OpRegen® Clinical Data Presented at 125th Annual American Academy of Ophthalmology Meeting by Michael S. Ip, M.D.

November 15, 2021

- **Ongoing Clinical Trial Data Continue to Demonstrate a Single Administration of OpRegen Can Provide Anatomical and Functional Improvements in Patients with Dry Age-Related Macular Degeneration with Geographic Atrophy**
- **All Three Cases of Retinal Restoration Have Shown Evidence of Markedly Smaller Areas of Atrophy at 12 Months Post-Treatment**
- **Detailed Imaging Analyses Showed Stability or Trends Towards Improvement in Key Retinal Structures in Treated Eyes**
- **Statistically Significant Differences in Visual Acuity Continue to be Observed in Cohort 4 Patients Between OpRegen Treated and Fellow Untreated Eyes (N=12)**

CARLSBAD, Calif.--(BUSINESS WIRE)--Nov. 15, 2021-- Lineage Cell Therapeutics, Inc. (NYSE American and TASE: LCTX), a clinical-stage biotechnology company developing allogeneic cell therapies for unmet medical needs, today reported updated interim results from a Phase 1/2a clinical study of its lead product candidate, OpRegen®, an investigational retinal pigment epithelium ("RPE") cell transplant therapy currently in development for the treatment of dry age-related macular degeneration ("AMD"), were presented at the 2021 American Academy of Ophthalmology (AAO) 125th Annual Meeting. The presentation, *"OpRegen Trial: Phase 1/2a Dose Escalation Study of Human Embryonic Stem-Cell Derived Retinal Pigment Epithelium Cells Transplanted Subretinally in Patients with Advanced AMD, (Geographic Atrophy) (NCT02286089): Interim Results and Further Insights from Imaging Analyses"* was presented on November 13, 2021 as part of the Gene and Cell-Based Therapies Session, by Michael S. Ip, M.D., Professor, Department of Ophthalmology at the David Geffen School of Medicine at the University of California, Los Angeles. These updated results include a minimum of 12 months of follow-up in all 12 patients treated in Cohort 4, which as a group had better baseline vision and smaller areas of geographic atrophy ("GA") at baseline than earlier cohorts. Overall, in the study (N=24), OpRegen has been well tolerated to date and there have been no new, unexpected ocular or systemic adverse events or serious adverse events not previously reported.

Dr. Ip stated, "I am excited about several aspects of the optical coherence tomography, or OCT, observations following our team's detailed image review. First, there appear to be resolution of incomplete RPE and outer retinal atrophy or iRORA in several patients. Additionally, there is evidence of resolution of areas with features of cRORA, or complete loss of the RPE and outer retinal tissue, in some eyes, which has not been previously reported. Finally, there are statistically significant improvement, or trends toward improvement, in the treated eyes versus the fellow eyes as compared from baseline to month 12 post-treatment in critical retinal tissue. I look forward to our group completing these analyses in the remaining patients as data become available."

"We are encouraged by this additional supporting evidence obtained from independent analyses of the OpRegen data in patients with atrophic AMD," added Brian M. Culley, Lineage CEO. "When OpRegen is implanted in the transitional zones of the GA in patients with less advanced disease, reversing damage, or even simply arresting further progression for several years, has been shown to be possible. Restoration of retinal tissue is a compelling finding compared to conventional approaches which to date have only shown an unexceptional slowing of progression. In addition to being well tolerated to date, the durability of changes to areas of atrophy and improvements in visual acuity observed point to the urgency to further evaluate OpRegen in a larger, controlled trial. We currently are preparing for multiple engagements with FDA to discuss aspects of OpRegen's designation, our manufacturing plans, and the design of a later-stage clinical trial. We expect the first of these engagements will begin in the fourth quarter of 2021 and continue in the first quarter of 2022."

OpRegen Phase 1/2a Interim Clinical Results

- Retinal restoration, reported in 3 patients to date, persists and continues to be followed.
- Overall, using the Early Treatment Diabetic Retinopathy Study (EDTRS) assessment of visual acuity, 7/12 (58%) of Cohort 4 patients' treated eye were at baseline or better at 12 months or last time point, which extends beyond 3 years in some patients. In comparison, at the same time points, 8/12 (67%) were below baseline in those patients' fellow untreated eyes.
- Across the study, in patients with previously reported structural improvements in the retina, decreases in drusen density, and a trend toward slower GA progression in treated compared to untreated eyes continue to be present.
- Evidence of durable engraftment of OpRegen RPE cells has extended to more than 5 years in the earliest treated patients, supporting the potential for OpRegen to be a one-time treatment.

Doheny OCT Sub Study Results

- The Doheny Image Reading and Research Lab (DIRRL) is leading a sub study that is further analyzing OCT images collected as part of the study protocol. The images are being independently assessed for the presence or absence of retinal layers and thickness and volume of those layers at baseline and at months 6 and 12 following OpRegen treatment using a proprietary program known as "3D-OCTOR".
    - 3D-OCTOR is a validated, part 11-compliant, image-grading software tool originally developed by the Doheny Imaging Exploration and Software Engineering Laboratory (DIESEL).

        - Boundaries of various retinal and subretinal spaces are manually drawn on each SDOCT scan collected and then comprehensively analyzed.
        - After the grader draws the required layers in each of the B-scans, the software calculates the distance in pixels between the manually drawn boundary lines and calculates a thickness map for the nine ETDRS macular subfields.
- In OCT images analyzed from the first 4 better vision patients treated in Cohort 4, significant improvements or stabilization of key retinal structures such as the thickness and volume of the ellipsoid zone (EZ) from baseline to 12 months post-treatment have been observed.
    - These areas and structures continued to progressively worsen in the untreated fellow eyes.
    - Complete resolution of both iRORA and cRORA have been noted in some patients.
- Further analysis and review are ongoing of OCT images from the remaining 8 better vision patients treated in Cohort 4.

About OpRegen

OpRegen is currently being evaluated in a Phase 1/2a open-label, dose escalation safety and efficacy study of a single injection of human retinal pigment epithelium cells derived from an established pluripotent cell line and transplanted subretinally in patients with advanced dry AMD with GA. The study enrolled 24 patients into 4 cohorts. The first 3 cohorts enrolled only legally blind patients with best corrected visual acuity (BCVA) of 20/200 or worse. The fourth cohort enrolled 12 better vision patients (BCVA from 20/65 to 20/250 with smaller mean areas of GA). Cohort 4 also included patients treated with a new “thaw-and-inject” formulation of OpRegen, which can be shipped directly to sites and used immediately upon thawing, removing the complications and logistics of having to use a dose preparation facility. The primary objective of the study is to evaluate the safety and tolerability of OpRegen as assessed by the incidence and frequency of treatment emergent adverse events. Secondary objectives are to evaluate the preliminary efficacy of OpRegen treatment by assessing the changes in ophthalmological parameters measured by various methods of primary clinical relevance. OpRegen has been well tolerated to date and there have been no new, unexpected ocular or systemic adverse events or serious adverse events that have not been previously reported. OpRegen is a registered trademark of Cell Cure Neurosciences Ltd., a majority-owned subsidiary of Lineage Cell Therapeutics, Inc.

About Age-Related Macular Degeneration

Age-related macular degeneration (AMD) is an eye disease that can blur the sharp, central vision in patients and is the leading cause of vision loss in people over the age of 60. There are two forms of AMD: dry (atrophic) AMD and wet (neovascular) AMD. Dry (atrophic) AMD is the more common of the two forms, accounting for approximately 85-90% of all cases. In atrophic AMD, parts of the macula get thinner with age and accumulations of extracellular material between Bruch’s membrane and the RPE, known as drusen, increase in number and volume, leading to a progressive loss of central vision, typically in both eyes. Global sales of the two leading wet AMD therapies were in excess of $10 billion in 2019. Nearly all cases of wet AMD eventually will develop the underlying atrophic AMD if the newly formed blood vessels are treated correctly. There are currently no U.S. Food and Drug Administration (FDA), or European Medicines Agency, approved treatment options available for patients with atrophic AMD.

About Lineage Cell Therapeutics, Inc.

Lineage Cell Therapeutics is a clinical-stage biotechnology company developing novel cell therapies for unmet medical needs. Lineage’s programs are based on its robust proprietary cell-based therapy platform and associated in-house development and manufacturing capabilities. With this platform Lineage develops and manufactures specialized, terminally differentiated human cells from its pluripotent and progenitor cell starting materials. These differentiated cells are developed to either replace or support cells that are dysfunctional or absent due to degenerative disease or traumatic injury or administered as a means of helping the body mount an effective immune response to cancer. Lineage’s clinical programs are in markets with billion dollar opportunities and include three allogeneic (“off-the-shelf”) product candidates: (i) OpRegen ®, a retinal pigment epithelium transplant therapy in Phase 1/2a development for the treatment of dry age-related macular degeneration, a leading cause of blindness in the developed world; (ii) OPC1, an oligodendrocyte progenitor cell therapy in Phase 1/2a development for the treatment of acute spinal cord injuries; and (iii) VAC2, an allogeneic dendritic cell therapy produced from Lineage’s VAC technology platform for immune-oncology and infectious disease, currently in Phase 1 clinical development for the treatment of non-small cell lung cancer. For more information, please visit www.lineagecell.com or follow the Company on Twitter @LineageCell.

Forward-Looking Statements

Lineage cautions you that all statements, other than statements of historical facts, contained in this press release, are forward-looking statements. Forward-looking statements, in some cases, can be identified by terms such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “design,” “intend,” “expect,” “could,” “can,” “plan,” “potential,” “predict,” “seek,” “should,” “would,” “contemplate,” "project," “target,” “tend to,” or the negative version of these words and similar expressions. Such statements include, but are not limited to, statements relating to the potential benefits of treatment with OpRegen in dry AMD patients with GA, the significance of clinical data reported to date from the ongoing Phase 1/2a study of OpRegen, including the findings of retinal tissue restoration, Lineage's plans to meet with the FDA to discuss OpRegen’s clinical development, the potential utilization of OCT imaging to measure efficacy in a pivotal clinical trial of OpRegen for the treatment of dry AMD with GA, and the potential for Lineage’s investigational allogeneic cell therapies to provide safe and effective treatment for multiple, diverse serious or life threatening conditions. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause Lineage’s actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by the forward-looking statements in this press release, including risks and uncertainties inherent in Lineage’s business and other risks in Lineage’s filings with the Securities and Exchange Commission (SEC). Lineage’s forward-looking statements are based upon its current expectations and involve assumptions that may never materialize or may prove to be incorrect. All forward-looking statements are expressly qualified in their entirety by these cautionary statements. Further information regarding these and other risks is included under the heading “Risk Factors” in Lineage’s periodic reports with the SEC, including Lineage’s most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the SEC and its other reports, which are available from the SEC’s website. You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they were made. Lineage undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as required by law.

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