PRESS RELEASE

Cellectis Presents Non-Viral Gene Editing and Base Editing Innovation at the ASGCT Annual Meeting

New York, NY – April 28, 2025 - Cellectis (the "Company") (Euronext Growth: ALCLS - NASDAQ: CLLS), a clinical-stage biotechnology company using its pioneering gene-editing platform to develop life-saving cell and gene therapies, today unveils research data on TALEN®-mediated non-viral transgene insertion for advancing cellular and gene therapies, and advancements in genetic editing using TALE base editors (TALEB), at the Society of Gene and Cell Therapy (ASGCT) annual meeting, that will be held on May 13-17, 2025 in New Orleans.

The data are presented in two posters:

Title: TALEN®- Mediated non-viral Transgene Insertion for the Advancement of Cellular and Gene Therapies.

Cell and gene therapy approaches can use gene-editing tools and introduce transgenes to modify disease-associated genes, thus providing a potential therapeutic solution for a wide array of diseases.

In this work, Cellectis combines TALEN®-mediated gene editing with non-viral delivery of transgene for advancing cellular and gene therapies, and explores gene insertion-efficacy and cellular health using single-stranded DNA (ssDNA) for payload delivery in different cell types.

This innovative approach has the potential to address the challenges associated with traditional lentiviral viral methods or AAV-mediated transgene insertion such as manufacturing constraints, potential genomic toxicities or limited payload size.

Research data show:

- **Non-viral methods for gene editing:** TALEN® mediated gene editing combined with non-viral templates (linear and circular ssDNA) can be used for highly efficient gene insertion in T-cells as well as hematopoietic stem and progenitor cells (HSPCs) promoting viability and insertion specificity.

- **Advantages of Circular ssDNA over viral vectors:** Transcriptomic analysis and *in vivo* data demonstrate that CssDNA-mediated cell engineering allows better maintenance of HSPC fitness as well as more stable gene editing, compared to traditional viral donor template-mediated transgene delivery.

« The implementation of these gene-editing techniques holds significant potential for the development of next-generation therapies, aiming to provide alternative efficient, and safe therapeutic options for patients with cancer, autoimmune diseases, monogenic disorders, and various other conditions. » said Beatriz Aranda Orgilles, Ph.D., Associate Director – IO and business development analyst at Cellectis.

Title: High fidelity C-to-T editing with TALE base editors

TALE base editors (TALEB) are fusions of a transcription activator-like effector domain (TALE), split-DddA deaminase halves, and a uracil glycosylase inhibitor (UGI). The C-to-T class of TALEB edits double-stranded DNA by converting a cytosine (C) to a thymine (T) and does not involve DNA strand nick.

Cellectis has developed a method to characterize the efficiency of this conversion and examined various factors influencing TALEB activity. This method also takes advantage of a highly precise and efficient knock-in of ssODN in primary T cells to develop an assay to assess how the composition and spacer variations of target sequences affect TALEB activity/efficiency.

Research data show:

- **Efficiency of C-to-T editing:** TALEB enables efficient conversion of C to T. Variations in target sequences and surrounding bases affecting editing efficiency. An educated choice of the TALEB architecture further allows to control the editing outcome.

- **Assessment of off-target editing risks:** Studies have been conducted to evaluate off-target editing, showing no detectable editing in primary cells at previously described sites, highlighting the specificity of TALEB for potential therapeutic applications.

«It is inspiring to see the advancement of Cellectis' TALE technology into a new tool that is available in our gene editing toolbox. Our ability to understand and fine-tune the editing capacity of TALE base editors has equipped us with another efficient and specific approach that can be used to support novel gene editing and gene therapy applications. » said Louisa Mayer, Ph.D., Scientist II and Supervisor – Innovation & Gene Editing at Cellectis.

Overall, the results of this study enhance the control and use of TALEB, allowing for the design of highly efficient and specific TALEB compatible with future therapeutic applications.

The abstracts are live on the ASGCT website. The posters will be available on Cellectis' website the first day of the event.

About Cellectis
Cellectis is a clinical-stage biotechnology company using its pioneering gene-editing platform to develop life-saving cell and gene therapies. The company utilizes an allogeneic approach for CAR T immunotherapies in oncology, pioneering the concept of off-the-shelf and ready-to-use gene-edited CAR T-cells to treat cancer patients, and a platform to develop gene therapies in other therapeutic indications. With its in-house manufacturing capabilities, Cellectis is one of the few end-to-end gene editing companies that controls the cell and gene therapy value chain from start to finish.

Cellectis' headquarters are in Paris, France, with locations in New York and Raleigh, NC. Cellectis is listed on the Nasdaq Global Market (ticker: CLLS) and on Euronext Growth (ticker: ALCLS). To find out more, visit www.cellectis.com and follow Cellectis on LinkedIn and X.

TALEN® is a registered trademark owned by Cellectis.

Cautionary Statement
This press release contains "forward-looking" statements within the meaning of applicable securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as" can," "potential," "has the potential to," "aiming to," and "will" or the negative of these and similar expressions. These forward-looking statements are based on our management's current expectations and assumptions and on information currently available to management. Forward-looking statements include statements about the potential of our innovation programs, in particular our gene editing innovations. These forward-looking statements are made in light of information currently available to us and are subject to numerous risks and uncertainties, including those described in our Annual Report on Form 20-F as amended and in our annual financial report (including the management report) for the year ended December 31, 2024 and subsequent filings Cellectis makes with the Securities Exchange Commission from time to time, which are available on the SEC's website at www.sec.gov, as well as other known and unknown risks and uncertainties may adversely affect such forward-looking statements and cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

For further information on Cellectis, please contact:

Media contacts:
Pascalyne Wilson, Director, Communications, + 33 (0)7 76 99 14 33, media@cellectis.com

Patricia Sosa Navarro, Chief of Staff to the CEO, +33 (0)7 76 77 46 93

Investor Relations contact:
Arthur Stril, Chief Financial Officer & Chief Business Officer, investors@cellectis.com