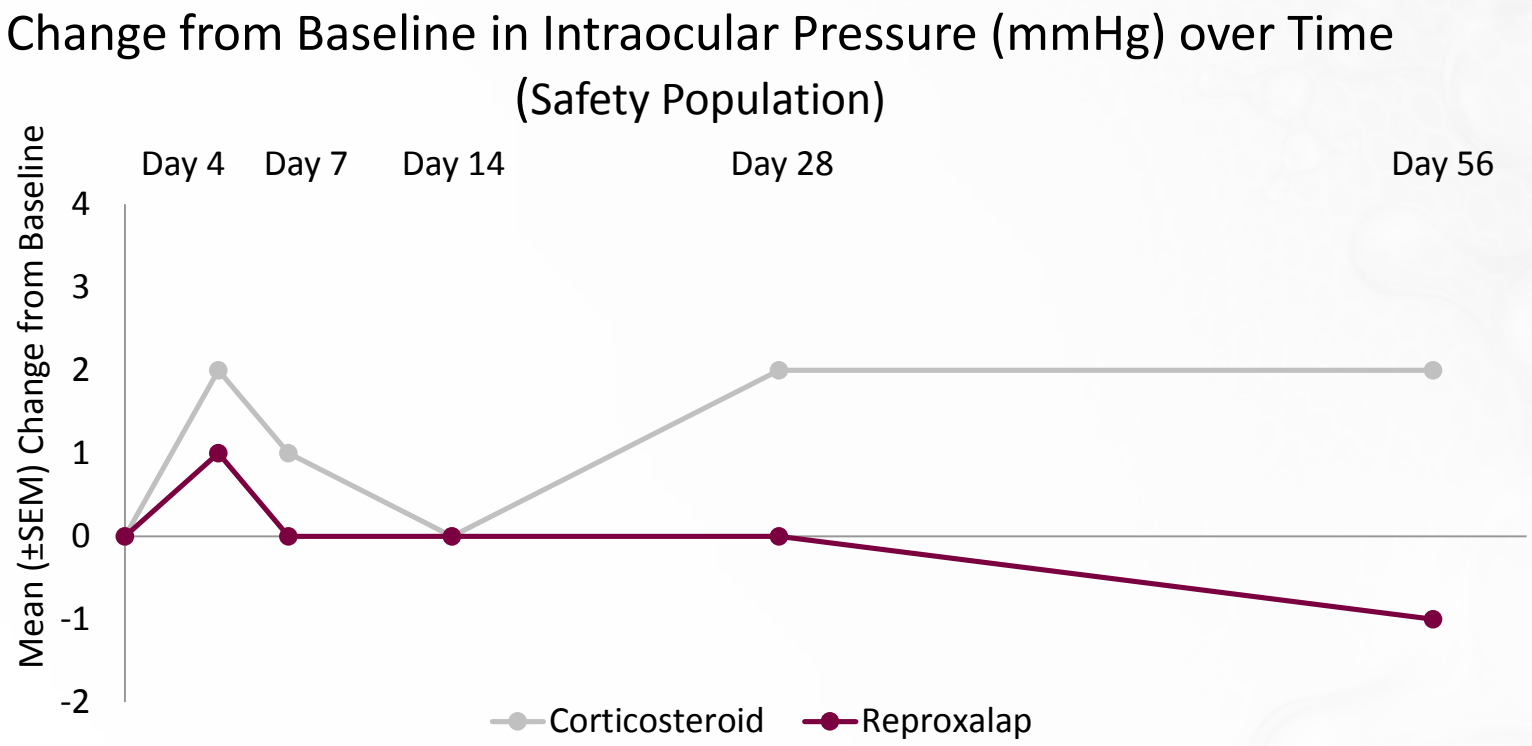
Reproxalap Reduced Inflammation in Noninfectious Anterior Uveitis Phase 2 Clinical Trial



Week 4 Grade 0	Percent of Subjects
Reproxalap	53% (8/15)
Corticosteroid	38% (5/13)

Reproxalap was statistically non-inferior to corticosteroid in a noninfectious anterior uveitis Phase 2 clinical trial.

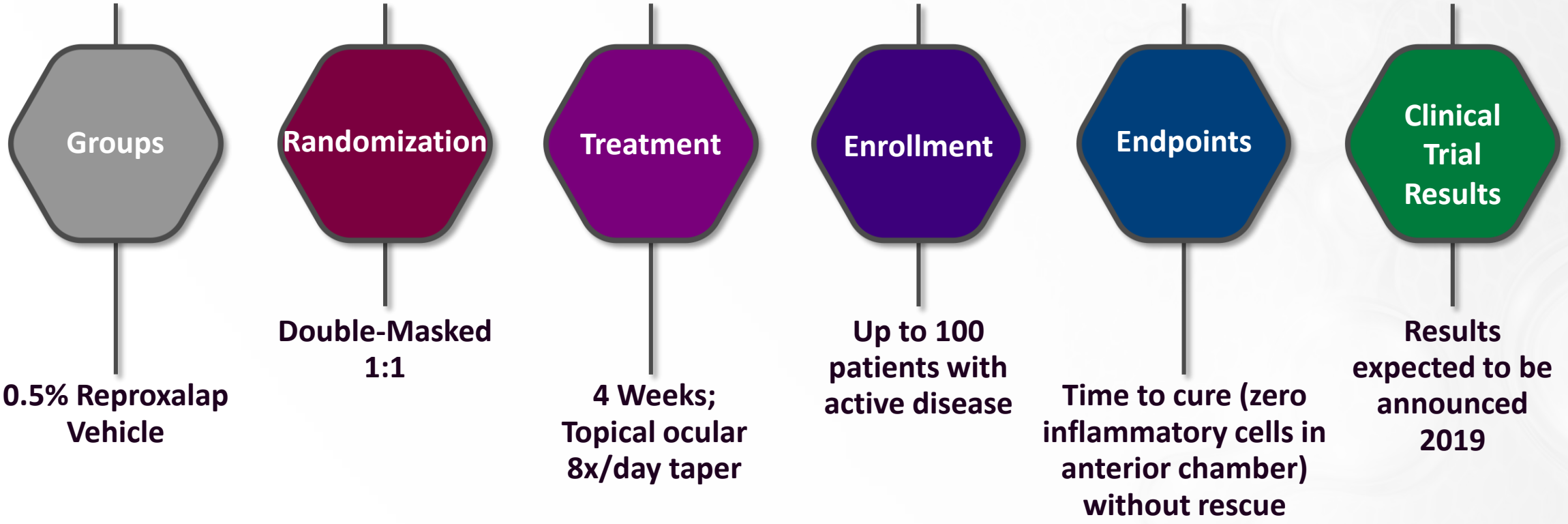
Reproxalap Did Not Increase Intraocular Pressure in Noninfectious Anterior Uveitis Phase 2 Clinical Trial



Increase in intraocular pressure, which may lead to glaucoma, is a major corticosteroid toxicity that is not apparent with reproxalap.

SOLACE Trial Design in Noninfectious Anterior Uveitis

Phase 3 Clinical Trial Initiated April 2017



Further information can be found on www.clinicaltrials.gov: Trial #NCT03131154.

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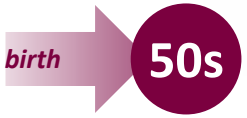
Reproxalap: Sjögren-Larsson Syndrome

Sjögren-Larsson Syndrome: A Rare Disease with No Approved Therapy

An Inborn Error of Metabolism

Sjögren-Larsson Syndrome (SLS) is **caused by an enzyme mutation** (Fatty Aldehyde Dehydrogenase), leading to high levels of RASP



SLS is **present at birth** and patients survive into their 50s

SLS is a **rare disease**, with ~1,000 SLS patients in the U.S. and a greater number in Europe[1]

Severe skin scaling, retinal disease, and neurological disorders significantly impact **SLS patient burden and quality of life**

Inadequate Current Therapy

- No FDA or EMA approved therapy that addresses the disease

A Unique Opportunity

Reproxalap (topical dermatologic)

- A **novel approach and potential lifelong therapy** to replace missing enzymatic activity in SLS
- **Granted U.S. orphan designation**
- **Significantly reduced SLS ichthyosis** in a randomized, vehicle controlled Phase 2 clinical trial
- Phase 3, Part 1 **results expected 2019**

RASP = Reactive Aldehydes Species

[1]Extrapolating from a Swedish estimate in addition to a U.S. genetic mutation analysis. It is generally assumed that there are approximately 1,000 SLS patients in the United States and a greater number of SLS patients in Europe.

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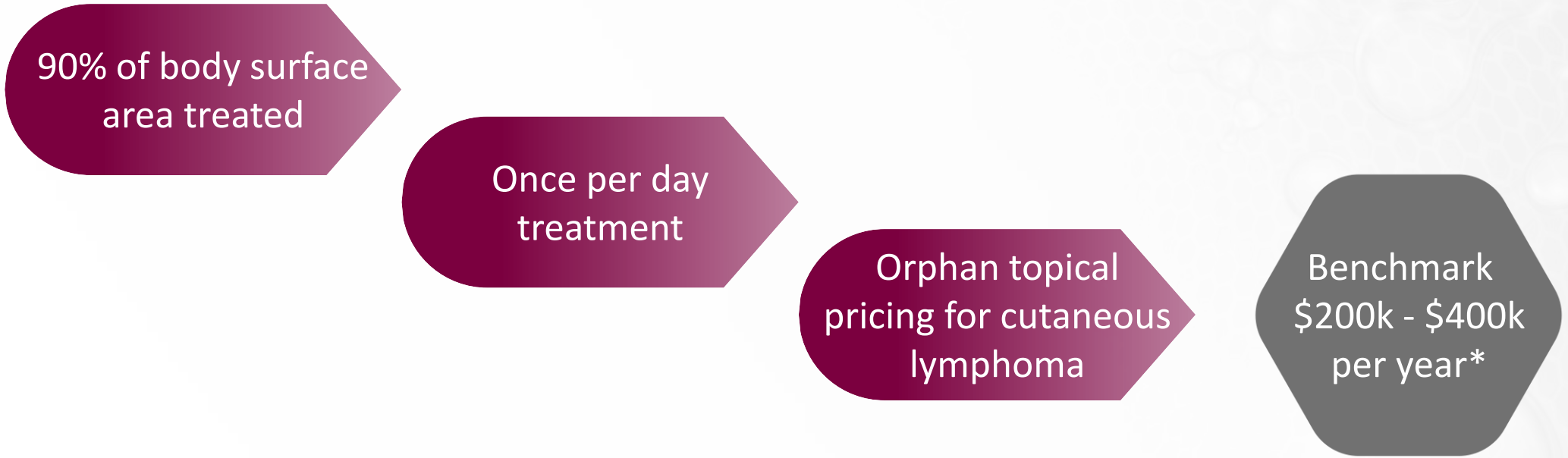
Potential Lifelong Therapy for Sjögren-Larsson Syndrome



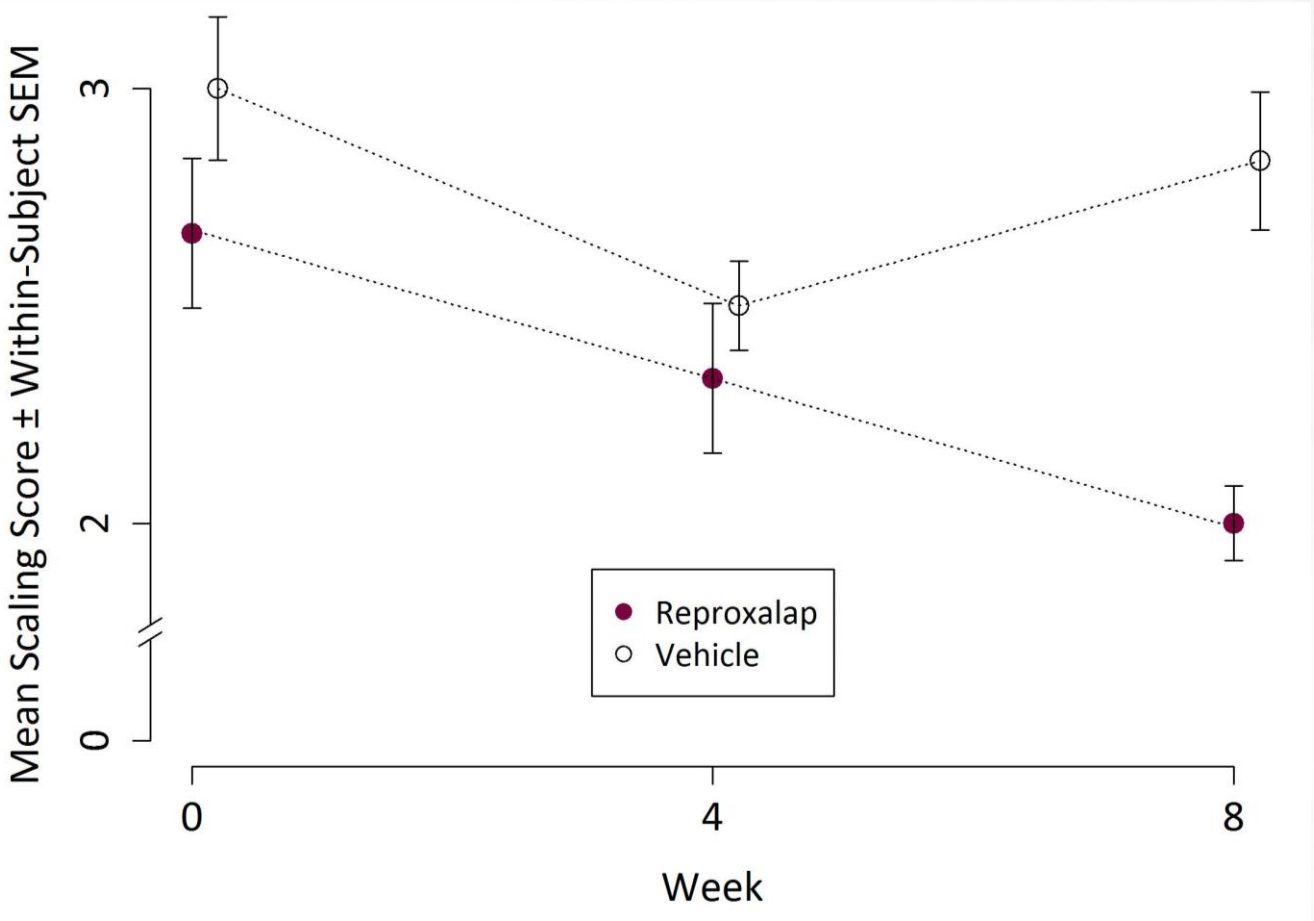
Estimated 0.4 births/100,000 (about 1,000 patients in U.S.)†
Total Estimated U.S. SLS market: ~$200M

*_Managed Care Qualitative Market Research of Reproxalap as a Potential Topically Applied Treatment for the Dermatologic Aspects of Sjögren-Larsson Syndrome_, CPD Research & Consulting; pricing pending clinical data, regulatory approval, regulatory discussions, payor negotiations, competition, potential legislative changes, and other factors.

†Extrapolating from a Swedish estimate in addition to a U.S. genetic mutation analysis. It is generally assumed that there are approximately 1,000 SLS patients in the United States and a greater number of SLS patients in Europe.

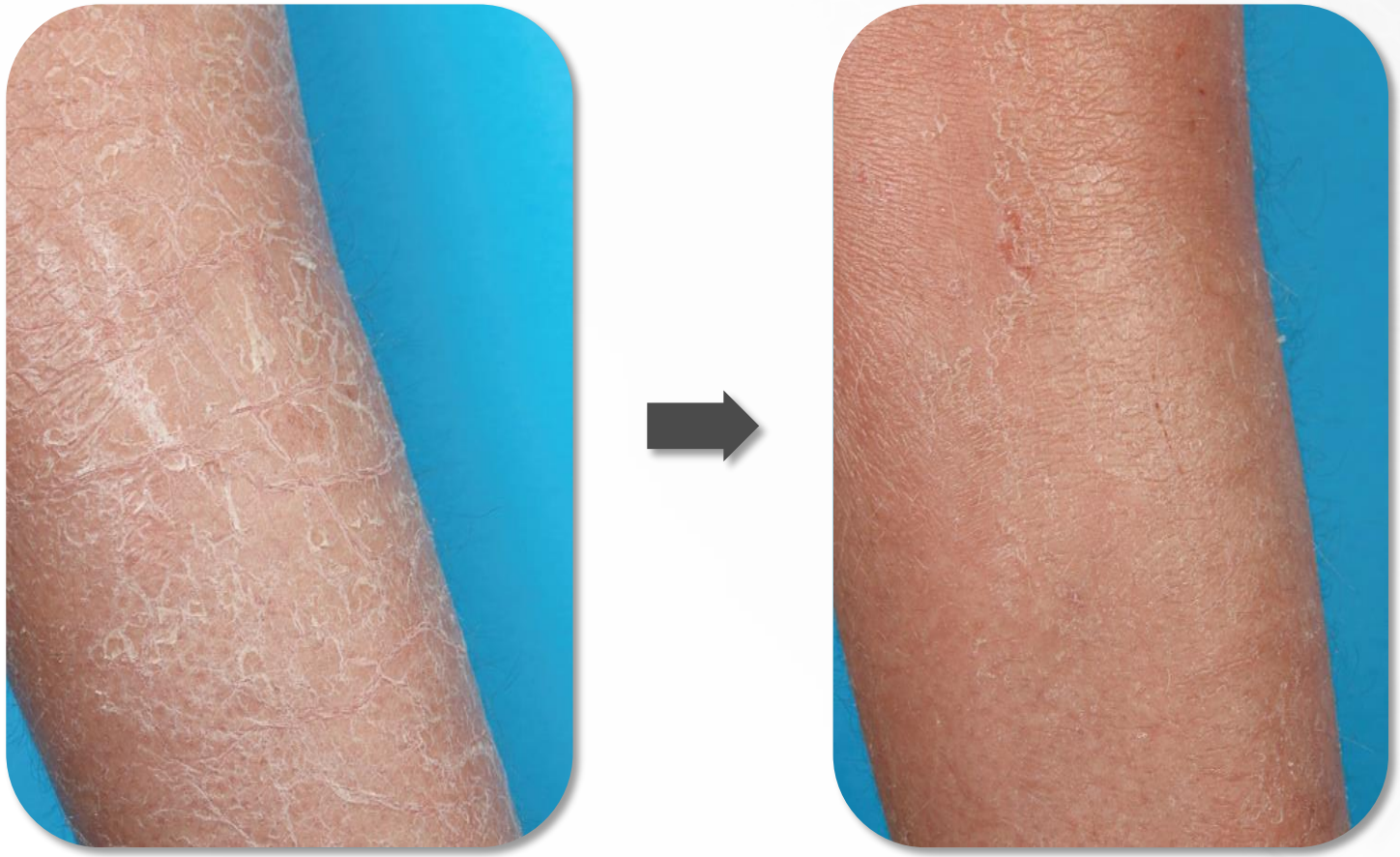
Every Drug-Treated Subject Showed Signs of Improvement in a Phase 2 Clinical Trial

Investigator Assessment of Ichthyosis



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

Representative Improvement in Reproxalap-Treated Patients in Phase 2 Clinical Trial

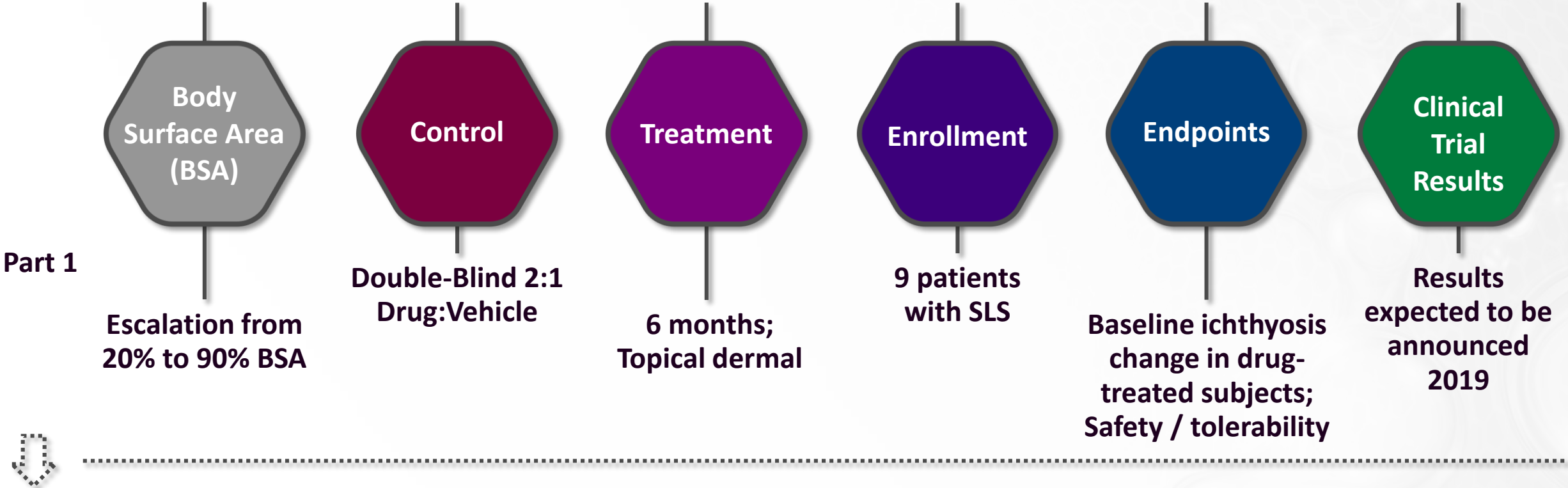


Before Treatment (Week 0)

After Treatment (Week 8)

RESET Trial Design in Sjögren-Larsson Syndrome

Phase 3 Part 1 Clinical Trial Initiated June 2018



Further information can be found on www.clinicaltrials.gov: Trial #NCT03445650.

Building The Future

Experienced Management Team and Board of Directors

Management Team

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

DOMAIN ASSOCIATES
ADERIS PHARMACEUTICALS[1]

Joshua Reed
Chief Financial Officer

Bristol-Myers Squibb
J.P.Morgan

David Clark, M.D.
Chief Medical Officer

Pfizer
gsk
WILSON THERAPEUTICS

David McMullin
SVP Corporate Development

Shire
gsk
NOVARTIS

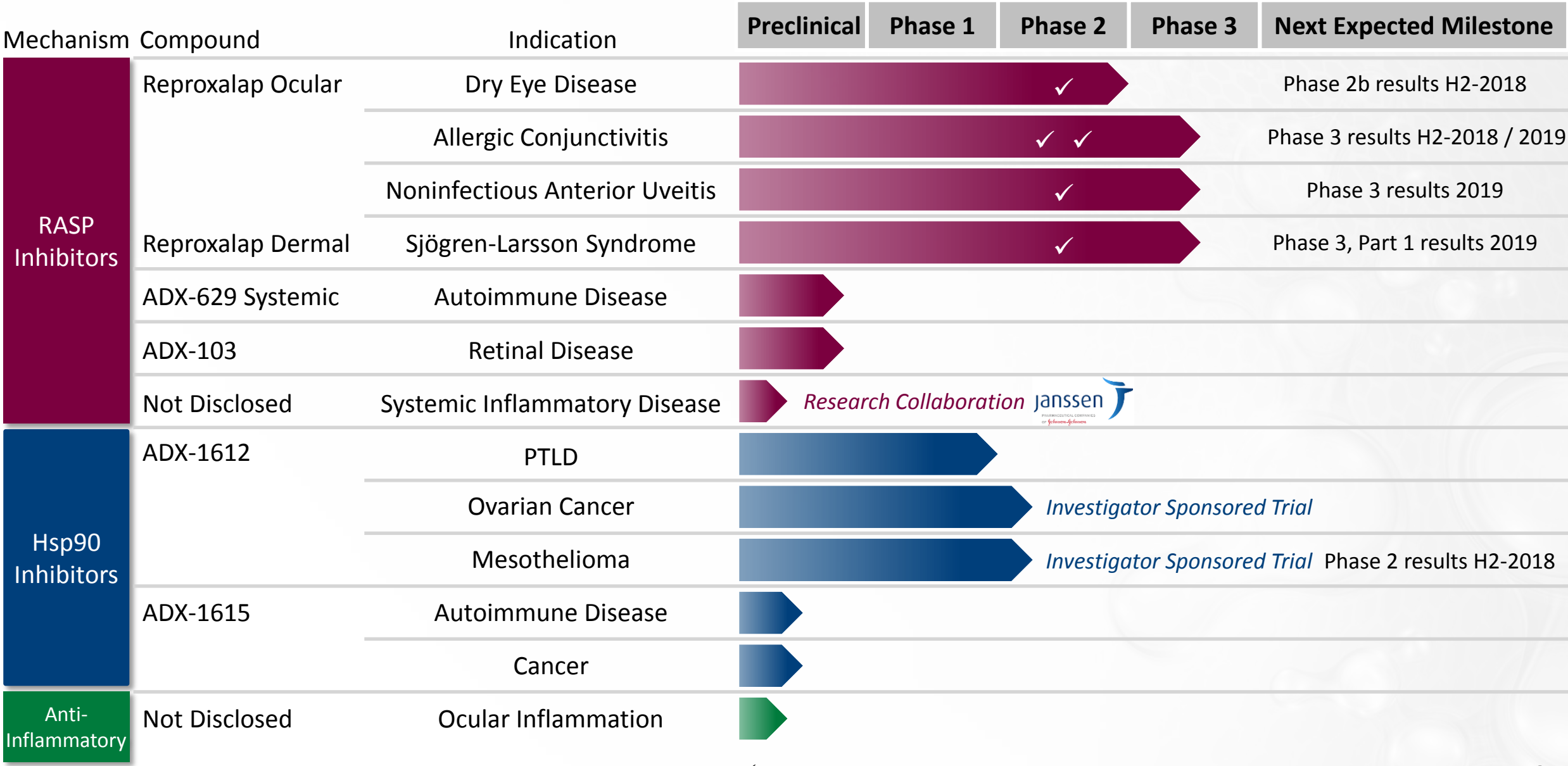
Board of Directors

Richard Douglas, Ph.D. CHAIRMAN	Former SVP Corporate Development at Genzyme
Gary Phillips, M.D.	CEO OrphoMed
Neal Walker, D.O.	CEO Aclaris Therapeutics
Ben Bronstein, M.D.	Former CEO Peptimmune[3]
Marty Joyce	Former CFO of Serono USA
Jesse Treu, Ph.D.	Domain Associates
Todd Brady, M.D., Ph.D.	CEO Aldeyra Therapeutics

1. Acquired by Schwarz/UCB

3. Acquired by Genzyme

Deep and Innovative Pipeline



RASP = Reactive Aldehydes Species
PTLD = Post-Transplant Lymphoproliferative Disorder

✓ = Positive Phase 2 clinical data reported in 2016 – 2017

2018 Progress and Near-Term Development Catalysts Support Path to Commercialization

H1 2018

- Initiated reproxalap **Phase 2b clinical trial in dry eye disease**
- Initiated reproxalap **ALLEVIATE trial in allergic conjunctivitis**
- Entered into **research collaboration with Johnson & Johnson Innovation** in systemic inflammatory diseases
- Disclosed **in-license of a Hsp90 inhibitor**
- Clinical sites initiated for reproxalap **RESET Part 1 trial in Sjögren-Larsson Syndrome**

H2 2018

- First patient enrolled in reproxalap **RESET Part 1 trial in Sjögren-Larsson Syndrome**

Anticipated Milestones*

- Reproxalap dry eye disease Phase 2b clinical trial results **H2-2018**
- ADX-1612 mesothelioma clinical trial results (investigator sponsored trial) **H2-2018**
- ADX-1612 ovarian cancer clinical trial initiation (investigator sponsored trial) **H2-2018**
- Reproxalap allergic conjunctivitis ALLEVIATE trial results **H2-2018/early 2019**

*Contingent on funding, regulatory review, and other factors.

2019 Expected Development Milestones: Novel Approaches to Address Immune-Mediated Disease

2019 Anticipated Milestones*

- Reproxalap noninfectious anterior uveitis SOLACE trial results **2019**
- Reproxalap Sjögren-Larsson Syndrome RESET Part 1 trial results **2019**
- ADX-629 Phase 1 clinical trial initiation **2019**
- ADX-629 NASH and/or IBD Phase 2a clinical trials initiation following Phase 1 clinical trial
- ADX-103 retinal disease Phase 1/2 clinical trial initiation **2019**
- ADX-1612 post-transplant lymphoproliferative disorder Phase 2 clinical trial initiation **2019**

*Contingent on funding, regulatory review, and other factors.