UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

Date of Report: May 31, 2023

Commission File Number: 001-36891

Cellectis S.A.
(Exact Name of registrant as specified in its charter)

8, rue de la Croix Jarry
75013 Paris, France
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(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.
Form 20-F [X] Form 40-F [ ]

EXHIBIT INDEX

Exhibit	Title
99.1	Press release, dated **May 31, 2023**

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Cellectis S.A.
(Registrant)

Date: May 31, 2023

/s/ André Choulika
André Choulika
Chief Executive Officer

EXHIBIT 99.1

Cellectis Publishes an Article in Cancer Immunology Research Demonstrating Preclinical Evidence of UCART20x22 Product Candidate to Target a Broad Spectrum of Patients with B-cell Malignancies

NEW YORK, May 31, 2023 (GLOBE NEWSWIRE) -- 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 Cancer Immunology Research demonstrating pre-clinical proof-of-concept data of UCART20x22 product candidate, Cellectis' first allogeneic dual CAR T-cell targeting the CD20 and CD22 antigens, to overcome current mechanisms of resistance to CAR T-cell therapies in B-cell Non-Hodgkin lymphoma (B-NHL), while providing a potential alternative to CD19 directed therapy.

B-cell Non-Hodgkin lymphoma (B-NHL) remains one of the most common cancers worldwide, with reports an estimate of 544,000 new cases and 260,000 deaths worldwide in 2020. Despite the groundbreaking efficacy of current CAR T-cell therapies, studies on patients treated with autologous CAR T-cells are revealing several causes for relapses that includes: antigen loss, low antigen expression or insufficient CAR T-cell potency and persistence, among others. While several suitable targets to treat B-cells malignancies have been identified, CD19 has been the focus of attention leading to a crowded space with limited therapeutic alternatives for CD19 low or negative relapses.

The limited amount of eligible treatment options after relapse from autologous CAR T-cell therapy or for patients not eligible for autologous therapies, underscores the urgent need to develop novel therapies with the potential to improve patient outcome.

To address these challenges, Cellectis developed UCART20x22, its first allogeneic dual CAR T-cell product candidate targeting two validated antigens commonly expressed in B-cell malignancies, CD20 and CD22, and whose expression is preserved after CD19 CAR T-cell treatment. Cellectis provides pre-clinical proof of concept demonstrating potent and sustained activity of different designs of allogeneic CD20xCD22 CAR *in vitro* and *in vivo* against various antigen combinations and models recapitulating antigen escape, a current challenge in the field that can lead to treatment failure. Moreover, UCART20x22 is developed to be available off-the-shelf and to offer a solution for patients whose T-cells are not functional or for which autologous manufacturing fails.

"In this study, we demonstrate that allogeneic CD20x22 CAR T-cells exhibit robust, sustained and dose-dependent activity *in vitro* and *in vivo*, while efficiently targeting primary Non-Hodgkin Lymphoma samples with heterogeneous levels of CD22 and CD20" said Beatriz Aranda Orgilles, Ph.D., Team Leader at Cellectis. "We are very excited to share these encouraging preclinical data that support the transition of UCART20x22 into the clinic and represent a potential therapeutic alternative to CD19-directed therapies."

Preclinical data showed that:

- The use of a bicistronic vector favors the generation of dual CAR T-cells co- expressing both CD20 and CD22 CARs
- CAR T-cells efficiently and persistently eradicate double positive tumor cells over time. More importantly, compared to the single CAR, the dual CAR displayed similarly strong cytolytic activity over time against tumor cells expressing a single antigen, validating the benefit of using a dual CAR approach.
- Both CD20xCD22 CAR versions tested in this study potently targeted tumor cells *in vivo* in a dose dependent manner, with both doses of 3 and 10 million CAR T-cells achieving complete tumor clearance.
- Xenograft models mimicking antigen escape with an aggressive lymphoma model demonstrate that the dual CD20xCD22 CAR is capable to eliminate all tumors despite of losing one antigen, thus providing a potential solution for this challenge in the field.
- Bone marrow and spleen analysis of the surviving animals treated with the dual CAR at the end of the study, revealed that dual CAR T-cells efficiently eradicated the tumor and are capable to persist in the bone marrow for longer than one hundred days
- Primary NHL samples with variable levels of CD20 and CD22 can successfully be eradicated with the dual CD20xCD22 CAR suggesting that UCART20x22 has the potential to reach a large patient population.
- Full tumor elimination is achieved in a dose dependent manner in a Patient-Derived Xenograft (PDX) model recapitulating mantle cell lymphoma at day 20 with a dose of 3 million CAR T-cells or higher.

UCART20x22 features TALEN®-mediated disruptions of the TRAC gene (to minimize the risk of graft-versus-host disease) and of the CD52 gene (to permit use of a CD52-directed monoclonal antibody in patients' lymphodepletion regimen) to enhance CAR T engraftment, expansion and persistence. UCART20x22 is Cellectis' first product candidate fully designed, developed and manufactured in-house at Cellectis.

UCART20x22 is evaluated in the NATHALI-01 Phase 1/2a clinical study in patients with r/r B-NHL (NCT05607420).

This article is available on Cancer Immunology Research website by clicking on this link: https://aacrjournals.org/cancerimmunolres/article/doi/10.1158/2326-6066.CIR-22-0910

About Cellectis

Cellectis is a clinical-stage biotechnology company using its pioneering gene-editing platform to develop life-saving cell and gene therapies. Cellectis 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 make therapeutic gene editing in hemopoietic stem cells for various diseases. As a clinical-stage biopharmaceutical company with over 23 years of experience and expertise in gene editing, Cellectis is developing life-changing product candidates utilizing TALEN®, its gene editing technology, and PulseAgile, its pioneering electroporation system to harness the power of the immune system in order to treat diseases with unmet medical needs. Cellectis' headquarters are in Paris, France, with locations in New York, New York and Raleigh, North Carolina. Cellectis is listed on the Nasdaq Global Market (ticker: CLLS) and on Euronext Growth (ticker: ALCLS).

Forward-looking Statements

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 "anticipate," "believe," "intend", "expect," "plan," "scheduled," "could" and "will," 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. Forward-looking statements include statements about advancements, timing and progress of clinical trials, the potential of our innovation and preclinical programs. These forward-looking statements are made in light of information currently available to us and are subject to numerous risks and uncertainties, including with respect to the numerous risks associated with biopharmaceutical product candidate development. With respect to our cash runway, our operating plans, including product development plans, may change as a result of various factors, including factors currently unknown to us. Furthermore, many other important factors, including those described in our Annual Report on Form 20-F and the financial report (including the management report) for the year ended December 31, 2022 and subsequent filings Cellectis makes with the Securities Exchange Commission from time to time, 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.

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Attachment

- UCART20x22 article PR.pdf (https://ml.globenewswire.com/Resource/Download/5aa36471-5040-4c13-bf4c-8022aa6fab1d)