Cellectis S.A.
8, rue de la Croix Jarry
75013 Paris, France

October 10, 2017

Correspondence Filing via EDGAR Submission

Mr. Chris Edwards
Ms. Erin Jaskot
Office of Healthcare & Insurance
Division of Corporation Finance
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: Cellectis S.A.
Form 20-F for Fiscal Year Ended December 31, 2016
Filed March 23, 2017
File No. 001-36891

Dear Mr. Edwards and Ms. Jaskot:

On behalf of Cellectis S.A. (the "*Company*"), I submit the Company's response to the comment contained in the letter of the Staff (the "*Staff*") of the U.S. Securities and Exchange Commission (the "*Commission*") dated September 12, 2017 relating to the Company's aforementioned Form 20-F. For ease of reference, the text of the Staff's comment is also set forth below (in bold) in its entirety, with the Company's response following such text.

Form 20-F

Current Intellectual Property Portfolio, page 76

1. **In future filings, for each of your material product candidates, please expand your disclosure to discuss the type of patent protection you have (e.g., composition of matter, use or process) and the expiration (or expected expiration) dates of the most significant patents within the portfolio. Please ensure that your disclosure specifically addresses the patent expiration dates for any patents related to UCART19 and UCART123.**

Response: The Company acknowledges the Staff's comment. In future filings, the Company will expand its disclosure to discuss the type of patent protection that the Company has and the expiration, or expected expiration, dates of the most significant patents within the portfolio, including UCART19 and UCART123.

The Company's proposed disclosure based on its Form 20-F for the fiscal year ended December 31, 2016, is presented in Annex A hereto, with the additional language underlined and deletions struck through.

* * * *

If you have any questions in connection with the foregoing, please contact me by telephone at +33 (0)7 76 98 70 74 or by e-mail at marie-bleuenn.terrier@cellectis.com.

Very truly yours,

Cellectis S.A.

By: /s/ Marie-Bleuenn Terrier
Marie-Bleuenn Terrier
General Counsel

cc: André Choulika
Chief Executive Officer, Cellectis S.A.

Boris Dolgonos
Jones Day

ANNEX A

Current Intellectual Property Portfolio

As a result of the licensing opportunities described below and our continuing research and development efforts, our intellectual property estate now contains patent applications that cover our products, including claims that cover:

- methods central to genome engineering and gene editing, including methods of homologous recombination, nuclease-based gene targeting, replacement, insertions and/or knock-out;
- the main products we use in the manufacturing process, including nucleases;
- manufacturing steps, including cell electroporation, transformation and genetic modifications;
- engineered cells;
- ~~plant traits and methods for gene editing plant cells;~~
- single-chain and multi-subunit CARs expressed at the surface of T-cells;
- specific gene inactivation and suicide gene expression; ~~and~~
- allogeneic and autologous treatment strategies using our T-cell products~~.~~; and
- plant traits and methods for gene editing plant cells.

The issued patents in our portfolio consist of approximately 26 Cellectis-owned and 46 in-licensed U.S. patents, 14 Cellectis-owned and 11 in-licensed European patents, and 45 Cellectis-owned and 11 in-licensed patents in other jurisdictions, including Australia, Canada, China, Hong Kong, India, Israel, Japan, Korea, Mexico and Singapore.

The pending patent applications in our portfolio consist of approximately 73 Cellectis-owned and 18 in licensed U.S. patent applications, 48 Cellectis-owned and 20 in-licensed European patent applications, and 322 Cellectis-owned and 70 in-licensed patent applications pending in other jurisdictions, including Australia, Brazil, Canada, China, Hong Kong, India, Israel, Japan, Korea, Mexico and Singapore.

Our portfolio includes a total of 144 owned and in-licensed granted patents, and 551 owned and in licensed patent applications.

Our UCART product candidates rely for each product candidate upon one or more patent rights protecting various aspects of the technologies, including rights relating to:

- the genetic editing of T-cells, using TALEN technology or meganuclease technology, covered by approximately twelve Cellectis-owned patent families and three in-licensed patent families;
- the insertion of transgenes into T-cells using electroporation of mRNA, covered by approximately five Cellectis-owned patent families;
- the appending of attributes to T-cells, covered by approximately eight Cellectis-owned patent families and one in-licensed patent family;

- the molecular structure of CARs, covered by approximately six Cellectis-owned patent families; and
- specific CARs that target selected antigen markers are covered by approximately fifteen Cellectis-owned patent applications and one in-licensed patent family.

For additional information, see "—Gene-Editing Platform" below.

Similarly, our most advanced plant product candidates each rely upon one or more patent rights relating to:

- the genetic editing of plants using TALEN technology, covered by approximately six Cellectis-owned patent families and two in-licensed patent families;
- the genetic editing of plants using meganuclease technology, covered by approximately eight Cellectis-owned patent families and one in-licensed patent family;
- the genetic editing of plants using CRISPR-Cas9 technology, covered by approximately two Cellectis-owned patent families and three in-licensed patent families; and
- specific plant traits, which are covered by approximately twelve Cellectis-owned patent families.

Individual patent terms extend for varying periods of time, depending upon the date of filing of the patent application, the date of patent issuance, and the legal term of patents in the countries in which they are obtained. In most countries in which we file patent applications, including the United States, the patent term is 20 years from the date of filing of the first non-provisional application to which priority is claimed. In certain instances, a patent term can be extended under certain circumstances. For example, in the United States, the term of a patent that covers an FDA-approved drug may be eligible for a patent term restoration of up to five years to effectively compensate for the patent term lost during the FDA regulatory review process, subject to several limitations discussed below under "—Our Intellectual Property Strategy." Also, in the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. Our issued patents will expire on dates ranging from ~~2015~~ 2019 to 2035. If patents are issued on our pending patent applications, the resulting patents are projected to expire on dates ranging from 2023 to 2035. However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country, and the validity and enforceability of the patent.

The patent portfolios for our most advanced product candidates, UCART 19 and UCART123, are summarized below.

Gene-Editing Platform

Each of our UCART product candidates relies upon our gene-editing platform and T-cell and CAR technology platforms. The patent portfolio covering these platforms and technologies, includes approximately 30 issued patents or pending patent applications. These issued patents and pending patent applications, which expire between 2019 and 2033, cover product claims or process claims relevant to each of our product candidates, including UCART19 and UCART123.

UCART19

In addition to the patent portfolio relating to our platform and technologies, described above, our patent portfolio relating specifically to UCART19 includes pending patent applications from the patent family WO2014184143 (CD19 Specific Chimeric Antigen Receptor and Uses Thereof). We believe these pending patent applications, which, if issued, would expire in 2034, include claims to cover the composition of matter of UCART19, methods of manufacture of UCART19, and methods to use UCART19 in treatment.

UCART123

In addition to the patent portfolio relating to our platform and technologies, described above, our patent portfolio relating specifically to UCART123 includes pending patent applications from the patent family WO2015140268 (CD123 Specific Chimeric Antigen Receptors for Cancer Immunotherapy). We believe these pending patent applications, which, if issued, would expire in 2034, include claims to cover the composition of matter of UCART123, methods of manufacture of UCART123, and methods to use UCART123 in treatment.

In each case, some of the issued patents and pending patent applications, if issued, may be eligible for patent term extension and patent term adjustment, thereby extending their terms, as described above.