PRESS RELEASE

Cellectis Publishes Nature Communications Article on a Non-Viral Gene Editing Process Enabling Efficient Gene Insertion in Hematopoietic Stem Cells

New York, NY – November 19, 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 publishes an article in Nature Communications establishing circular single-stranded DNA (CssDNA) as a highly efficient non-viral DNA donor template, for gene insertion in hematopoietic stem and progenitor cells (HSPCs).

Gene editing of HSPCs offers the potential for long-term therapeutic benefit. While viral vectors such as AAV6 are commonly used for gene insertion, they raise safety and efficacy concerns. Over the past decade, non-viral DNA templates delivery has emerged as promising alternatives and have been used with nucleases to target short single-stranded linear DNA corrective template in HSPCs.

Although non-viral approaches were initially limited to making only small corrections within defective genes, Cellectis harnessed its TALEN® technology and CssDNA donor templates, to develop a robust gene insertion process. This process enables precise and efficient integration of large genetic sequences within therapeutically relevant subpopulations of HSPCs, significantly expanding the potential of non-viral gene therapy.

The results show that:

- CssDNA achieved 3-5 times higher knock-in efficiency than linear single stranded DNA (LssDNA), with values surpassing 40%.
- CssDNA can be used to insert genes at multiple loci in HSPCs and is applicable to other cell types of therapeutic interest, including primary T cells.
- Comparative studies also showed that CssDNA-edited HSPCs demonstrate a higher propensity to engraft and maintain gene edits in a murine model compared to AAV6-edited HSPCs.

"These results establish the CssDNA process as an efficient non-viral gene insertion strategy, and mark a pivotal advance towards the development of next-generation cell and gene therapies" said Julien Valton, Vice President of Gene Therapy of Cellectis.

The article is available on Nature Communications website here.

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.

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," or "potential," or the negative of these and similar expressions. These forward-looking statements, which are based on our management's current expectations and assumptions and on information currently available to management, include statements the potential benefit of our technologies. These forward-looking statements are made in light of information currently available to us and are subject to significant risks and uncertainties, including with respect to the numerous risks associated with biopharmaceutical product candidate development. Furthermore, many other important factors, 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