# Lineage Cell Therapeutics and Cancer Research UK Report Topline Phase 1 Study Results With VAC2 for the Treatment of Advanced Non-small Cell Lung Cancer

July 24, 2023

- Patients enrolled were diagnosed with refractory, metastatic or locally advanced, non-small cell lung cancer (NSCLC), for whom there were no other suitable treatment options
- Five of eight patients treated (62.5%) had a best response of immune-related stable disease, and three (37.5%) demonstrated immune-related progressive disease
- No patients had treatment emergent serious adverse events and all patients completed per protocol vaccination
- Three of eight treated patients (37.5%) reached the 2-year survival endpoint
- Two patients had durable responses against segments of the tumor antigen human telomerase reverse transcriptase (hTERT) and two other patients had transient responses as assessed via enzyme-linked immunospot (ELISPOT) assays
- Further analyses from immunogenicity of VAC2 in the tumor, skin punch biopsies, and peripheral responses are being conducted by Cancer Research UK

CARLSBAD, Calif.--(BUSINESS WIRE)--Jul. 24, 2023-- Lineage Cell Therapeutics, Inc. (NYSE American and TASE: LCTX), a clinical-stage biotechnology company developing allogeneic cell therapies for unmet medical needs, and Cancer Research UK, the world's leading cancer charity dedicated to saving lives through research, today announced encouraging primary and secondary endpoint results from the recently completed clinical study of VAC2 in advanced non-small cell lung cancer (NSCLC). The Phase 1 study was a first-in-human, open label, multi-center trial designed to investigate safety, immunogenicity, and survival in patients with advanced NSCLC (defined as metastatic or locally advanced disease) when administered the allogeneic dendritic cell (DC) vaccine VAC2 (NCT03371485). VAC2 DC cells have been engineered to present hTERT, a tumor-associated antigen found almost exclusively in cancer cells, and it is postulated that VAC2 will stimulate an immunogenic anti-tumor CD4+/CD8+ T cell response toward hTERT expressed on tumor cells. All eight subjects enrolled and treated completed the full per protocol vaccination regimen, which consisted of six-consecutive weekly intradermal (ID) injections of $1 \times 10^7$ viable VAC2 cells. Overall, VAC2 was well-tolerated, there were no unexpected SAEs, and there were no dose limiting toxicities.

"The unmet medical need in refractory NSCLC is significant and results from recent clinical trials support the investigation of cancer vaccines as a promising approach to treating this disease. The antigen-loaded VAC2 product candidate appeared to be well tolerated in all treated patients and the adverse events which we did observe were modest and expected from a therapy designed to generate a robust and durable immune response to tumor antigens. The immunogenicity data reported to date are also encouraging and supportive of the clinical observations we noted in the patients," stated Professor Gary Middleton MB, BS, MD, FRCP, Professor of Medical Oncology, Institute of Immunology and Immunotherapy, The University of Birmingham, UK.

Brian Culley, Chief Executive Officer of Lineage, added: "The conclusion of this partnered study represents an important milestone for Lineage's allogeneic cell therapy pipeline. We have completed clinical studies using three separate cell types in dramatically different diseases; geographic atrophy secondary to dry-form age-related macular degeneration, spinal cord injury, and most recently, NSCLC. The overall safety and efficacy data from these studies affirm our belief in the potential for allogeneic cell therapy to address some of the most serious medical needs, which unfortunately remain unaddressed by conventional approaches. Our goal is to determine how best to advance and expand not only the VAC platform as a delivery vehicle for tumor-associated and neoantigen vaccine delivery to resistant tumors, but also our overall approach to differentiated cell transplants as an emerging branch of medicine."

"Lung cancer is the third most common cancer in the UK and unfortunately, only 10% of patients survive their disease for 10 years or more, so we desperately need better treatment options. We are excited to see these initial VAC2 clinical data from a first-in-human application in what is the most common form of lung cancer and are hopeful that we can continue our collaborative work with Lineage on the next phase of development for this promising treatment approach," added Nigel Blackburn, PhD, Cancer Research UK's Director of Drug Development.

On May 7th, 2020, Lineage completed an early exercise of its option to acquire data from Cancer Research UK and assumed responsibility for further development of the VAC2 product candidate as well as future development opportunities derived from the VAC platform, while Cancer Research UK's Centre for Drug Development completed the clinical study in NSCLC. Lineage is currently reviewing these data, as well as several tertiary and exploratory endpoint assessments, and will determine next steps to evaluate VAC2 following these analyses. Lineage, Cancer Research UK, and the participating investigators intend to present these data at future medical and scientific conferences and submit publications to relevant journals for peer review.

**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 and preclinical programs are in markets with billion dollar opportunities and include five allogeneic ("off-the-shelf") product candidates: (i) OpRegen®, a retinal pigment epithelial cell therapy in Phase 2a development for the treatment of geographic atrophy secondary to age-related macular degeneration, is being developed under a worldwide collaboration with Roche and Genentech, a member of the Roche Group; (ii) OPC1, an oligodendrocyte progenitor

cell therapy in Phase 1/2a development for the treatment of acute spinal cord injuries; (iii) VAC2, a dendritic cell therapy produced from Lineage's VAC technology platform for immuno-oncology and infectious disease, currently in Phase 1 clinical development for the treatment of non-small cell lung cancer; (iv) ANP1, an auditory neuronal progenitor cell therapy for the potential treatment of auditory neuropathy; and (v) PNC1, a photoreceptor neural cell therapy for the potential treatment of vision loss due to photoreceptor dysfunction or damage. For more information, please visit www.lineagecell.com or follow the company on Twitter @LineageCell.

**About VAC2**

VAC2 is an allogeneic, or non-patient specific, off-the-shelf cancer vaccine product candidate designed to stimulate patient immune responses to an antigen commonly expressed in cancerous cells but not in normal adult cells. VAC2, which is produced from a pluripotent cell technology using a directed differentiation method, is comprised of a population of nonproliferating mature dendritic cells. As the most potent type of antigen presenting cell in the body, dendritic cells instruct the body's immune system to attack and eliminate harmful pathogens and unwanted cells. Because the tumor antigen is loaded exogenously into the dendritic cells prior to administration, VAC2 is a platform technology that can be modified to carry any antigen, including patient-specific tumor neo-antigens or viral antigens. VAC2 was studied in a Phase 1 clinical study in adult patients with NSCLC in the advanced and adjuvant settings (NCT03371485), conducted by Cancer Research UK.

**About Cancer Research UK's Centre for Drug Development**

Cancer Research UK has an impressive record of developing novel treatments for cancer. The Cancer Research UK Centre for Drug Development has been pioneering the development of new cancer treatments for 25 years, taking over 150 potential new anti-cancer agents into clinical trials in patients. It currently has a portfolio of 21 new anti-cancer agents in preclinical development, Phase I or early Phase II clinical trials. Six of these new agents have made it to market including temozolomide for brain cancer, abiraterone for prostate cancer and rucaparib for ovarian cancer. Two other drugs are in late development Phase III trials. www.cruk.org.uk/cdd

**About Cancer Research UK**

- Cancer Research UK is the world's leading cancer charity dedicated to saving lives through research, influence, and information.
- Cancer Research UK's pioneering work into the prevention, diagnosis and treatment of cancer has helped save millions of lives.
- Cancer Research UK has been at the heart of the progress that has already seen survival in the UK double in the last 40 years.
- Today, 2 in 4 people survive their cancer for at least 10 years. Cancer Research UK wants to accelerate progress and see 3 in 4 people surviving their cancer by 2034.
- Cancer Research UK supports research into the prevention and treatment of cancer through the work of over 4,000 scientists, doctors, and nurses.
- Together with its partners and supporters, Cancer Research UK is working towards a world where people can live longer, better lives, free from the fear of cancer.

*Cancer research UK's work or to find out how to support the charity, please call +44 0300 123 1022 or visit www.cancerresearchuk.org. Follow us on Twitter and Facebook.*

**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," "aim," "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 effect of the SCIIS, including increasing disease awareness, the probability of success in product development, clinical trial participation, or investment and partnerships; the ability of cell transplant therapy approaches, including OPC1, to improve recovery or allow a patient to regain more mobility than what could otherwise be expected. 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, but not limited to, the following risks: that the SCIIS will effectively accelerate SCI research, clinical trials or product development; that positive findings in early clinical and/or nonclinical studies of a product candidate may not be predictive of success in subsequent clinical and/or nonclinical studies of that candidate; and those risks and uncertainties inherent in Lineage's business and other risks discussed 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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