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CORPORATE PRESENTATION

Innovative Therapeutics for Immune-Mediated and Metabolic Diseases

April 2024

Nasdaq: ALDX

Disclaimers and Forward-Looking Statements

This presentation contains 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, statements regarding Aldeyra's future expectations, plans and prospects, including, without limitation, statements regarding: FDA agreement with the clinical development plan for reproxalap; the outcome and expected timing and results of the clinical development plan; the outcome and timing of the FDA's review, acceptance, and/or approval of a potential NDA resubmission for reproxalap and the adequacy of the data included in the potential NDA resubmission or the supplemental responses to the FDA; the potential for regulatory approval and commencement of commercialization of reproxalap and Aldeyra's goals as to timing; the potential profile and benefit of reproxalap in dry eye disease and allergic conjunctivitis and its other product candidates in the indications for which they are developed; the goals, opportunity and potential for reproxalap and its other product candidates, anticipated clinical or regulatory milestones for ADX-2191, ADX-246, ADX-248, and ADX-629, including expectations regarding the results of scheduled FDA meetings and discussions, clinical trial initiations and completions, and the timing and nature of NDA or other submissions to the FDA; Aldeyra's business, research, development and regulatory plans or expectations; political, economic, legal, social and health risks that may affect Aldeyra's business or the global economy; the structure, timing and success of Aldeyra's planned or pending clinical trials; and expected milestones, market sizing, pricing and reimbursement, competitive position, regulatory matters, industry environment and potential growth opportunities, among other things. The results of earlier preclinical or clinical trials may not be predictive of future results. 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," "on track," "scheduled," "target," "design," "estimate," "predict," "contemplates," "likely," "potential," "continue," "ongoing," "aim," "plan," or the negative of these terms, and similar expressions intended to identify forward-looking statements.

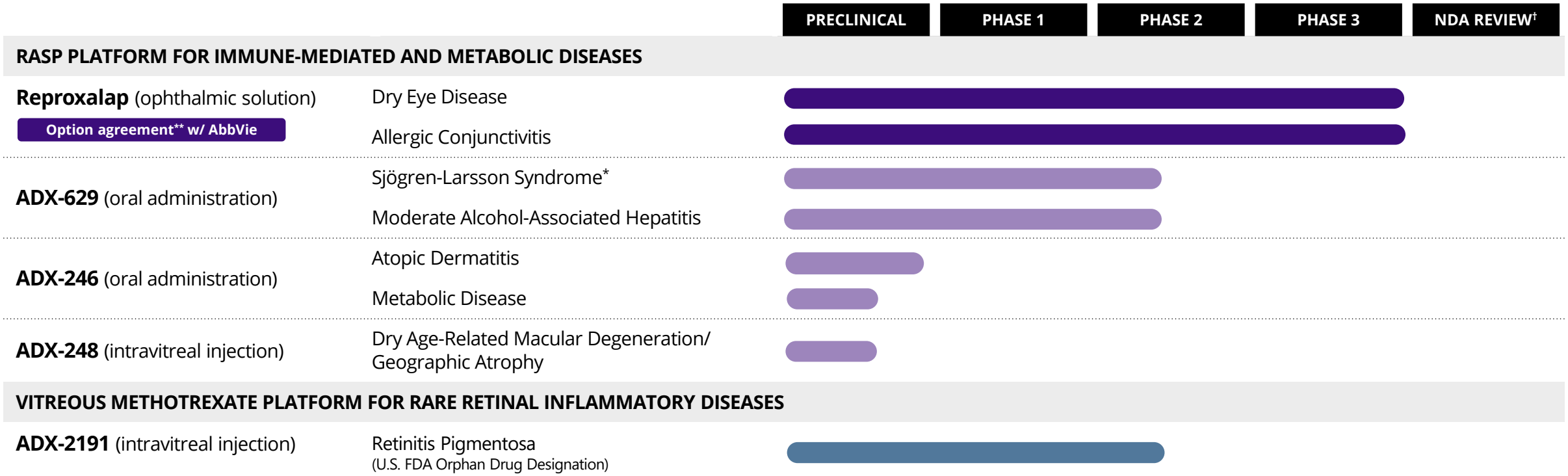
Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause Aldeyra's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These 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 of, and clinical and regulatory plans or expectations for Aldeyra's investigational new drugs (including reproxalap, ADX-2191, ADX-246, ADX-248, and ADX-629), and systems-based approaches, later developments with the FDA that may be inconsistent with Aldeyra's expectations and beliefs, including the risk that the results from earlier clinical trials, portions of clinical trials, or pooled clinical data may not accurately predict results of subsequent trials or the remainder of a clinical trial for the same or different indications, inconsistent expectations regarding FDA acceptance and review of the company's filings and submitted data sets, and Aldeyra's continuing or post-hoc 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 plans and timelines may be subject to adjustment depending on funding, recruitment rate, regulatory review, which regulatory review timeline may be flexible and subject to change based on the regulator's workload and other potential review issues, preclinical and clinical results, regulatory developments in the United States and other countries, and other factors any of which could result in changes to Aldeyra's development plans and programs or delay the initiation, enrolment, completion, or reporting of clinical trials.

In addition to the risks described above and in Aldeyra's other filings with the SEC, other unknown or unpredictable factors also could affect Aldeyra's results. No forward-looking statements can be guaranteed, and actual results may differ materially from such statements. The information in this presentation is provided only as of April 19, 2024, and Aldeyra undertakes no obligation to update any forward-looking statements contained in this presentation on account of new information, future events, or otherwise, except as required by law.

ALDEYRA'S MISSION is to discover innovative therapies that improve the lives of patients who suffer from immune-mediated and metabolic diseases.

OUR APPROACH is to develop pharmaceuticals that modulate immunological and metabolic systems, instead of directly inhibiting or activating single protein targets, with the goal of optimizing multiple pathways at once while minimizing toxicity.

Aldeyra Is a Well-Capitalized Biotechnology Company with a Broad Immunology and Metabolic Pipeline



As of 12/31/2023, cash and cash equivalents were $142.8M, which Aldeyra believes will be sufficient to fund the Company beyond 2026.‡

†Regulatory review timelines are flexible and subject to change based on the regulator's workload and other potential review issues. ‡Company guidance as of March 7, 2024; includes continued early and late-stage development of our product candidates in immune-mediated and metabolic diseases. Guidance does not include any potential licensing or product revenue associated with reproxalap. *Investigator sponsored **Option agreement outlined on slide 14. NDA = New Drug Application.

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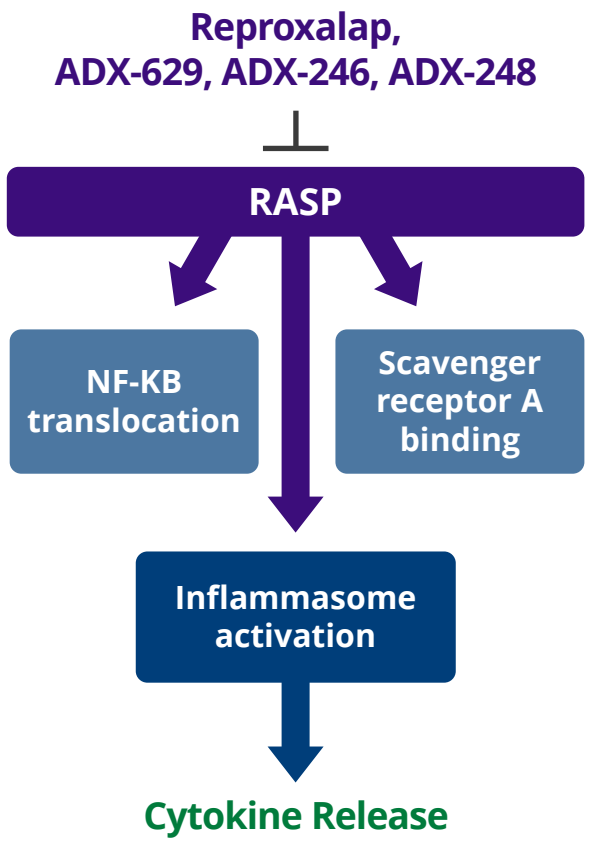
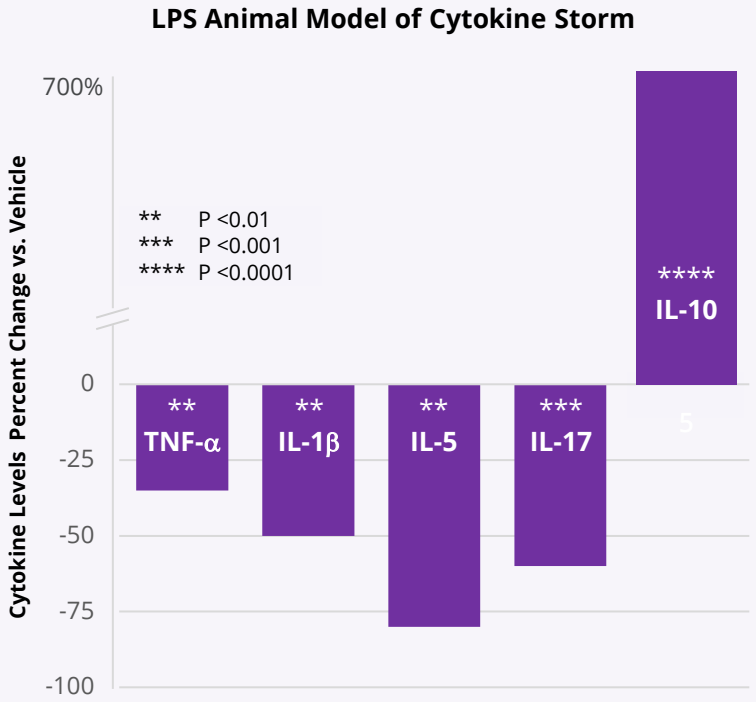
Modulating RASP – A First-in-Class, Systems-Based Therapeutic Approach

Aldeyra is the Leading Developer of RASP Modulators: A Novel Approach Supported by Late-Stage Trials



Preclinical Broad-Based Cytokine Reduction

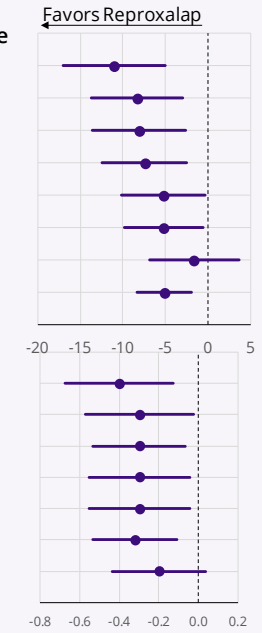


Broad-Based Symptom Reduction

RENEW-Part 1 Phase 3 Dry Eye Disease Trial

Symptom Treatment Difference† (Reproxalap-Vehicle) Weeks 2 -12

0-100 Ocular Symptom Scales	**P-value**
VAS: Ocular Dryness (Co-Primary)	0.0004
VAS: Eye Discomfort	0.0025
VAS: Photophobia	0.0041
VAS: Foreign Body Sensation	0.0035
VAS: Itching	0.0346
VAS: Pain	0.0268
VAS: Burning/Stinging	NS
OSDI (Total)	0.0020
0-4 & 0-5 Ocular Symptom Scales	
OD4S: Grittiness	0.0025
OD4S: Dryness	0.0134
OD4S: Ocular Discomfort	0.0268
OD4S: Burning	0.0306
OD4S: Stinging	0.0239
CAC Ocular Itching Scale	0.0034
Ocular Discomfort Scale	NS



†Treatment difference of induction-maintenance dosing, defined as the difference between the changes from baseline for the evaluated drug minus vehicle (least squares mean difference ± 95% confidence interval). Ocular Dryness Score co-primary endpoint assessed in pre-specified patient population having an OD4S dryness baseline score of ≥ 3 (N=170). Sources: Cullen, et al. The Small Molecule Aldehyde Trap NS2 Exhibits Potent Anti-Inflammatory Activity in Three Murine Models of Inflammation [abstract]. In: The Journal of Allergy and Clinical Immunology. Volume 135, Issue 2, AB384, Feb 2015; Reproxalap RENEW-Part 1 clinical trial results. RASP = reactive aldehyde species. LPS = lipopolysaccharide. VAS = visual analog scale. OSDI = Ocular Surface Disease Index. NS = not significant. OD4SQ = Ocular Discomfort & 4-Symptom Questionnaire. CAC = conjunctival allergen challenge.

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The Activity of Lead RASP Modulator Reproxalap is Supported by Marquee Peer-Reviewed Publications

Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials.

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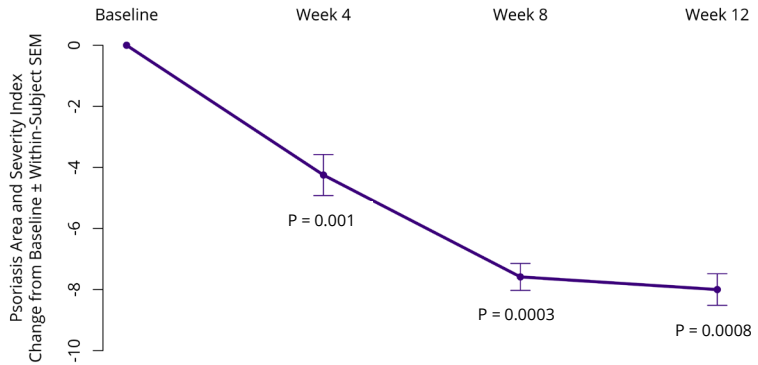
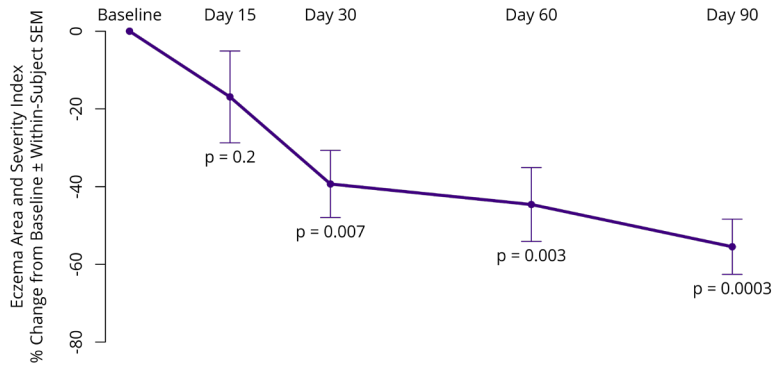
ADX-629, a First-in-Class Orally Administered RASP Modulator, Has Demonstrated Activity in Phase 2 Clinical Trials

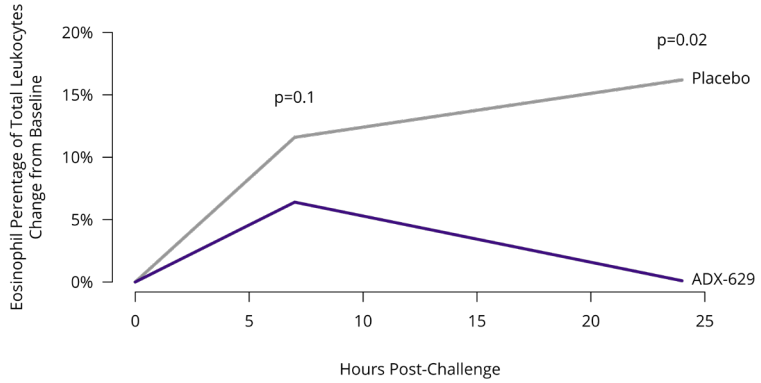
Autoimmune Disease: Psoriasis



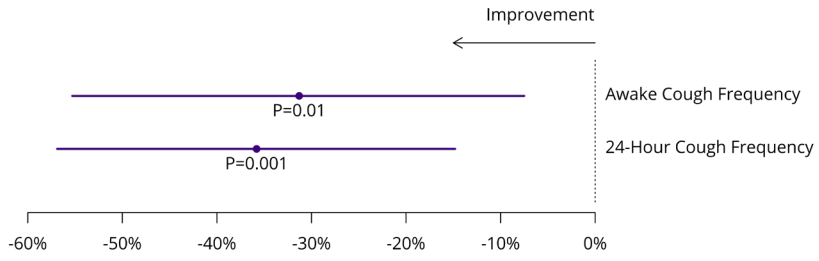
Autoimmune Disease: Atopic Dermatitis



Allergic Inflammation: Asthma



Idiopathic Inflammation: Chronic Cough



ADX-629 Placebo-Adjusted Reduction from Baseline ± 95% CI

ADX-629 is an investigational drug candidate. SEM = standard error of measurement.

ADX-629 Data Suggest Potential for Next-Generation Investigational RASP Modulators ADX-246 and ADX-248

ADX-246

Oral Administration

… designed to treat immune-mediated and metabolic diseases thought to be caused or exacerbated by RASP.

Pre-clinical studies of ADX-246 demonstrated high affinity for RASP and activity following systemic administration in animal models of sepsis, hepatitis, and atopic dermatitis.

ADX-248

Intravitreal Injection

… designed to reduce inflammation and toxic metabolite formation associated with geographic atrophy, a severe form of macular degeneration.

Preclinical studies of ADX-248 demonstrated high affinity for binding retinaldehyde, a key RASP involved in retinal inflammation and the formation of toxic metabolites that accumulate in the retina.

ADX-629 is an investigational drug candidate.

Reproxalap Represents a Novel Potential Therapeutic Approach in Dry Eye Disease with Rapid Activity in Clinical Trials

Potential advantages for patients and healthcare providers could effect a paradigm shift relative to standard of care.

Rapid and sustained symptom improvement

Broad symptomatic activity

Acute reduction of ocular redness

Dry Eye Disease Afflicts 39 Million or More Adults in the U.S.[†]

[†]Company estimates and Am J Ophthalmol. 2014;157(4):799-806. Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials.

Contingent on Positive Results from Planned Dry Eye Disease Symptom Trial, NDA Resubmission Expected in Second Half 2024

- Following review of New Drug Application for reproxalap in dry eye disease, the U.S. Food and Drug Administration (FDA) issued a Complete Response Letter stating that an additional trial is required to demonstrate activity in symptoms.

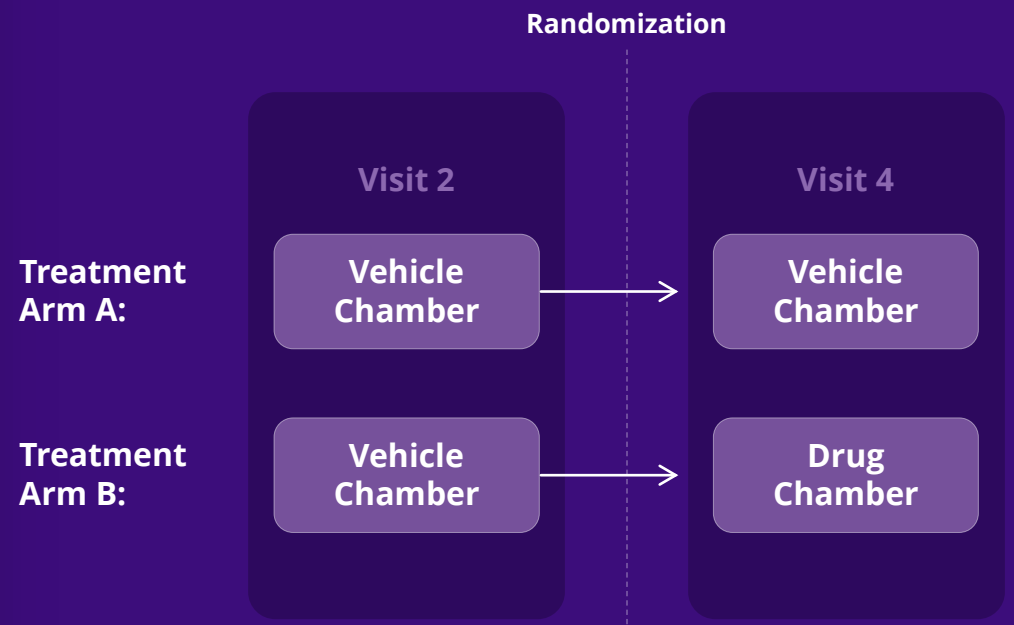
- Based on discussions with the FDA, Aldeyra intends to initiate a dry eye chamber clinical trial in the first half of 2024.

- Proposed clinical trial top-line results and potential NDA resubmission are expected in the second half of 2024, pending clinical trial results, feedback from ongoing FDA discussions, and other factors.†

Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials. †Regulatory review and discussion timelines are flexible and subject to change based on the regulator's workload and other potential review issues. The timing of clinical trials depends, in part, on the availability of clinical research facilities and staffing, the ability to recruit patients, and the number of patients in the trial.

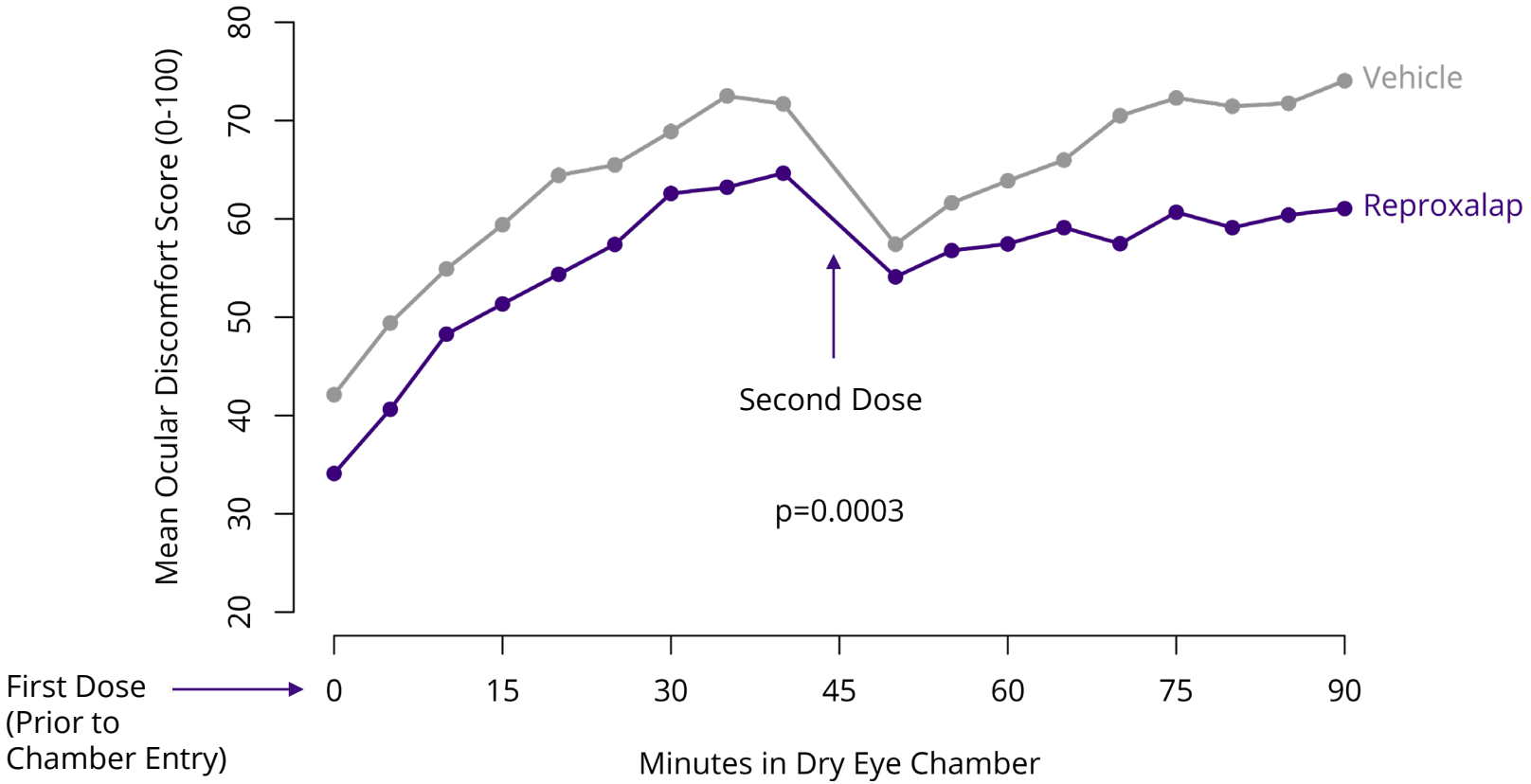
Planned Phase 3 Clinical Trial of Reproxalap in a Dry Eye Chamber†

Design	• Randomized, double-masked, vehicle-controlled dry eye chamber challenge
Dosing	• Visit 1: Medical screening • Visit 2: Vehicle dry eye chamber (dosing just before and 50 minutes after entry) • Visit 3: Four doses of randomized treatment (reproxalap or vehicle) • Visit 4: Randomized dry eye chamber (dosing just before and 50 minutes after entry)
Size	~100 dry eye disease patients
Primary Endpoint	Ocular discomfort score
Other Endpoints	Safety



†The timing of clinical trials depends, in part, on the availability of clinical research facilities and staffing, the ability to recruit patients, and the number of patients in the trial.

Based on Pooled Data from Four Dry Eye Chamber Trials, Ocular Discomfort Score was Lower with Reproxalap than with Vehicle



Ocular discomfort data are derived from four previously completed dry eye chamber clinical trials of reproxalap vs. vehicle, encompassing approximately 110 patients and incorporating trial conduct and statistical analysis amendments.

Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials.

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Aldeyra has Entered into an Exclusive Option Agreement with AbbVie Inc. for License to Develop and Commercialize Reproxalap

Key Terms of Reproxalap Option Agreement

Option for AbbVie to obtain:

- Co-exclusive license to develop, manufacture, and commercialize reproxalap in the U.S.
- Exclusive license to develop, manufacture, and commercialize outside the U.S.

Financial terms of license if option exercised:

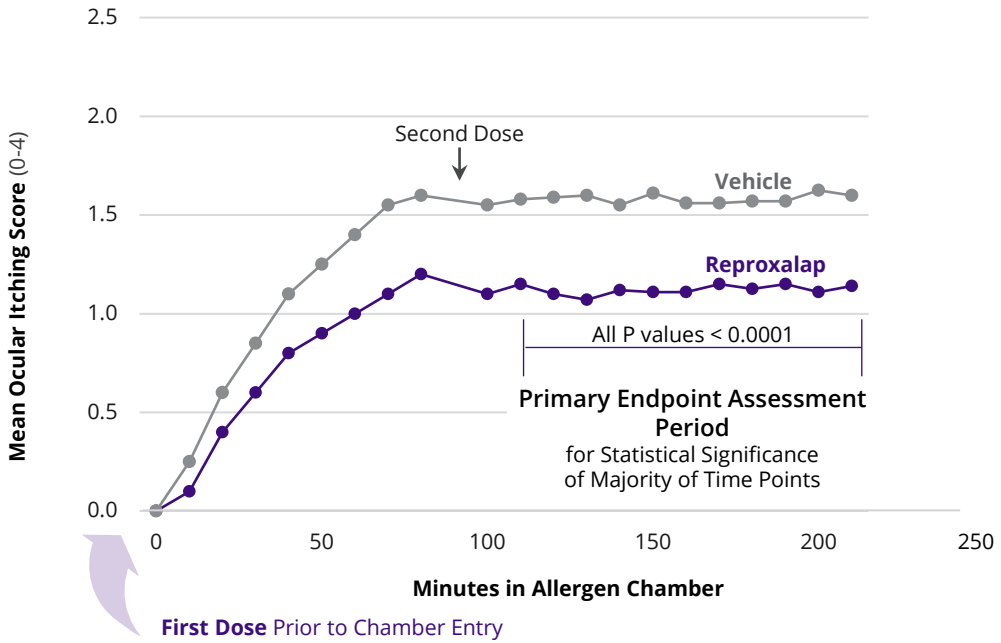
- Upfront payment of $100 million less option fees
- $100 million milestone payment upon U.S. FDA approval in dry eye disease
- $200 million in additional regulatory and commercial milestones
- Profit and loss share (60% for AbbVie/40% for Aldeyra) from commercialization in U.S.
- Tiered royalties on net sales outside of U.S.

Source: Aldeyra Therapeutics, Inc.'s Current Reports on Form 8-K filed with the Securities and Exchange Commission on November 1, 2023, and December 21, 2023, respectively. The option terminates on the earlier of (a) the 10th business day after the date on which Aldeyra received approval from the U.S. FDA of the NDA for reproxalap in dry eye disease and (b) the date that is 18 months after October 31, 2023. Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials.

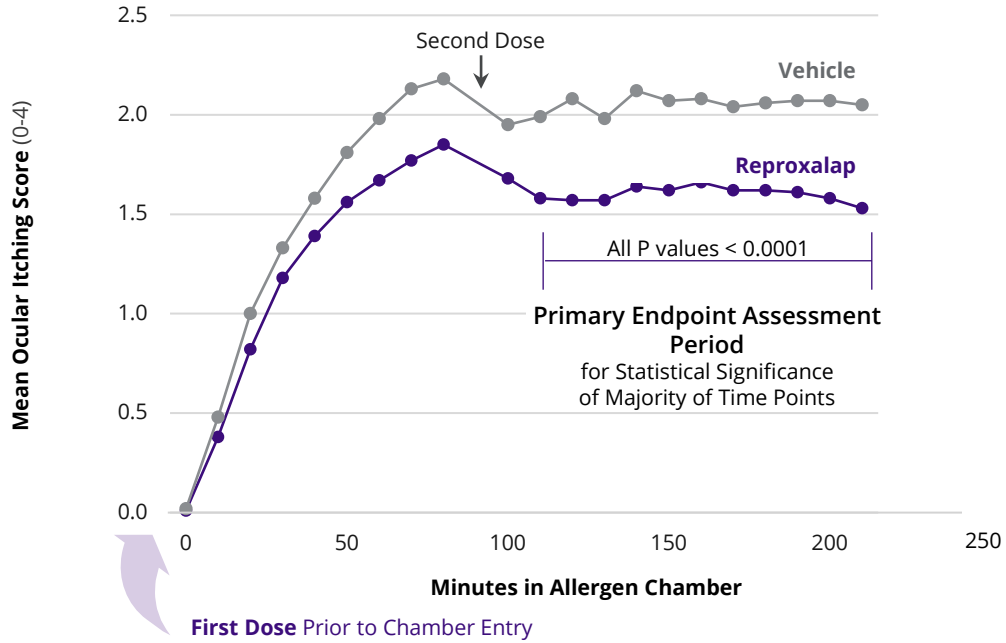
Aldeyra Believes Efficacy Requirements Have Been Met for Potential NDA Submission of Reproxalap for Allergic Conjunctivitis†

The Phase 3 INVIGORATE Allergen Chamber Trials
Primary Endpoint of Patient-Reported Ocular Itching

INVIGORATE



INVIGORATE-2



†NDA submission requirements depend, in part, on clinical results, enrollment, and regulatory feedback. Source: INVIGORATE and INVIGORATE-2 clinical trial results. Topical ocular reproxalap is an investigational new drug candidate that has been studied in more than 2,400 patients with no observed safety concerns; mild and transient instillation site irritation is the most commonly reported adverse event in clinical trials.

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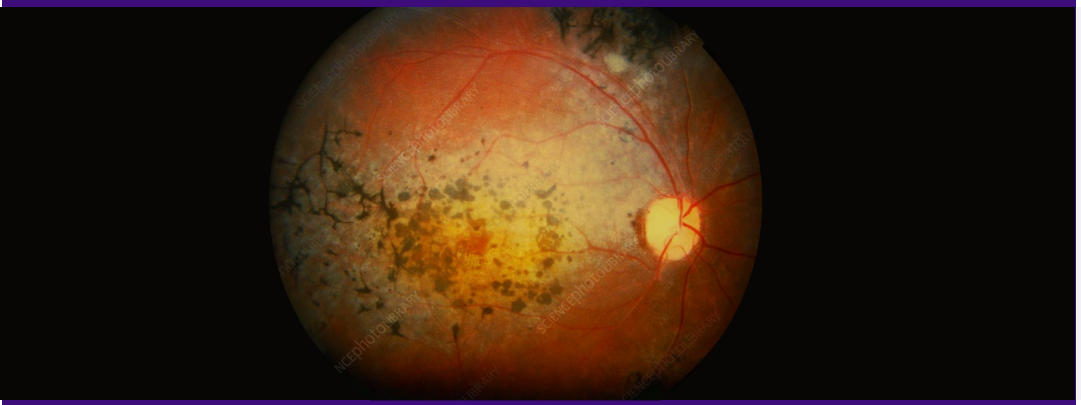
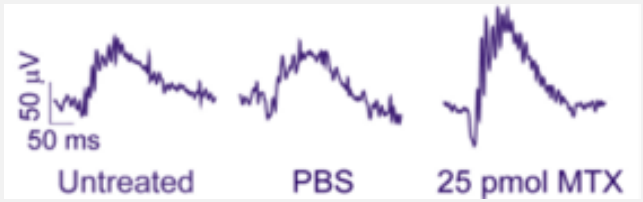
ADX-2191: A Novel Approach for the Treatment of Retinitis Pigmentosa

ADX-2191 Has the Potential to be the First Approved Drug for Retinitis Pigmentosa, a Clinical Group of Rare Genetic Eye Diseases

Retinitis pigmentosa refers to a group of inherited retinal diseases characterized by cell death and loss of vision.



- Retinitis pigmentosa **affects more than 1 million people** worldwide. Mutations leading to rhodopsin misfolding account for approximately one-third of cases.
- Preclinical evidence suggests that methotrexate may be active in rhodopsin misfolding mutations by facilitating degradation of mutated rhodopsin.
- **U.S. FDA Orphan Drug Designation** received August 2021



Preclinical electroretinographic evidence in a P23H rhodopsin mutation mouse model of retinitis pigmentosa **suggests that methotrexate improves retinal function.**

ADX-2191 (methotrexate injection, USP) for intravitreal administration is an investigational drug candidate. Sources: Aldeyra internal estimates; FASEB J. 2020 Aug;34(8):10146-10167. PBS = phosphate-buffered saline; MTX = methotrexate.

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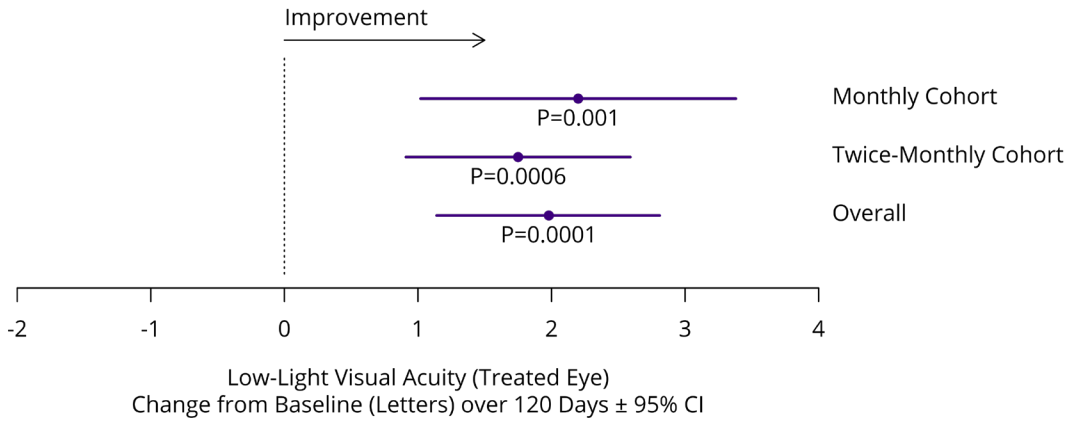
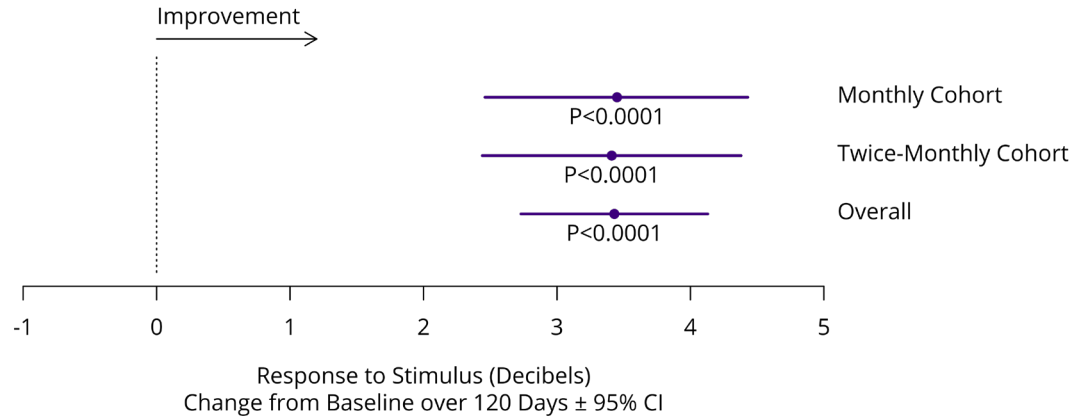
In the Phase 2 Retinitis Pigmentosa Clinical Trial, Retinal Sensitivity Improved from Baseline

Visual Acuity in Dim Light



Dark Adapted Sensitivity to Green Light



Phase 2 clinical trial was performed in eight retinitis pigmentosa patients with rhodopsin misfolding mutations: four patients received monthly injections for three months; four patients received twice-monthly injections for three months. Dark adapted chromatic perimetry used to assess sensitivity to green light stimuli.

Corporate Information

Experienced Management Team and Board of Directors

MANAGEMENT TEAM

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

Bruce Greenberg, C.P.A.
SVP of Finance and Interim Chief Financial Officer

Stephen Machatha, Ph.D.
Chief Development Officer

BOARD OF DIRECTORS

Richard Douglas, Ph.D. Chairman	Former SVP Corporate Development at Genzyme
Ben Bronstein, M.D.	Former CEO Peptimmune[6]
Marty Joyce	Former CFO of Serono USA
Nancy Miller-Rich	Former SVP BD&L and Commercial Strategy at Merck
Gary Phillips, M.D.	CBO Anaveon AG
Neal Walker, D.O.	Chairman Aclaris Therapeutics
Todd Brady, M.D., Ph.D.	CEO Aldeyra Therapeutics

1. Acquired by Xanthus/Antisoma. 2. Acquired by Schwarz/UCB. 3. Acquired by Ligand. 4. Acquired by Merck. 5. Acquired by Alexion. 6. Acquired by Genzyme.

Clinical and Regulatory Milestones

Reproxalap

- [x] **Allergic Conjunctivitis**
  Positive Phase 3 INVIGORATE 2 trial top-line results announced
- [ ] **Dry Eye Disease**
  Proposed clinical trial top-line results and potential NDA resubmission expected in second half of 2024, pending clinical trial results, feedback from ongoing FDA discussions, and other factors[† ‡]

ADX-629

- [x] **Sjögren-Larsson Syndrome**
  Phase 2 clinical trial top-line results announced*
- [ ] **Moderate Alcohol-Associated Hepatitis**
  Open-label Phase 2 clinical trial results expected H2 2024[‡]

ADX-246

- [ ] **Atopic Dermatitis**
  Phase 1 clinical trial initiation expected in H1 2024[‡]
- [x] **Metabolic Disease**
  Pre-clinical program initiated

ADX-248

- [ ] **Dry Age-Related Macular Degeneration/Geographic Atrophy**
  IND expected to be submitted in 2024

ADX-2191

- [ ] **Retinitis Pigmentosa**
  Type C Meeting with FDA expected in first quarter of 2024 to discuss pivotal clinical testing[†]

[†]Regulatory review and discussion timelines are flexible and subject to change based on the regulator's workload and other potential review issues. [‡]The timing of clinical trials depends, in part, on the availability of clinical research facilities and staffing, the ability to recruit patients, and the number of patients in the trial. *Investigator sponsored.

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