ALDEYRA THERAPEUTICS™

Dry Eye Disease Phase 2a Results

September 12, 2017

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Dry Eye Disease Phase 2a Data Highlights

- Statistically significant and clinically relevant improvement in multiple dry eye disease signs and symptoms
- Rapid onset of activity within one week of dosing
- Improvement increased over time, and a modest dose-response was observed, supporting activity of ADX-102
- Pro-inflammatory aldehyde levels reduced, supporting novel mechanism of ADX-102
- Primary objective of trial achieved: 0.1% ADX-102, which demonstrated consistent statistically and clinically significant activity and was the best-tolerated formulation, selected to advance to Phase 2b testing
- No safety concerns observed

Dry Eye Disease
Phase 2a Clinical Design

Groups	Topical Ocular ADX-102 Formulations: • 0.1% ADX-102 • 0.5% ADX-102 • 0.5% (Lipid) ADX-102
Randomization	1:1:1 28-Day Four-Times-Daily Dosing
Enrollment	51 Patients with Dry Eye Disease
Primary Objective	Dose Selection for Phase 2b Based on Tolerability and Exploratory Efficacy
Endpoints	Standard Dry Eye Disease Signs and Symptoms

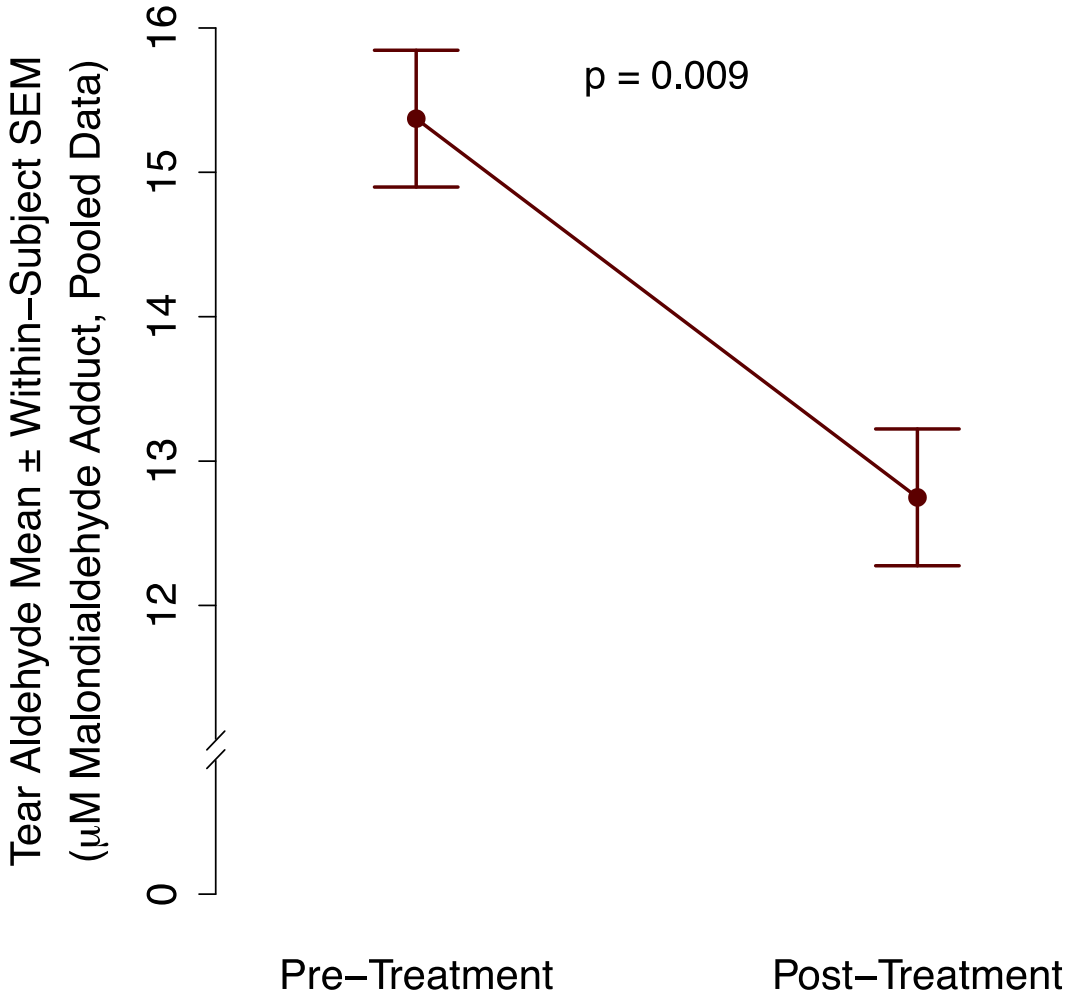
Further information can be found on www.clinicaltrials.gov: Trial #NCT03162783.

Statistically Significant Improvement in Multiple Dry Eye Disease Signs and Symptoms

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

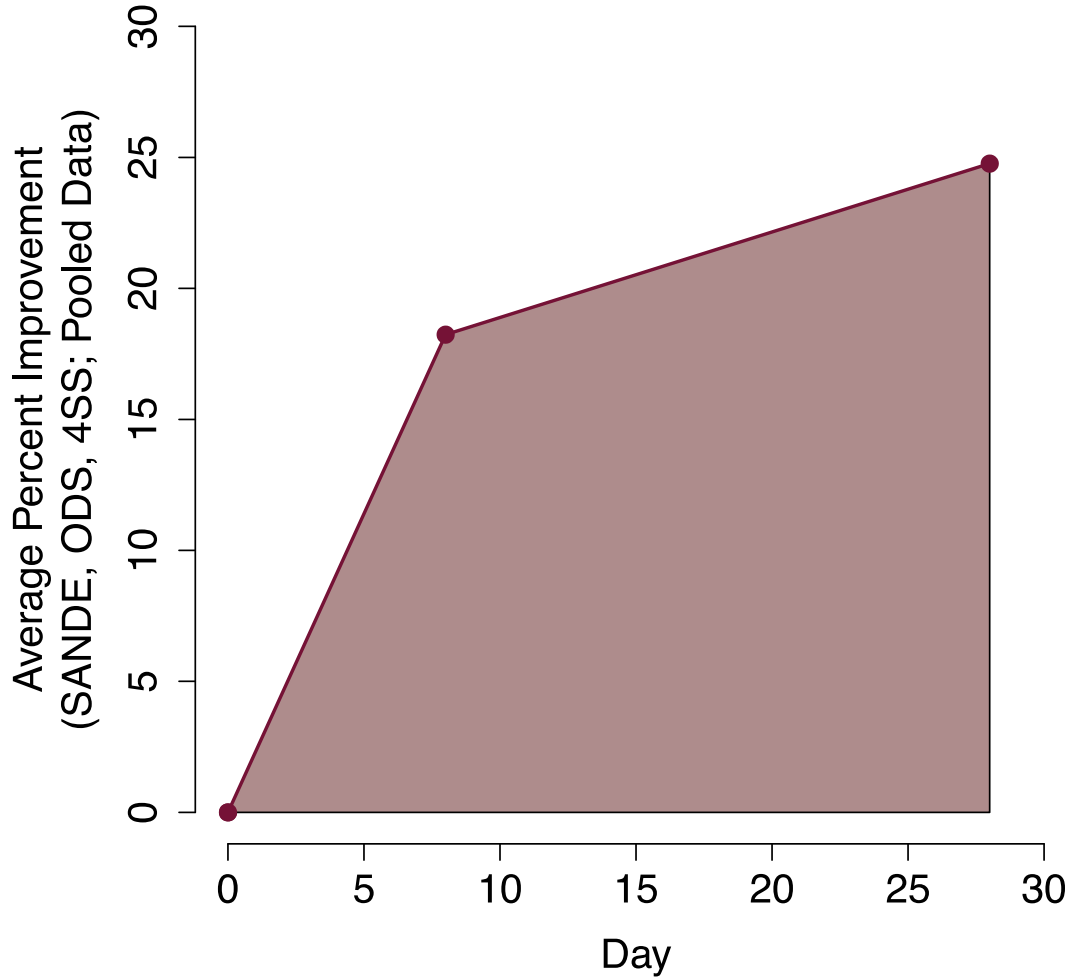
p values are subject to change based on quality control analysis; Pre-Treatment = Day 0, Post-Treatment = Day 28.

Tear Aldehyde Reduction Supportive of ADX-102 Aldehyde Sequestering Mechanism



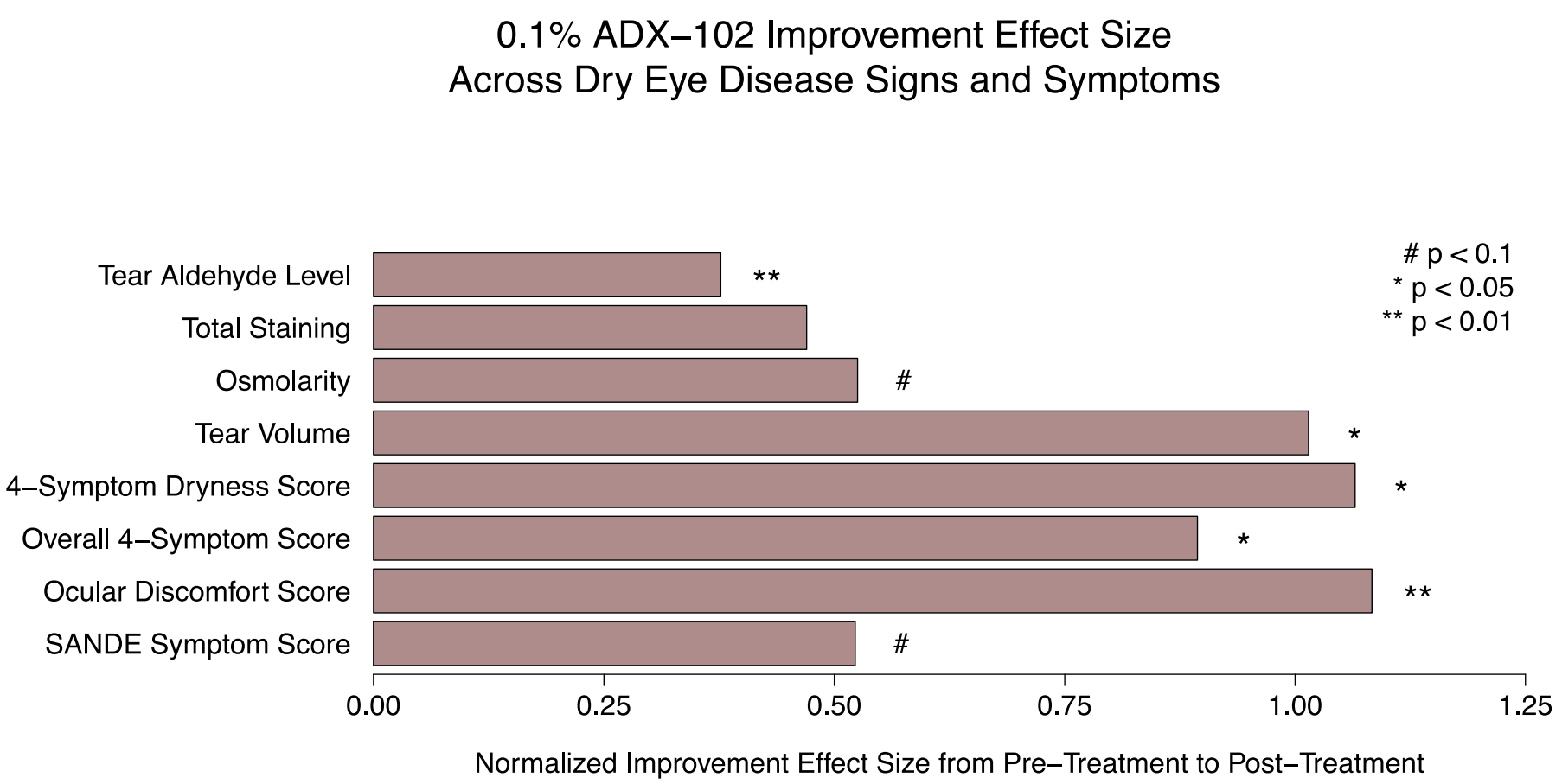
p values are subject to change based on quality control analysis; Pre-Treatment = Day 0, Post-Treatment = Day 28.

Symptom Improvement Over Time Supportive of Drug Activity



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

Improvement Effect Sizes Are Robust and Statistically Significant



p values are subject to change based on quality control analysis; Effect size = Mean difference from Day 0 to Day 28 / Standard Deviation of Day 0.

Dose Selection for Phase 2b Clinical Testing

- No observed safety concerns
- Stinging consistent with other eye drops and prior ADX-102 clinical experience, generally resolving within minutes
- Tolerability of 0.1% ADX-102 consistent with standard of care, and was better than that of 0.5% ADX-102 formulations in the dry eye disease patient population
- 0.1% ADX-102, which demonstrated consistent statistically and clinically significant activity and was the best-tolerated formulation, selected to advance to Phase 2b clinical testing in dry eye disease

Dry Eye Disease
Expected Phase 2b Clinical Design*

Groups	0.1% ADX-102, 0.25% ADX-102, and Control
Randomization	1:1:1 Double-Masked
Treatment Time	12 Weeks
Enrollment	225 Patients with Dry Eye Disease
Endpoints	Standard Dry Eye Disease Signs and Symptoms

*Pending additional non-clinical data, funding, and other factors, which may not be in Aldeyra's control

Dry Eye Disease Results Strategic Implications

- A novel mechanism of action with confirmed clinically relevant activity suggests that ADX-102 offers a differentiated approach for treatment of dry dye disease patients, which accounted for approximately $1.8B in 2016 US prescription sales*.

- Positive dry eye disease efficacy results, combined with clinically relevant results in allergic conjunctivitis and noninfectious anterior uveitis, reinforce the anti-inflammatory potential of Aldeyra's novel aldehyde trap platform in ophthalmology.

- Clinical results to date suggest the potential to position ADX-102 as the only non-corticosteroid eye drop with efficacy in dry eye disease and allergic conjunctivitis, a substantial unmet medical need for large numbers of patients that suffer from both conditions.

- Based on the positive results, Aldeyra plans to advance to Phase 2b clinical testing in dry eye disease.

Aldeyra R&D Day October 10, 2017

*IMS data

Expected 2018 Clinical Trial Milestones*

	Product Candidate	Phase	Milestone
Ocular Inflammation	Noninfectious Anterior Uveitis	Phase 3	Results 2H18
	Allergic Conjunctivitis	Phase 3	Initiation 1H18 Results 2H18
	Dry Eye Disease	Phase 2b	Initiation 1H18 Results 2H18
Inborn Errors of Aldehyde Metabolism	Sjögren-Larsson Syndrome (SLS)	Phase 3 (Derm, Part I)	Initiation 1H18 Results 2H18
	Systemic ADX-10X†	Phase 1-2 (SLS, Inflammation)	Initiation 2H18

*Pending regulatory agency discussions, additional non-clinical data, funding, and other factors, which may not be in Aldeyra's control
†Timing contingent on product candidate selection and additional non-clinical data