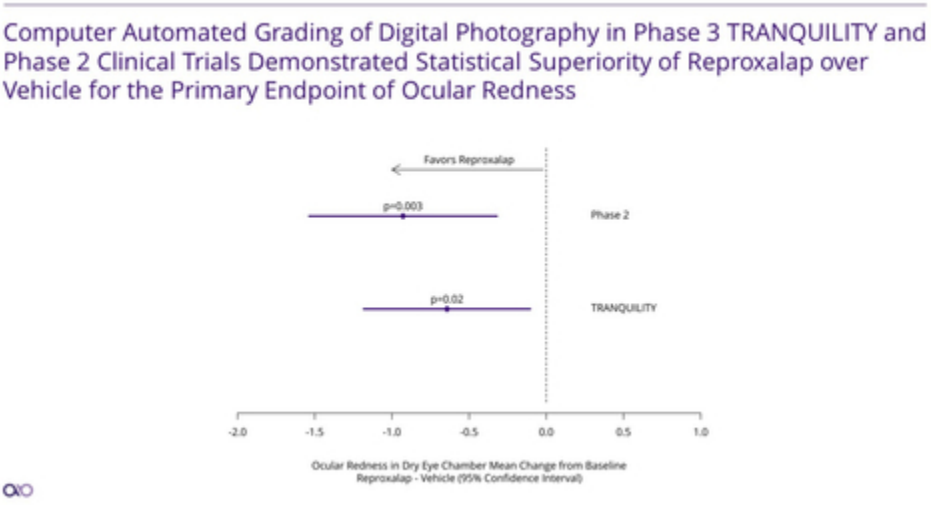
Aldeyra Therapeutics Announces that Post-Hoc Analysis Using Computer Automated Grading of Phase 3 TRANQUILITY Trial Digital Photography Demonstrated Statistical Significance in Favor of Reproxalap Over Vehicle for Primary Endpoint of Ocular Redness

May 18, 2022

- *Post-Hoc Analysis Using Computer Automated Grading Indicated that Reproxalap is Statistically Superior to Vehicle (p=0.020) in Reducing Dry-Eye Associated Ocular Redness, the Primary Endpoint of Phase 3 TRANQUILITY Trial*
- *Statistical Superiority of Reproxalap over Vehicle (p=0.003) for the Primary Endpoint of Ocular Redness in the Previously Announced Phase 2 Dry Eye Chamber Trial Confirmed Using Post-Hoc Computer Automated Grading*
- *Pending Discussion with the U.S. Food & Drug Administration (FDA), Aldeyra Intends to Include Ocular Redness as an Objective Sign of Dry Eye Disease for New Drug Application (NDA), Expected to be Submitted Mid-2022*
- *TRANQUILITY-2 Top-Line Results Expected in the Second Quarter of 2022*

LEXINGTON, Mass.--(BUSINESS WIRE)--May 18, 2022-- Aldeyra Therapeutics, Inc. (Nasdaq: ALDX) (Aldeyra) today reported that a post-hoc analysis using computer automated grading of digital photography from the completed Phase 3 TRANQUILITY dry eye chamber trial demonstrated statistical significance (p=0.020) in favor of reproxalap over vehicle for the primary endpoint of reduction of ocular redness. As previously announced, the Phase 3 TRANQUILITY trial failed to meet the primary endpoint of ocular redness as assessed by independent central reviewers.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20220517006326/en/



Aldeyra Therapeutics, Inc. (Nasdaq: ALDX) on May 18, 2022 reported that a post-hoc analysis using computer automated grading of digital photography from the completed Phase 3 TRANQUILITY and Phase 2 clinical trials demonstrated statistical significance in favor of reproxalap over vehicle for the primary endpoint of reduction of ocular redness. (Graphic: Aldeyra Therapeutics)

When applied to Aldeyra's Phase 2 dry eye chamber trial, which was completed in late 2021, the computer automated grading assessment (p=0.003) confirmed the previously announced achievement of the primary endpoint of ocular redness (p=0.016), which, similar to the Phase 3 TRANQUILITY trial, was originally assessed by independent central reviewers. Aldeyra intends to discuss the results of the post-hoc analyses, as well as the algorithm used for the computer automated assessment of ocular redness,[1] with the FDA prior to NDA submission.

The computer automated grading of redness in the completed Phase 3 TRANQUILITY and Phase 2 clinical trials of reproxalap is based on digital images captured by portable cameras fitted with eye cups to standardize distance, lighting, focus, hue, and contrast. The assessment consisted of automated selection of temporal conjunctiva from images of subjects focusing on nasal targets in the eye cup. Redness intensity was averaged across all pixels in the selected region, and combined with vessel geometry to generate a theoretical maximum score of 255. The average baseline score from the post-hoc analyses of the Phase 3 TRANQUILITY and Phase 2 clinical trials was approximately 18.

Per draft FDA guidance, to be considered for regulatory approval in the United States, a product candidate for the treatment of dry eye disease must, with certain exceptions, demonstrate efficacy in an objective sign in at least two clinical trials and efficacy in a subjective symptom in at least two clinical trials. Statistical significance versus vehicle is generally considered sufficient for demonstration of efficacy.

For satisfaction of symptom efficacy requirements, Aldeyra intends to submit two previously completed adequate and well-controlled 12-week symptom trials that pre-specified patient-reported ocular dryness score as a primary endpoint, the Phase 3 RENEW-Part 1 and Formulation Phase 2 clinical trials. Pending discussion with the FDA, for satisfaction of the sign efficacy requirements, Aldeyra intends to submit the ocular redness results from the Phase 3 TRANQUILITY and Phase 2 dry eye chamber trials. If the primary endpoint of Schirmer test is achieved in the Phase 3 TRANQUILITY-2 trial, and pending discussion with the FDA, Aldeyra intends to submit Schirmer test results from both TRANQUILITY trials as evidence for achievement of an additional objective sign of dry eye disease.

Top-line results from TRANQUILITY-2 are expected in the second quarter of 2022. Pending discussion with the FDA and enrollment of the ongoing 12-month safety trial in dry eye disease patients, NDA submission for dry eye disease is expected to occur mid-2022.

About Aldeyra

Aldeyra develops innovative therapies designed to treat immune-mediated diseases. Our approach is to discover pharmaceuticals that modulate immunological systems, instead of directly inhibiting or activating single protein targets, with the goal of optimizing multiple pathways at once while minimizing toxicity. Two of our lead product candidates, reproxalap and ADX-629, target pre-cytokine, systems-based mediators of inflammation known as RASP (reactive aldehyde species). Reproxalap is in Phase 3 clinical trials in patients with dry eye disease and allergic conjunctivitis. ADX-629, an orally administered RASP modulator, is in Phase 2 clinical testing for the treatment of systemic immune-mediated diseases. Our pipeline also includes ADX-2191 (intravitreal methotrexate 0.8%), in development for the prevention of proliferative vitreoretinopathy and the treatment of retinitis pigmentosa and primary vitreoretinal lymphoma. For more information, visit https://www.aldeyra.com/ and follow us on LinkedIn, Facebook, and Twitter.

Safe Harbor Statement

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, statements regarding submission of a potential New Drug Application; the anticipated timing of results from Aldeyra's clinical trials; expectations regarding the FDA's acceptance of Aldeyra's post-hoc review of data and agreement with Aldeyra's methods of analyzing data; and Aldeyra's projected cash runway. Aldeyra intends such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. In some cases, you can identify forward-looking statements by terms such as, but not limited to, "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "anticipate," "project," "on track," "scheduled," "target," "design," "estimate," "predict," "potential," "aim," "plan" or the negative of these terms, and similar expressions intended to identify forward-looking statements. Such forward-looking statements are based upon current expectations that involve risks, changes in circumstances, assumptions, and uncertainties. Aldeyra is at an early stage of development and may not ever have any products that generate significant revenue. 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 or completion of clinical trials. Important factors that could cause actual results to differ materially from those reflected in Aldeyra's forward-looking statements include, among others, the timing of enrollment, commencement and completion of Aldeyra's clinical trials, the timing and success of preclinical studies and clinical trials conducted by Aldeyra and its development partners; updated or refined data based on Aldeyra's continuing or post-hoc review and quality control analysis of clinical data, Aldeyra's ability to design clinical trials with protocols, data analysis methodologies, and endpoints acceptable to applicable regulatory authorities; delay in or failure to obtain regulatory approval of Aldeyra's product candidates; the ability to maintain regulatory approval of Aldeyra's product candidates, and the labeling for any approved products; the risk that prior results, such as signals of safety, activity, or durability of effect, observed from preclinical or clinical trials, will not be replicated or will not continue in ongoing or future studies or clinical trials involving Aldeyra's product candidates in clinical trials focused on the same or on different indications; 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; the scope, progress, expansion, and costs of developing and commercializing Aldeyra's product candidates; uncertainty as to Aldeyra's ability to commercialize (alone or with others) and obtain reimbursement for Aldeyra's product candidates following regulatory approval, if any; the size and growth of the potential markets and pricing for Aldeyra's product candidates and the ability to serve those markets; Aldeyra's expectations regarding Aldeyra's expenses and revenue, the sufficiency or use of Aldeyra's cash resources and needs for additional financing; political, economic, legal, social, and health risks, including the COVID-19 pandemic and subsequent public health measures, and war or other military actions, that may affect Aldeyra's business or the global economy; the rate and degree of market acceptance of any of Aldeyra's product candidates; Aldeyra's expectations regarding competition; Aldeyra's anticipated growth strategies; Aldeyra's ability to attract or retain key personnel; Aldeyra's limited sales and marketing infrastructure; Aldeyra's ability to establish and maintain development partnerships; Aldeyra's ability to successfully integrate acquisitions into its business; Aldeyra's expectations regarding federal, state, and foreign regulatory requirements; regulatory developments in the United States and foreign countries; Aldeyra's ability to obtain and maintain intellectual property protection for its product candidates; the anticipated trends and challenges in Aldeyra's business and the market in which it operates; and other factors that are described in the "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of Aldeyra's Annual Report on Form 10-K for the year ended December 31, 2021, and Aldeyra's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, which are on file with the Securities and Exchange Commission (SEC) and available on the SEC's website at https://www.sec.gov/.

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 release is provided only as of the date of this release, and Aldeyra undertakes no obligation to update any forward-looking statements contained in this release on account of new information, future events, or otherwise, except as required by law.

---

[1] Rodriguez JD et al. Automated grading system for evaluation of ocular redness associated with dry eye. Clin Ophthalmol. 2013;7:1197-1204.

View source version on businesswire.com: https://www.businesswire.com/news/home/20220517006326/en/

Investor & Media Contact:
Scott Solomon
Sharon Merrill Associates, Inc.
Tel: 857-383-2409
ALDX@investorrelations.com

Source: Aldeyra Therapeutics, Inc.