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

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) or (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2016

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-36891

CELLECTIS S.A.
(Exact name of Registrant as specified in its charter and translation of Registrant's name into English)

France
(Jurisdiction of incorporation or organization)

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

Marie-Bleuenn Terrier
General Counsel
Cellectis S.A.
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Tel: +33 (0)1 81 69 16 00, Fax: +33 (0)1 81 69 16 06
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
American Depositary Shares, each representing one ordinary share, nominal value €0.05 per share	**Nasdaq Global Market**
Ordinary shares, nominal value €0.05 per share*	**Nasdaq Global Market***

*Not for trading, but only in connection with the registration of the American Depositary Shares.

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the Annual Report.

Ordinary shares, nominal value €0.05 per share: 35,335,060 as of December 31, 2016

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Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

If this report is an annual or transition report, indicate by check mark, if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board ☒ Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow: Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

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INTRODUCTION

Unless otherwise indicated or the context otherwise requires, references in this Annual Report to, "Cellectis," the "Company," "we," "us" and "our" refer to Cellectis S.A. and its consolidated subsidiaries.

We own various trademark registrations and applications, and unregistered trademarks and servicemarks, including "Cellectis®", "TALEN®", "Calyxt™" and our corporate logos, and all such trademarks and servicemarks appearing in this Annual Report are the property of Cellectis. All other trade names, trademarks and servicemarks of other companies appearing in this Annual Report are the property of their respective holders. Solely for convenience, the trademarks and trade names in this Annual Report may be referred to without the ® and ™ symbols, but such references, or the failure of such symbols to appear, should not be construed as any indication that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend to use or display other companies' trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Our audited consolidated financial statements have been prepared in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB. Our consolidated financial statements are presented in euros.

All references in this Annual Report to "$," "US$," "U.S.$," "U.S. dollars," "dollars" and "USD" mean U.S. dollars and all references to "€" and "euros," mean euros, unless otherwise noted. Throughout this Annual Report, references to ADSs mean ADSs or ordinary shares represented by ADSs, as the case may be.

Note Regarding Use of Non-GAAP Financial Measures

Cellectis S.A. presents Adjusted Net Income (Loss) attributable to shareholders of Cellectis in this Annual Report on Form 20-F. Adjusted Net Income (Loss) attributable to shareholders of Cellectis is not a measure calculated in accordance with IFRS. We have included in this Annual Report on Form 20-F a reconciliation of this figure to Net Income (Loss) attributable to shareholders of Cellectis, the most directly comparable financial measure calculated in accordance with IFRS. Because Adjusted Net Income (Loss) attributable to shareholders of Cellectis excludes Non-cash stock-based compensation expense—a non-cash expense, we believe that this financial measure, when considered together with our IFRS financial statements, can enhance an overall understanding of Cellectis' financial performance. Moreover, our management views the Company's operations, and manages its business, based, in part, on this financial measure. In particular, we believe that the elimination of Non-cash stock-based expenses from Net Income (Loss) attributable to shareholders of Cellectis can provide a useful measure for period-to-period comparisons of our core businesses. Our use of Adjusted Net Income (Loss) attributable to shareholders of Cellectis has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under IFRS. Some of these limitations are: (a) other companies, including companies in our industries which have similar Stock-based compensations, may address the impact of Non-cash stock-based compensation expense differently; and (b) other companies may report Adjusted Net Income (Loss) attributable to shareholders of Cellectis or similarly titled measures but calculate them differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Adjusted Net Income (Loss) attributable to shareholders of Cellectis alongside our other IFRS financial results, including Net Income (Loss) attributable to shareholders of Cellectis.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report contains "forward-looking statements" within the meaning of applicable federal securities laws, including the Private Securities Litigation Reform Act of 1995. All statements other than present and historical facts and conditions contained in this Annual Report, including statements regarding our future results of operations and financial position, business strategy, plans and our objectives for future operations, are forward-looking statements. These forward-looking statements are subject to numerous risks and uncertainties and are made in light of information currently available to us. Many important factors, in addition to the factors described in this Annual Report, may adversely affect such forward-looking statements. When used in this Annual Report, the words "anticipate," "believe," "can," "could," "estimate," "expect," "intend," "is designed to," "may," "might," "plan," "potential," "predict," "objective," "should," or the negative of these and similar expressions identify forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the initiation, timing, progress and results of our pre-clinical and clinical studies, and our research and development programs;
- the initiation, timing, progress and results of our agricultural biotechnology research and development program;
- our ability to advance product candidates into, and successfully complete, clinical studies;
- our ability to advance plant products into, and successfully complete, field trials;
- the timing or regulatory filings and the likelihood of favorable regulatory outcomes and approvals;
- the regulatory treatment of our plant products;
- regulatory developments in the United States and foreign countries;
- the commercialization of our product candidates, if approved;
- the commercialization of our plant products;
- the pricing and reimbursement of our product candidates, if approved;
- our ability to contract on commercially reasonable terms with CROs, third-party suppliers of biological raw materials and manufacturers;
- the implementation of our business model, strategic plans for our business, product candidates and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- the ability of third parties with whom we contract to successfully conduct, supervise and monitor clinical studies for our therapeutic product candidates or our plant products;
- estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- our ability to obtain additional funding for our operations;
- the potential benefits of our strategic alliances and our ability to enter into future strategic arrangements;
- the ability and willingness of collaborators pursuant to our strategic alliances to actively pursue development activities under our collaboration agreements;
- our receipt of milestone or royalty payments pursuant to our strategic alliances with Servier and Pfizer;
- our ability to maintain and establish collaborations or obtain additional grant funding;
- the rate and degree of market acceptance of our product candidates;
- our status as a passive foreign investment company for U.S. federal income tax purposes;
- our financial performance;
- our ability to attract and retain key scientific and management personnel;
- our expectations regarding the period during which we qualify as a foreign private issuer;
- developments relating to our competitors and our industry, including competing therapies; and
- other risks and uncertainties, including those listed under the caption "Risk Factors."

You should refer to the section of this Annual Report titled “Risk Factors” for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this Annual Report will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. We qualify all of our forward-looking statements by these cautionary statements.

This Annual Report contains market data and industry forecasts that were obtained from industry publications. These data and forecasts involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market position, market opportunity and market size information included in this Annual Report is generally reliable, such information is inherently imprecise.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

The following selected consolidated statements of operations data for the years ended December 31, 2014, 2015 and 2016 and the selected consolidated statement of financial position data as of December 31, 2015 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this Annual Report. The selected consolidated statements of operations data for the year ended December 31, 2013 and the selected consolidated statement of financial position data as of December 31, 2013 and 2014 have been derived from our audited consolidated financial statements not included in this Annual Report. Our audited consolidated financial statements have been prepared in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB.

The following selected consolidated financial data for the periods and as of the dates indicated are qualified by reference to and should be read in conjunction with our consolidated financial statements and related notes beginning on page F-1 of this Annual Report, as well as the sections titled "Operating And Financial Review And Prospects" and "Foreign Currency Exchange Rates" included elsewhere in this Annual Report.

Our historical results for any prior period do not necessarily indicate our results to be expected for any future period.

	Year Ended December 31,				
	2013 €	2014 €	2015 €	2016 €	2016 $ (3)
	(in thousands, except share and per share data)				
Revenues and other income	**12,724**	**26,453**	**56,385**	**51,007**	**53,766**
Operating expenses					
Royalty expenses	(542)	(3,035)	(2,475)	(1,605)	(1,692)
Research and development expenses	(17,844)	(14,407)	(52,410)	(70,899)	(74,735)
Selling, general and administrative expenses	(19,034)	(13,114)	(27,238)	(39,230)	(41,353)
Other operating income	478	—	1,060	345	363
Other operating expenses	(2,310)	(1,142)	(3,246)	(434)	(458)
Operating income (loss)	**(26,528)**	**(5,245)**	**(27,924)**	**(60,818)**	**(64,108)**
Loss from discontinued operations	(29,580)	(2,822)	—	—	—
Financial gain (loss)	**(312)**	**7,095**	**7,550**	**42**	**44**
Net income (loss)	**(56,419)**	**(972)**	**(20,373)**	**(60,776)**	**(64,064)**
Attributable to shareholders of Cellectis	(55,402)	20	(20,544)	(60,776)	(64,064)
Attributable to non-controlling interests	(1,017)	(992)	171	—	—
Earnings per share attributable to shareholders of Cellectis (1)					
Basic and diluted (2)	(2.68)	0.00	(0.60)	(1.72)	(1.82)
Number of shares used for computing					
Basic (1)	20,653,912	26,071,709	34,149,908	35,289,932	35,289,932
Diluted (1)	20,653,912	26,192,652	34,522,910	35,811,772	35,811,772
Other operating data					
Adjusted Net Income (Loss) attributable to shareholders of Cellectis (4)	(54,941)	568	9,559	(7,802)	(8,224)

(1) See Note 16 to our financial statements for further details on the calculation of basic and diluted loss per ordinary share.

(2) Potential ordinary shares resulting from the exercise of share warrants and employee warrants are antidilutive.
(3) Translated only for convenience into U.S. dollars at an exchange rate of €1.00 = $1.0541, the European Central Bank's ("ECB") daily reference exchange rate on December 31, 2016, as published by Banque de France.
(4) Adjusted Net Income (Loss) attributable to shareholders of Cellectis is not a measure calculated in accordance with IFRS. We define Adjusted Net Income (Loss) attributable to shareholders of Cellectis as our Net Income (Loss) attributable to shareholders of Cellectis, adjusted to eliminate the impact of Non-cash stock-based compensation expense. Because Adjusted Net Income (Loss) attributable to shareholders of Cellectis excludes Non-cash stock-based compensation expense—a non-cash expense, we believe that this financial measure, when considered together with our IFRS financial statements, can enhance an overall understanding of Cellectis' financial performance. Moreover, our management views the Company's operations, and manages its business, based, in part, on this financial measure. In particular, we believe that the elimination of Non-cash stock-based expenses from Net Income (Loss) attributable to shareholders of Cellectis can provide a useful measure for period-to-period comparisons of our core businesses. Our use of Adjusted Net Income (Loss) attributable to shareholders of Cellectis has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under IFRS. Some of these limitations are: (a) other companies, including companies in our industry that use similar stock-based compensation, may address the impact of Non-cash stock-based compensation expense differently; and (b) other companies may report Adjusted Net Income (Loss) attributable to shareholders or similarly titled measures but calculate them differently, which reduces their usefulness as a comparative measure. Because of these and other limitations, you should consider Adjusted Net Income (Loss) attributable to shareholders of Cellectis alongside our IFRS financial results, including Net Income (Loss) attributable to shareholders of Cellectis. Please refer below for a reconciliation of Adjusted Net Income (Loss) attributable to shareholders of Cellectis to Net Income (Loss) attributable to shareholders of Cellectis, which is the most directly comparable financial measure calculated in accordance with IFRS.

Consolidated Statement of Financial Position

	Year Ended December 31,				
	2013	2014	2015	2016	2016 $
	€	€	€	€	$ (3)
	(€ and $ in thousands)				
Current financial assets and Cash and cash equivalents	7,559	112,347	314,238	276,216	291,159
Total assets	28,875	137,614	341,062	314,422	331,432
Total shareholders' equity	2,517	59,527	263,619	260,574	274,671
Total non-current liabilities	3,812	3,222	503	560	590
Total current liabilities	22,546	74,865	76,940	53,288	56,171

Reconciliation of Net Income (Loss) attributable to shareholders of Cellectis to Adjusted Net Income (Loss) attributable to shareholders of Cellectis

	Year Ended December 31,			
	2013	2014	2015	2016
	(€ in thousands)			
Net Income (Loss) attributable to shareholders of Cellectis	**(55,402)**	**20**	**(20,544)**	**(60,776)**
Adjustment of non-cash stock-based compensation expense				
Research and development expenses	189	225	18,532	30,008
Selling, general and administrative expenses	272	323	11,570	22,967
Total non-cash stock-based compensation expense	461	548	30,103	52,974
Adjusted Net Income (Loss) attributable to shareholders of Cellectis	**(54,941)**	**568**	**9,559**	**(7,802)**

Exchange Rate Information

The following table sets forth, for each period indicated, the low and high exchange rates for euros expressed in U.S. dollars, the exchange rate at the end of such period and the average of such exchange rates on the last day of each month during such period, based on the ECB's reference U.S. Dollar exchange rate for Euro, as published by Banque de France. The exchange rates set forth below are provided for reference only and to demonstrate trends in exchange rates. They should not be relied upon, and the actual exchange rates used throughout this Annual Report may vary.

	Year Ended December 31,				
	2012	2013	2014	2015	2016
High	1.3454	1.3814	1.3953	1.2043	1.1569
Low	1.2089	1.2768	1.2141	1.0552	1.0364
Rate at end of period	1.3194	1.3791	1.2141	1.0887	1.0541
Average rate per period	1.2932	1.3308	1.3211	1.1046	1.1066

The following table sets forth, for each of the periods indicated, the low and high exchange rates for euros expressed in U.S. dollars and the exchange rate at the end of the periods indicated based on the ECB's reference U.S. Dollar exchange rate for Euro, as published by Banque de France.

	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017
High	1.1296	1.1236	1.1095	1.0762	1.0755	1.0808
Low	1.1146	1.0872	1.0548	1.0364	1.0385	1.0513
Rate at end of period	1.1161	1.0946	1.0635	1.0541	1.0755	1.0597

On March 22, 2017, the ECB's reference U.S. Dollar exchange rate for the Euro, as published by the Banque de France, was €1.00 = $1.0807.

Information presented on a constant currency basis in this Annual Report is calculated by translating current year results at prior year average exchange rates. Management reviews and analyzes business results excluding the effect of foreign currency translation because they believe this better represents our underlying business trends.

In various places throughout this Annual Report we show financial amounts in both U.S. dollars and euros. Unless otherwise stated, these translations, which are provided solely for convenience, are made at the exchange rate of €1.00 = $1.0541, the ECB's daily reference exchange rate on December 31, 2016, as published by Banque de France.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Our business and our industry are subject to significant risks. You should carefully consider all of the information set forth in this Annual Report, including the following risk factors. Our business, financial condition or results of operations could be materially adversely affected by any of these risks.

Risks Related to Our Business and Industry

We have a limited operating history, which makes it difficult to evaluate our current business and future prospects and may increase the risk of your investment.

We are an early-stage biopharmaceutical gene-editing company with a limited operating history. Investment in biopharmaceutical and agricultural biotechnology product development is a highly speculative endeavor. It entails substantial upfront capital expenditures and there is significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, to gain regulatory approval or to become commercially viable. In our therapeutics

business, we are focused on developing products using our gene-editing platform to develop genetically modified T-cells that express a CAR and are designed to target and kill cancer cells. While there have been significant advances in cell-based immunotherapy, our gene-editing platform and T-cell and CAR technologies are new and unproven. Most of the product candidates that we are developing or co-developing are in pre-clinical stages, while one product candidate, UCART123, has received FDA approval to proceed, subject to the approval of our proposed studies by institutional review boards, or IRBs, with clinical development, and one product candidate, UCART19, which is exclusively licensed to Les Laboratories Servier S.A.S., or Servier, commenced clinical development in 2016 through two clinical studies being sponsored by Servier. We have not yet generated any revenue from product sales to date. In our agricultural biotechnology business, we are exploring the use of our gene-editing technologies to develop healthier food products for a growing population. Our plant products are in various stages of development, and we have not yet generated any revenues from sales of these plant products.

Our limited operating history may make it difficult to evaluate our current business and our future prospects. We have encountered, and will continue to encounter, risks and difficulties frequently experienced by growing companies in rapidly developing and changing industries, such as the biopharmaceutical and agricultural biotechnology industries, including challenges in forecasting accuracy, determining appropriate investments of our limited resources, gaining market acceptance of our gene-editing platform, managing a complex regulatory landscape and developing new product candidates. Our current operating model may require changes in order for us to scale our operations efficiently. You should consider our business and prospects in light of the risks and difficulties we face as an early-stage company focused on developing products in the fields of immunotherapy and agricultural biotechnology.

We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future.

We devote most of our financial resources to research and development relating to our CAR T-cell immunotherapy product candidates. We finance our current immuno-oncology operations through strategic alliances with pharmaceutical companies, including Servier and Pfizer Inc., or Pfizer, as well as through the sale of equity securities and, to a lesser extent, obtaining public funding in support of innovation, reimbursements of research tax credit claims, and royalties on our licensed technology. During 2013 and 2014, we have received €61.0 million through sales of equity, and €73.7 million in payments made to us under our collaboration agreements with Pfizer and Servier. In addition, in March 2015, we completed our U.S. Initial Public Offering of 5,500,000 American Depositary Shares on the Nasdaq Global Market for gross proceeds of $228.3 million. In 2015 and 2016, we received respectively €46.9 million and €24.7 million in payments pursuant to the Pfizer and Servier collaborations. Our research and development expenses for the years ended December 31, 2015 and 2016 were €52.4 and €70.9 million, respectively. Our net loss for the years ended December 31, 2015 and 2016 was €20.4 million and €60.8 million, respectively.

Among all the UCART products candidates in development by us or by our collaborators, the UCART19 Clinical Studies (as defined in Item 4.B. Business Overview below) commenced in June 2016 and we obtained FDA approval of an IND for two Phase I UCART123 Clinical Studies (as defined in Item 4.B. Business Overview below) in February 2017. Notwithstanding the commencement of the UCART19 Clinical Studies and the FDA approval to commence the UCART123 Clinical Studies, it will be several years, if ever, before we obtain regulatory approval for, and are ready for commercialization of, a product candidate. Moreover, our submissions for IRB approval for our UCART123 Clinical Studies are pending at New York-Presbyterian/Weill Cornell Medical Center (or "Weill Cornell") and the University of Texas MD Anderson Cancer Center ("MD Anderson Cancer Center"), and we may not receive approvals from these IRBs, in which case the UCART123 Clinical Studies would not be permitted to commence. Even if we or our collaborators successfully commence and complete clinical studies and obtain regulatory approval to market a product candidate, any future revenues will depend upon the size of any markets in which the product candidates are approved for sale as well as the market share captured by such product candidates, market acceptance of such product candidates and levels of reimbursement from third-party payors.

We expect to continue to incur significant expenses and operating losses for the foreseeable future. We expect our losses and our cash utilization to increase in the near term as we commence the UCART123 Clinical Studies, file additional IND and/or foreign equivalent filings for additional product candidates and conduct research and development for other product candidates. In addition, we anticipate that such expenses will increase further and such increases may be substantial if and as we:

- continue to advance the research and development of our current and future immuno-oncology product candidates;
- continue, through Calyxt, to advance the research and development of our current and future agricultural product candidates;
- initiate additional clinical studies for, or additional pre-clinical development of, our immuno-oncology product candidates;
- conduct and multiply, though Calyxt, additional field trials of our agricultural product candidates;
- further develop and refine the manufacturing process for our immuno-oncology product candidates;

- change or add additional manufacturers or suppliers of biological materials;
- seek regulatory and marketing approvals for our product candidates, if any, that successfully complete development;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- seek to identify and validate additional product candidates;
- acquire or in-license other product candidates, technologies, germplasm or other biological material;
- make milestone or other payments under any in-license agreements;
- maintain, protect and expand our intellectual property portfolio;
- secure manufacturing arrangements for commercial production;
- seek to attract and retain new and existing skilled personnel;
- create additional infrastructure to support our operations as a public company; and
- experience any delays or encounter issues with any of the above.

The net losses we incur may fluctuate significantly from year to year and quarter to quarter, such that a period-to-period comparison of our results of operations may not be a good indication of our future performance.

We may need to raise additional funding. Additional funding may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We are currently preparing to commence the UCART123 Clinical Studies and we are advancing our other product candidates to and through pre-clinical testing. The process of developing CAR T-cell product candidates and conducting clinical studies is expensive, lengthy and risky, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we commence the UCART123 Clinical Studies, file additional protocols under our current IND, file additional IND and/or foreign equivalent filings for additional product candidates, and conduct research and development for our other product candidates. In addition, subject to obtaining regulatory approval of any product candidates, we expect to incur significant commercialization expenses.

As of December 31, 2016, we had cash and cash equivalents and current financial assets of approximately €276 million. We believe our cash and cash equivalents and our cash flow from operations (including payments we expect to receive pursuant to our collaboration agreements) and government funding of research programs will be sufficient to fund our operations through 2019. However, in order to complete the development process, obtain regulatory approval and commercialize, if approved, any of our product candidates and to obtain regulatory approval for, if necessary, and commercialize our lead plant sciences products, we may require additional funding. Also, our operating plan, including our product development plans, may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements, or a combination of these approaches.

In addition, our ability to raise additional capital in equity offerings will be significantly limited, as described under "—We are limited in our ability to raise additional share capital, which may make it difficult for us to raise capital to fund our operations." Debt financing, if available, would result in increased fixed payment obligations and a portion of our operating cash flows, if any, being dedicated to the payment of principal and interest on such indebtedness. In addition, debt financing may involve agreements that include restrictive covenants that impose operating restrictions, such as restrictions on the incurrence of additional debt, the making of certain capital expenditures or the declaration of dividends. To the extent we raise additional funds through arrangements with collaborators or otherwise, we may be required to relinquish some of our technologies, product candidates or revenue streams, license our technologies or product candidates on unfavorable terms, or otherwise agree to terms unfavorable to us.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or product candidate development programs or the commercialization of any product candidate or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, operating results and prospects.

We are limited in our ability to raise additional share capital, which may make it difficult for us to raise capital to fund our operations.

Under French law, our share capital generally may be increased with the approval of a two-thirds majority vote of the shareholders present, represented by proxy, or voting by mail obtained at an extraordinary general shareholders' meeting following the recommendation of our board of directors. The shareholders may delegate to our board of directors either the authority (*délégation de compétence*) or the power (*délégation de pouvoir*) to carry out any increase in the share capital. Accordingly, our board of directors may be precluded from issuing additional share capital if the prior approval of the shareholders is not duly obtained.

Risks Related to the Discovery, Development and Commercialization of Our Therapeutic Product Candidates

Our therapeutic product candidate development programs are still in the discovery or pre-clinical proof-of-concept phase and may be unsuccessful.

Except for UCART19 which has been exclusively licensed to Servier, the use of our gene-editing technologies in the product candidates we develop have not been approved for, nor undergone clinical testing in humans and have only undergone limited testing in animals. In February 2017, we received FDA approval under an IND to commence our UCART123 Clinical Studies. However, IRB approvals are still pending at Weill Cornell and MD Anderson Cancer Center, and we may not commence the UCART123 Clinical Studies until such approvals are received. Clinical trial agreements with Weill Cornell are being negotiated and such agreements must be in place before our UCART123 Clinical Studies may be commenced. Results from animal studies are not necessarily predictive of results in clinical studies. Even if certain of our product candidates progress through clinical studies, these product candidates may fail to show the desired safety and efficacy in clinical development despite demonstrating positive results in animal studies. For example, while our animal studies of product candidates may result in evidence of tumor cell elimination, there can be no assurance that the success we achieve in such animal studies for these product candidates will result in success in any clinical studies.

Because our current product candidates are still in the early stages of development, with the majority of our product candidates in the discovery or pre-clinical proof-of-concept phase, there can be no assurance that our research and development activities will result in product candidates we can advance through clinical development. Although Servier commenced the UCART19 Clinical Studies in June 2016 and we are pursuing IRB approvals to commence our UCART123 Clinical Studies, the commencement and results of such clinical studies are subject to a variety of factors and considerations and we cannot assure you that we or our collaborators will achieve the applicable targets in these studies. Our other product candidates are in various stages of pre-clinical development and we have limited pre-clinical data evaluating many of these product candidates. Because of the early stage of development of our product candidates, we have not yet demonstrated the safety, specificity and clinical benefits of our product candidates in humans, and we cannot assure you that the results of any human trials will demonstrate the value and efficacy of our platform. Moreover, there are a number of regulatory requirements that we must satisfy in connection with our UCART123 Clinical Studies, including approval of our proposed studies by IRBs, and that we must satisfy before we can commence additional clinical trials in the United States and the European Union, or EU, with respect to our other product candidates. Satisfaction of these requirements will entail substantial time, effort and financial resources. We may never satisfy these requirements. Any time, effort and financial resources we expend on our other early-stage product candidate development programs may adversely affect our ability to continue development and commercialization of our more advanced product candidates and we may never commence additional clinical studies despite expending significant resources in pursuit of their development. Further, our UCART123 Clinical Studies or other clinical studies, if any, that we commence may not be successful and such product candidates may never be approved by the U.S. Food and Drug Administration, or FDA, the European Medicines Agency, or EMA, or any other regulatory agency.

Early data from compassionate use treatment and from clinical trials are not predictive of success in later clinical trials.

In December 2016, during a meeting with the National Institutes of Health's Office of Biotechnology Activities' Recombinant DNA Advisory Committee, or the RAC, Pfizer and Servier presented preliminary clinical data for UCART19, including data from UCART19 Clinical Studies and from three clinical uses of UCART19 on a compassionate basis. These three compassionate use patients have been treated under U.K. special licenses from the Medicines & Healthcare products Regulatory Agency (MHRA) to administer UCART19 product candidate to a patient on a compassionate use basis. Compassionate use refers to the use of an investigational drug outside of a clinical trial to treat a patient with a serious or immediately life-threatening disease or condition who has no comparable or satisfactory alternative treatment options.

We cannot assure you that the administration of UCART19 to other patients will have results that are similar to those reported by Pfizer and Servier. Such results are necessarily preliminary in nature, do not bear statistical significance and should not be viewed as predictive of ultimate success. It is possible that such results will not continue or may not be repeated in other potential compassionate uses or in ongoing or future clinical trials on UCART19 or other UCART product candidates.

We have limited experience in conducting or managing clinical trials for potential therapeutic products.

In February 2017, we received FDA approval of our IND for the UCART123 Clinical Studies, and we are seeking approval from IRBs, which are pending at Weill Cornell and MD Anderson Cancer Center. We have limited experience in conducting or managing the clinical trials necessary to obtain regulatory approvals for any product candidate. We intend to rely on our collaborators or third parties, such as clinical research organizations, or CROs, medical institutions and clinical investigators to perform these functions. Our reliance on third parties for clinical development activities reduces our control over these activities. Third-party contractors may not complete activities on schedule, or may not conduct clinical trials in accordance with regulatory requirements or our trial design. If these third parties do not successfully carry out their contractual duties or meet required performance standards or expected deadlines, we might be required to replace them or the data that they provide could be rejected by the FDA or comparable foreign regulatory bodies, all of which may result in a delay of the affected trial and additional program costs.

We may encounter substantial delays in our clinical trials or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Pre-clinical testing of most of our product candidates is still ongoing. Pre-clinical testing and clinical trials, such as our proposed UCART123 Clinical Studies, are long, expensive and unpredictable processes that can be subject to extensive delays. Moreover, our submissions for IRB approval for our UCART123 Clinical Studies are pending at Weill Cornell and MD Anderson Cancer Center, and we may not receive approvals from these IRBs, in which case the UCART123 Clinical Studies would not be permitted to commence. We cannot guarantee that any pre-clinical studies or clinical trials will be conducted as planned or completed on schedule, if at all. It may take several years to complete the pre-clinical testing and clinical development necessary to commercialize a product candidate, and delays or failure can occur at any stage. Interim results of clinical trials do not necessarily predict final results, and success in pre-clinical testing and early clinical trials does not ensure that later clinical trials will be successful. A number of companies in the pharmaceutical, biopharmaceutical and biotechnology industries have suffered significant setbacks in advanced clinical trials even after promising results in earlier trials, including a number of patient deaths in recent CAR-T trials conducted in the United States, and we cannot be certain that our product candidates, including UCART123, will not face similar setbacks. In addition, the design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. An unfavorable outcome in one or more clinical trials would be a major setback for our product candidates and for us and may require us or our collaborators to delay, reduce the scope of, or eliminate one or more product candidate development programs, any of which could have a material adverse effect on our business, financial condition and prospects.

In connection with clinical testing and trials on product candidates we develop for ourselves or on behalf of our collaborators, we may face a number of risks, including:

- pre-clinical results may not be indicative of clinical results in humans;
- a product candidate may be ineffective, inferior to existing approved drugs or therapies or unacceptably toxic, or may have unacceptable side effects;
- patients may die or suffer other adverse effects for reasons that may or may not be related to the product candidate being tested;
- the results may not confirm the favorable results of earlier testing or trials; and
- the results may not meet the level of statistical significance required by the FDA and/or other applicable regulatory agencies to establish the safety and efficacy of our product candidates.

In addition, a number of events, including any of the following, could delay the completion of our future clinical trials (including the UCART123 Clinical Studies) or those of our collaborators (including the UCART19 Clinical Studies) and negatively impact the ability to obtain regulatory approval for, and to market and sell, a particular product candidate:

- conditions imposed on us or our collaborators by the FDA or any foreign regulatory authority regarding the scope or design of clinical trials;
- delays in obtaining, or our inability to obtain, required approvals from institutional review boards, or IRBs, or other reviewing entities at clinical sites selected for participation in our clinical trials;
- insufficient supply or deficient quality of the product candidates or other materials necessary to conduct the clinical trials;

- delays in obtaining regulatory agency approval for the conduct of the clinical trials;
- lower-than-anticipated enrollment and retention rate of subjects in clinical trials for a variety of reasons, including size of patient population, nature of trial protocol, the availability of approved effective treatments for the relevant disease and competition from other clinical trial programs for similar indications;
- serious and unexpected drug-related side effects experienced by patients in clinical trials; or
- failure of our or our collaborators' third-party contractors to meet their contractual obligations in a timely manner.

Data obtained from pre-clinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, we cannot assure you that, in the course of clinical trials, some drawbacks would not appear that reveal that it is not possible or practical to continue development efforts for the subject product candidates.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us or our collaborators, the FDA, the IRBs at the sites where the IRBs are overseeing a trial, or a data safety monitoring board, or DSMB, overseeing the clinical trial at issue, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;
- unfavorable interpretations by FDA or similar foreign regulatory authorities of data, where clinical study plans call for interim data analysis;
- FDA or similar foreign regulatory authorities determine the plan or protocol for the investigation is deficient in design to meet its stated objectives;
- lack of, or failure to, demonstrate efficacy;
- unforeseen safety issues; or
- lack of adequate funding to continue the clinical trial.

In addition, changes in regulatory requirements and guidance may occur and we or our collaborators may need to amend clinical trial protocols to reflect these changes. Amendments may require us or our collaborators to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the cost, timing or successful completion of a clinical trial.

Even if a product candidate successfully completes clinical trials, those results are not necessarily predictive of results of additional trials that may be needed before regulatory approval may be obtained. Although there are a large number of drugs and biologics in development globally, only a small percentage obtain regulatory approval, even fewer are approved for commercialization, and only a small number achieve widespread physician and consumer acceptance.

If the results of our clinical trials are inconclusive or if there are safety concerns or adverse events associated with the product candidates we develop, we may:

- lose any competitive advantages that such product candidates may have;
- be delayed in obtaining marketing approval for the subject product candidates, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions, contraindications or safety warnings;
- be subject to changes with the way the product is administered;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw their approval of the product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy;
- be sued;
- experience damage to our reputation; or
- not reach the milestones triggering payments from our collaborators.

Our product candidates are based on a novel technology, which makes it difficult to predict the time and cost of product candidate development and obtaining regulatory approval. Currently, only a very limited number of gene therapy products have been approved in the United States or Europe.

We have concentrated our research and development efforts on our CAR T-cell immunotherapy product development, including our gene-editing technologies, and our future success depends on the successful development of this therapeutic approach. We are in the early stages of developing our UCART product candidates' platform and there can be no assurance that any development problems we experience in the future related to our gene-editing technologies will not cause significant delays or unanticipated costs, or that such development problems can be overcome. We may also experience delays in developing a sustainable, reproducible and scalable manufacturing process or transferring that process to commercial partners, which may prevent us from completing our clinical studies or commercializing our products on a timely or profitable basis, if at all.

In addition, the clinical study requirements of the FDA, EMA and other regulatory agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate are determined according to the type, complexity, novelty and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more complex and consequently more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates. Currently, two gene therapy products received marketing authorization from the EMA and have been approved in Europe, and only one gene therapy product has been approved in the United States, which makes it difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in either Europe or the United States. Approvals by the EMA and FDA for existing gene therapy products may not be indicative of what these regulators may require for approval of further gene therapy products. More generally, approvals by any regulatory agency may not be indicative of what any other regulatory agency may require for approval or what such regulatory agencies may require for approval in connection with new product candidates.

The regulatory landscape that will govern our product candidates is uncertain; regulations relating to more established gene therapy and cell therapy products are still developing, and changes in regulatory requirements could result in delays or discontinuation of development of our product candidates or unexpected costs in obtaining regulatory approval.

Because we are developing novel CAR T-cell immunotherapy product candidates that are unique biological entities, the regulatory requirements that we will be subject to are not entirely clear. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. For example, regulatory requirements governing gene therapy products and cell therapy products have changed frequently and may continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. For example, in the United States, the FDA has established the Office of Tissues and Advanced Therapies (OTAT, formerly known as the Office of Cellular, Tissue and Gene Therapies, or OCTGT) within its Center for Biologics Evaluation and Research, or CBER, to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical trials are also subject to review and oversight by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research conducted at the institution participating in the clinical trial. Gene therapy clinical studies conducted at institutions that receive funding for recombinant DNA research from the U.S. National Institutes of Health, or the NIH, are also subject to review by the NIH Office of Biotechnology Activities' Recombinant DNA Advisory Committee, or the RAC. Although the FDA decides whether individual gene therapy protocols may proceed, review process and determinations of other reviewing bodies can impede or delay the initiation of a clinical study, even if the FDA has reviewed the study and approved its initiation. Conversely, the FDA can place an IND application on clinical hold even if such other entities have provided a favorable review. Furthermore, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which a clinical trial will be conducted. In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other regulatory bodies to change the requirements for approval of any of our product candidates.

On February 6, 2017, the FDA notified us that the IND we submitted for our two Phase I UCART123 Clinical Studies could proceed. Our submissions for IRB and IBC approvals are pending at Weill Cornell and MD Anderson Cancer Center, and we may not receive their approvals. If we do not receive IRB approval for our UCART123 Clinical Studies, we will not be able to commence the studies at those institutions. Clinical trial agreements with Weill Cornell and MD Anderson Cancer Center are being negotiated and such agreements must be in place before our UCART123 Clinical Studies may be commenced.

Similarly, complex regulatory environments exist in other jurisdictions in which we might consider seeking regulatory approvals for our product candidates, further complicating the regulatory landscape. For example, in the EU a special committee called the Committee for Advanced Therapies (CAT) was established within the EMA in accordance with Regulation (EC) No 1394/2007 on advanced-therapy medicinal products (ATMPs) to assess the quality, safety and efficacy of ATMPs, and to follow scientific developments in the field. ATMPs include gene therapy products as well as somatic cell therapy products and tissue

engineered products. In this regard, on May 28, 2014, the EMA issued a recommendation that Cellectis' UCART19 be considered a gene therapy product under Regulation (EC) No 1394/2007 on ATMPs. We believe this recommendation is likely to be applicable to our UCART product candidates; however, this recommendation is not definitive until such products obtain regulatory approval for commercialization.

These various regulatory review committees and advisory groups and new or revised guidelines that they promulgate from time to time may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. Because the regulatory landscape for our CAR T-cell immunotherapy product candidates is new, we may face even more cumbersome and complex regulations than those emerging for gene therapy products and cell therapy products. Furthermore, even if our product candidates obtain required regulatory approvals, such approvals may later be withdrawn as a result of changes in regulations or the interpretation of regulations by applicable regulatory agencies.

As we or our collaborators advance our product candidates, we and they will be required to consult with these regulatory and advisory groups and comply with all applicable guidelines, rules and regulations. Because the UCART19 Clinical Studies are being sponsored by Servier in collaboration with Pfizer, they are directly interacting with the relevant regulatory agencies and we are not able to direct such interactions. Some of the discussions among our commercial collaborators and relevant regulatory agencies could generate additional unexpected requirements from regulatory agencies that would apply to our wholly-controlled UCART product candidates, including UCART123, and could lead to potential delays or additional requirements. For example, as a result of such interactions, regulators may require that we implement additional studies or testing with respect to our product candidates or modify our clinical studies, including the UCART123 Clinical Studies.

If we fail to do so, we may be required to delay or discontinue development of our product candidates. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

Our gene-editing technology is relatively new, and if we are unable to use this technology in all of our intended applications, our revenue opportunities will be limited.

Our technology involves a relatively new approach to gene editing, using sequence-specific DNA-cutting enzymes, or nucleases, to perform precise and stable modifications in the DNA of living-cells and organisms. Although we have generated nucleases for many specific gene sequences, we have not created nucleases for all gene sequences that we may seek to target, and we may not be able do so, which could limit the usefulness of our technology.

The expected value and utility of our nucleases is, in part, based on our belief that the targeted modification of genes or specific regulation of gene expression may enable us to develop a new therapeutic approach. There is only a limited understanding of the role of specific genes in these applications. Life sciences companies have only been able to successfully develop or commercialize a few products in this biopharmaceutical space based on results from genome research or the ability to regulate gene expression. We or our collaborators may not be able to use our technology to develop commercial products in the intended diseases.

In addition, the biopharmaceutical industry is rapidly developing, and our competitors may introduce new technologies that render our technology obsolete or less attractive. New technology could emerge at any point in the development cycle of our product candidates. As competitors use or develop new technologies, we may be placed at a competitive disadvantage, and competitive pressures may force us to implement new technologies at a substantial cost. In addition, our competitors have greater financial, technical and personnel resources that allow them to enjoy technological advantages and may in the future allow them to implement new technologies before we can. We cannot be certain that we will be able to implement technologies on a timely basis or at a cost that is acceptable to us. If we are unable to maintain technological advancements consistent with industry standards, our operations and financial condition may be adversely affected.

We depend almost entirely on the successful development of our product candidates. We cannot be certain that we or our collaborators will be able to obtain regulatory approval for, or successfully commercialize, these products.

Currently, UCART123 is our only fully-controlled product candidate that has been approved by the FDA to enter into Phase I clinical studies in the United States. In addition, UCART19, which is exclusively licensed to Servier, is the subject of two Phase I clinical studies in the United Kingdom, each sponsored by Servier, and has been approved for a Phase I clinical study in the United States, to be conducted in collaboration with Pfizer. Notwithstanding the foregoing, we may never be able to develop products that will be approved or commercialized. Our business depends primarily on the successful clinical development, regulatory approval and commercialization of our CAR T-cell immunotherapy product candidates. We are also studying in pre-clinical studies, on our own or through our collaborators, other product candidates based on gene-edited CAR T-cells for cancer immunotherapy.

Our therapeutic product candidates will require substantial additional clinical development, testing, and regulatory approval before we are permitted to commence their commercialization. The clinical trials of our product candidates are, and the manufacturing and marketing of our product candidates will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to test and, if approved, market any product candidate. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate, with substantial evidence gathered in well-controlled clinical trials, and, with respect to approval in the United States, to the satisfaction of the FDA or, with respect to approval in other countries, similar regulatory authorities in those countries, that the product candidate is safe and effective for use in each target indication. In the United States, we expect that the requisite regulatory submission to seek marketing approval for our gene therapy products will be a Biologic License Application, or BLA, and the competent regulatory authority is the FDA. In the EU, the requisite approval is a Marketing Authorisation, or MA, which for products developed by the means of recombinant DNA technology, gene or cell therapy products as well as tissue engineered products, is issued through a centralized procedure involving the EMA. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. Despite our efforts, our product candidates may not:

- offer improvement over existing, comparable products;
- be proven safe and effective in clinical trials; or
- meet applicable regulatory standards.

This process can take many years and may include post-marketing studies and surveillance, which will require the expenditure of substantial resources beyond our existing cash on hand. Of the large number of drugs in development globally, only a small percentage successfully completes the regulatory approval process and even fewer are commercialized. Furthermore, we have not marketed, distributed or sold any products. Our success will, in addition to the factors discussed above, depend on the successful commercialization of the product candidates we develop on our own or on behalf of our collaborators, which may require:

- obtaining and maintain commercial manufacturing arrangements with third-party manufacturers;
- collaborating with pharmaceutical companies or contract sales organizations to market and sell any approved drug; or
- acceptance of any approved drug in the medical community and by patients and third-party payors.

Many of these factors are beyond our control. We do not expect any of the product candidates we develop on our own and those we develop on behalf of our collaborators to be commercially available for many years and some or all may never become commercially available. We may never generate revenues through the sale of products.

Accordingly, even if we are able to obtain the requisite financing to continue to fund our development and clinical programs, we cannot assure you that our product candidates will be successfully developed or commercialized.

We face substantial competition from companies, including biotechnology and pharmaceutical companies, many of which have considerably more resources and experience than we have, which may result in others discovering, developing, receiving approval for, or commercializing products before or more successfully than us.

The biotechnology and pharmaceutical industries are characterized by intense competition and rapid innovation, and many companies put significant resources toward developing novel and proprietary therapies for the treatment of cancer, which often incorporate novel technologies and valuable intellectual property. We compete with companies in the immunotherapy space, as well as companies developing novel targeted therapies for cancer. In addition, our product candidates, if approved, will compete with existing standards of care for the diseases that our product candidates target as well as new compounds, drugs or therapies, some of which may achieve better results than our product candidates. We anticipate that we will face intense and increasing competition from many different sources, including new and established biotechnology and pharmaceutical companies, academic research institutions, governmental agencies and public and private research institutions.

Our competitors include:

- Gene-editing space: CRISPR Therapeutics, Inc., Editas Medicine, Inc., Intellia Therapeutics, Inc., Caribou Biosciences, Precision BioSciences, Inc. and Sangamo BioSciences, Inc.

- CAR space: Bellicum Pharmaceuticals, Inc., Juno Therapeutics, Inc., Celgene Corporation (in collaboration with bluebird bio, Inc.), Ziopharm Oncology (in collaboration with Intrexon, Inc.), Kite Pharma, Inc. (in collaboration with Amgen), Novartis AG and Johnson & Johnson (in collaboration with Transposagen), and Autolus Limited.
- Cell-therapy space: Adaptimmune Ltd, Lion Biotechnologies, Inc., Unum Therapeutics, Inc., NantKwest, Inc., Celyad S.A., Atara Biotherapeutics, Inc., and Immunocore Ltd.

We also face competition from non-cell based treatments offered by companies such as Amgen Inc., AstraZeneca plc, Bristol-Myers Squibb Company, Incyte Corporation, Merck & Co., Inc., and F. Hoffman-La Roche AG. Immunotherapy is further being pursued by several biotech companies as well as by large-cap pharmaceutical companies. Many of our competitors, either alone or with their collaboration partners, have substantially greater financial, technical and other resources, such as larger research and development staff and/or greater expertise in research and development, manufacturing, pre-clinical testing and conducting clinical trials. In addition, smaller or early-stage companies may compete with us through collaborative arrangements with more established companies. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these enterprises. Mergers and acquisitions in the pharmaceutical, biotechnology and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Our competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors, either alone or with collaborators, may succeed in developing, acquiring or licensing on an exclusive basis drug or biologic products that are more effective, safer, more easily commercialized, or less costly than our product candidates or may develop proprietary technologies or secure patent protection that we may need for the development of our technologies and products.

Even if we obtain regulatory approval of our product candidates, we may not be the first to market and that may affect the price or demand for our product candidates. Additionally, the availability and price of our competitors' products could limit the demand and the price we are able to charge for our product candidates. We may not be able to implement our business plan if the acceptance of our product candidates is inhibited by price competition or the reluctance of physicians to switch from existing methods of treatment to our product candidates, or if physicians switch to other new drug or biologic products or choose to reserve our product candidates for use in limited circumstances. A competitor could obtain orphan product exclusivity from the FDA with respect to such competitor's product. If such competitor product is determined to be the same product as one of the product candidates we develop, that may prevent us or our collaborators from obtaining approval from the FDA for such product candidate for the same indication for seven years, except in limited circumstances.

The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.

The time required to obtain approval by the FDA and comparable foreign authorities is inherently unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval.

The FDA or other regulatory authority, as applicable, may delay, limit or deny approval of our product candidates for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the number, design, size, conduct or implementation of our clinical trials or require that additional clinical trials be conducted;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;

- the CROs that are retained to assist us in connection with the clinical trials of our product candidates may take actions that materially adversely impact the clinical trials;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from manufacturing, pre-clinical studies or clinical trials;
- the FDA or comparable foreign regulatory authorities may not accept data generated at the sites involved in the clinical trials for our product candidates;
- the FDA or comparable foreign regulatory authorities may not approve the production process, formulation, labeling or specifications of our product candidates;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a BLA or other submission or to obtain regulatory approval in the United States or elsewhere;
- if the marketing application, if and when submitted, is reviewed by an advisory committee, the FDA or comparable foreign regulatory authorities may have difficulties scheduling an advisory committee meeting in a timely manner or the advisory committee may recommend against approval of our application or may recommend that the competent regulatory authorities require, as a condition of approval, additional pre-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions;
- the FDA or comparable foreign regulatory authorities may require development of a Risk Evaluation and Mitigation Strategy as a condition of approval or post-approval;
- the FDA or comparable foreign regulatory authorities may restrict the use of our products to a narrow population;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; or
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market the product candidates we develop, which would significantly harm our business, results of operations and prospects. In addition, even if we or our collaborators were able to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a drug candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for the product candidates we develop.

We expect several of the product candidates we develop will initially be available as treatment for patients with advanced disease, or with a rare disease with no other treatment option, which could limit the size of the market for these product candidates.

We expect that, if approved, several of the product candidates we develop will initially receive regulatory approval as treatment for advanced or rare diseases. This could limit the initial size of the market for these product candidates, and we cannot predict when, if ever, such product candidates would receive regulatory approval for indications treating a more expansive patient population.

The manufacturing of the product candidates we develop is highly complex. Any issues that arise in the manufacturing process could have an adverse effect on our business, financial position or prospects.

The product candidates we develop undergo a complex, highly-regulated manufacturing process that is subject to multiple risks. As a result of the complexities of this process, the cost to manufacture our CAR T-cell immunotherapy products is generally higher than traditional small molecule chemical compounds, and the manufacturing process requires very minimal batch-to-batch variability, which is expensive to ensure. Our manufacturing process is susceptible to product loss or failure due to issues associated with the collection of white blood cells, or starting material, from healthy third-party donors, shipping such material to the manufacturing site, ensuring standardized production batch-to-batch in the context of mass production, freezing the manufactured product, shipping the final product globally, and infusing patients with the product. In addition, we may face manufacturing issues associated with interruptions in the manufacturing process, contamination, equipment or reagent failure, shortage of raw material and other procurement issues, improper installation or operation of equipment, vendor or operator error, inconsistency in cell growth, and variability in product characteristics. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects, and other supply disruptions. If microbial, viral, or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the

contamination. Further, as our product candidates are developed through pre-clinical to late stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives, and any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials.

Currently, the product candidates we develop are manufactured using processes intended for pre-clinical and clinical stage production by a third-party contract manufacturing organization, or CMO. Although we work with CMOs to ensure that commercially viable processes will be available for mass production, there are risks associated with scaling to the level required for advanced clinical trials or commercialization, including, among others, cost overruns, potential problems with process scale-up and/or scale-out, process reproducibility, stability issues, lot consistency, and timely availability of reagents or raw materials. We may ultimately be unable to reduce the cost of goods for the product candidates to levels that will allow for an attractive return on investment if and when those product candidates are commercialized.

We expect our manufacturing strategy for the product candidates we develop will continue to involve the use of one or more CMOs as well as establishing our own capabilities and infrastructure, including a manufacturing facility. We expect that development of our own manufacturing facility will provide us with enhanced control of material supply for both clinical trials and the commercial market, enable the more rapid implementation of process changes, and allow for better long-term margins. However, we have no experience as a company in developing a manufacturing facility and may never be successful in developing our own manufacturing facility or capability. We may establish multiple manufacturing facilities as we expand our commercial footprint to multiple geographies, which may lead to regulatory delays or prove costly. Even if we are successful, our manufacturing capabilities could be affected by cost-overruns, unexpected delays, equipment failures, labor shortages, natural disasters, power failures, regulatory issues and numerous other factors that could prevent us from realizing the intended benefits of our manufacturing strategy and have a material adverse effect on our business.

In addition, the manufacturing process for any products that we may develop is subject to FDA and foreign regulatory authority approval processes for the jurisdictions in which we or our collaborators will seek marketing approval for commercialization, and we will need to contract with manufacturers who can meet all applicable FDA and foreign regulatory authority requirements on an ongoing basis. If the manufacturing process is changed during the course of product development, FDA or foreign regulatory authorities could require us to repeat some or all previously conducted trials or conduct additional bridging trials, which could delay or impede our ability to obtain marketing approval. If we or our CMOs are unable to reliably produce product candidates or products to specifications acceptable to the FDA or other regulatory authorities, such as the FDA's cGMP standards compliance, we may not obtain or maintain the approvals we need to further develop, conduct clinical trials for, and commercialize such products in the relevant territories. Even if we obtain regulatory approval for any of our product candidates, there is no assurance that either we or our CMOs will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product, or to meet potential future demand. Any of these challenges could delay completion of clinical trials, require bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidate, impair commercialization efforts, increase our cost of goods, and have an adverse effect on our business, financial condition, results of operations and growth prospects.

Negative public opinion and increased regulatory scrutiny of genetic research and therapies involving gene editing may damage public perception of our product candidates or adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

Our gene-editing technologies are novel. Public perception may be influenced by claims that gene editing is unsafe, and products incorporating gene editing may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians specializing in our targeted diseases prescribing our product candidates as treatments in lieu of, or in addition to, existing, more familiar, treatments for which greater clinical data may be available. Any increase in negative perceptions of gene editing may result in fewer physicians prescribing our treatments or may reduce the willingness of patients to utilize our treatments or participate in clinical trials for our product candidates. Increased negative public opinion, or more restrictive government regulations in response thereto, would have a negative effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for such product candidates. For example, in 2003, 20 subjects treated for X-linked severe combined immunodeficiency in two gene therapy studies using a

murine gamma-retroviral vector, a viral delivery system, showed correction of the disease, but the studies were terminated after five subjects developed leukemia. Although none of our current product candidates utilize these gamma-retroviruses, our product candidates use a viral delivery system. Additionally, there have been a number of patient deaths in recent CAR-T trials conducted in the United States by our competitors leading to clinical trial holds. Adverse events in clinical studies for the product candidates we develop or those of our competitors, even if not ultimately attributable to our or their product candidates, respectively (such as the many adverse events that typically arise from the transplant process), and any resulting publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our product candidates, stronger labeling for those product candidates that are approved and a decrease in demand for any such product candidates.

We or our collaborators may find it difficult to enroll patients in clinical studies on the product candidates we develop, which could delay or prevent clinical studies of the product candidates.

Identifying and qualifying patients to participate in clinical studies of the product candidates we develop is critical to our success. The timing of these clinical studies will depend, in part, on the speed of recruitment of patients to participate in testing such product candidates as well as completion of required follow-up periods. We or our collaborators may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a study, to complete the clinical studies for our product candidates in a timely manner. If patients are unwilling to participate in such studies because of negative publicity from adverse events in the biotechnology or gene or cell therapy industries or for other reasons, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of potential products may be delayed. These delays could result in increased costs, delays in advancing our product candidates, delays in testing the effectiveness of our technology or termination of the clinical studies altogether.

In addition, clinical trials for the product candidates we develop will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition may reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Because the number of qualified clinical investigators is limited, we expect to conduct some of the clinical trials at the same clinical trial sites that some of our competitors use, which may reduce the number of patients who are available for our clinical trials at such clinical trial sites. Certain of our competitors may have greater success than us in enrolling patients as a result of a variety of factors. Moreover, because the product candidates we develop represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy and stem cell transplants, rather than enroll patients in our future clinical trial or clinical trial of our collaborators.

Patient enrollment is affected by a variety of factors, including:

- severity of the disease under investigation;
- design of the clinical trial protocol;
- size and nature of the patient population;
- eligibility criteria for the trial in question;
- perceived risks and benefits of the product candidate under trial;
- proximity and availability of clinical trial sites for prospective patients;
- availability of competing therapies and clinical trials;
- clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians; and
- our ability to monitor patients adequately during and after treatment.

Our competitors in the immuno-oncology space are developing products that similarly use CAR T-cells to seek out and destroy cancer cells. In addition to the factors identified above, patient enrollment in any clinical trials we may conduct may be adversely impacted by any negative outcomes our competitors may experience, including adverse side effects (including fatalities), clinical data showing inadequate efficacy or failures to obtain regulatory approval.

If we or our collaborators have difficulty enrolling a sufficient number of patients to conduct clinical studies as planned, we or our collaborators may need to delay, limit or terminate ongoing or planned clinical studies, any of which could have a material adverse effect on our business and financial condition. Even if we are able to enroll a sufficient number of patients in our clinical trials, delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of the product candidates we develop.

Our product candidates may fail safety studies in clinical trials or may cause undesirable side effects that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Our gene-editing technologies may not be sufficiently specific for their target sites, or they may not target unique sites within the genome of interest, which may result in random DNA recombination events. For example, off-target cleavage may lead to the production of double-strand breaks that overwhelm the cell's repair machinery and, as a consequence, yield chromosomal rearrangements and/or cell death. Off-target cleavage events also may result in random integration of donor DNA. As a result, off-target cleavage in T-cells may lead to undesirable side effects for patients, and consequently could cause delays, interruptions or suspensions of clinical trials and delays or denial of regulatory approval by the FDA or other regulatory authorities. Because the products we develop have had only very limited clinical application, in connection with the UCART19 Clinical Studies, we do not yet have sufficient information to know whether any of our product candidates will cause undesirable side effects.

Any undesirable side effects could cause us, our collaborators or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities. Further, if the product candidates we develop receive marketing approval and we or others identify undesirable side effects caused by the products or any other similar products after the approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of the products;
- regulatory authorities may require the addition of labeling statements, such as a "boxed" warning or a contraindication;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we may be required to perform additional post marketing safety studies or post marketing safety registries;
- we or our collaborators may be required to change the way the products are distributed or administered or conduct additional clinical trials;
- we or our collaborators may decide to remove the products from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking our products or products developed with our technologies; and
- our reputation may suffer.

Any of these events could prevent the affected products from reaching the milestones triggering payment to Cellectis or achieving or maintaining market acceptance and could substantially increase the costs of commercializing such products and significantly impact the ability of such products to generate revenues.

If the product candidates we develop do not achieve projected development and commercialization in the announced or expected timeframes, the further development or commercialization of our product candidates may be delayed, and our business will be harmed.

We sometimes estimate, or may in the future estimate, for planning purposes, the timing of the accomplishment of various scientific, clinical, manufacturing, regulatory and other product development objectives. These milestones may include our expectations regarding the commencement or completion of scientific studies, clinical trials, the submission of regulatory filings, the receipt of marketing approval or commercialization objectives. The achievement of many of these milestones may be outside of our control. All of these milestones are based on a variety of assumptions including, assumptions regarding capital resources and constraints, progress of development activities, and the receipt of key regulatory approvals or actions, any of which may cause the timing of achievement of the milestones to vary considerably from our estimates.

If we or our collaborators fail to achieve announced milestones in the expected timeframes, the commercialization of the product candidates may be delayed, our credibility may be undermined, and our business and results of operations may be harmed.

Further development and commercialization of our own product candidates will depend, in part, on strategic alliances with our collaborators. If our collaborators do not diligently pursue product development efforts, our progress may be delayed and our revenues may be deferred.

We expect to rely, to some extent, on our collaborators to provide funding in support of our own independent research and pre-clinical and clinical testing. Our technology is broad based, and we do not currently possess the financial resources necessary to fully develop and commercialize potential products that may result from our technologies or the resources or capabilities to complete the lengthy marketing approval processes that may be required for the products. Therefore, we plan to rely on strategic alliances to financially help us develop and commercialize our own biopharmaceutical products. As a result, our success depends, in part, on our ability to collect milestone and royalty payments from our collaborators. To the extent our collaborators do not aggressively pursue product candidates for which we are entitled to such payments or pursue such product candidates ineffectively, we will fail to realize these significant revenue streams, which could have an adverse effect on our business and future prospects. For example, since Servier has obtained exclusive rights on UCART19, it controls this product candidate and its future development (including the UCART19 Clinical Studies) and commercialization. We will receive royalties on sales of the product, but will have no control over such further development and commercialization.

If collaborators with whom we currently have alliances, such as Pfizer and Servier, or future collaborators with whom we may engage, are unable or unwilling to advance our programs, or if they do not diligently pursue product development and product approval, this may slow our progress and defer or negatively impact our revenues. Such failures would have an adverse effect on our ability to collect key revenue streams and, for this reason, would adversely impact our business, financial position and prospects. Our collaborators may sublicense or abandon product candidates or we may have disagreements with our collaborators, which would cause associated product development to slow or cease. There can be no assurance that our current strategic alliances will be successful, and we may require significant time to secure new strategic alliances because we need to effectively market the benefits of our technology to these future alliance partners, which may direct the attention and resources of our research and development personnel and management away from our primary business operations. Further, each strategic alliance arrangement will involve the negotiation of terms that may be unique to each collaborator. These business development efforts may not result in a strategic alliance or may result in unfavorable arrangements.

The loss of existing or future collaboration agreements would not only delay or potentially terminate the possible development or commercialization of products we may derive from our technologies, but it may also delay or terminate our ability to test target candidates for specific genes. If any collaborator fails to conduct the collaborative activities successfully and in a timely manner, the pre-clinical or clinical development or commercialization of the affected target candidates or research programs would be delayed or could be terminated.

Under typical collaboration agreements, we would expect to receive revenue for the research and development of a CAR T-cell immunotherapy product based on achievement of specific milestones, as well as royalties based on a percentage of sales of the commercialized products. Achieving these milestones will depend, in part, on the efforts of our partner as well as, in most cases and for a limited period of time, our own. If we, or any alliance partner, fail to meet specific milestones, then the strategic alliance may be terminated, which could reduce our revenues.

Under our collaboration agreement with Pfizer, at any time after the first anniversary of the effective date of the agreement, Pfizer will have the right to terminate the agreement at will upon 60 days' prior written notice, either in its entirety or on a target-by-target basis. Either party may terminate the agreement in its entirety upon written notice, if the other party commits a material breach that fundamentally frustrates the objectives or transactions contemplated by the agreement or affects substantially all of the research program and such breach remains uncured for 90 days from the date such written notice is provided. Either party may terminate the agreement on a target-by-target basis upon written notice, if the other party commits a material breach that relates to such target and such breach remains uncured for 90 days from the date such written notice is provided. The agreement may also be terminated upon written notice by Pfizer at any time in the event that we become bankrupt or insolvent. Further, the agreement provides Pfizer with a right to terminate any specific research project or research program under the agreement if we undergo a change of control.

Under our collaboration agreement with Servier, either party may terminate the agreement in its entirety in the event of the other party's material breach, which continues or remains uncured for 90 days after written notice is provided to the breaching party, or 30 days after written notice is provided with respect to a payment obligation breach. The parties may also terminate the agreement by mutual written consent. Servier has the right, at its sole discretion, to terminate the agreement in its entirety or with respect to specific products or product candidates, upon three months' prior written notice to us. Servier may also terminate the agreement at any time for product-related safety reasons. Either party may terminate the agreement in the event of the other party's bankruptcy or insolvency. Further, the agreement provides Servier with buy-out rights with respect to our interest in products and product candidates under the agreement if we undergo a change of control.

Even if we or our collaborators successfully complete clinical trials of our product candidates, those candidates may not be commercialized successfully for other reasons.

Even if we or our collaborators successfully complete clinical trials for one or more of the product candidates, those candidates may not be commercialized for other reasons, including:

- failing to receive regulatory approvals required to market them as drugs;
- being subject to proprietary rights held by others;
- failing to comply with GMP requirements;
- being difficult or expensive to manufacture on a commercial scale;
- having adverse side effects that make their use less desirable;
- failing to compete effectively with existing or new products or treatments commercialized by competitors; or
- failing to show long-term benefits sufficient to offset associated risks.

In addition, for any product candidates we develop through our strategic alliances, we will depend entirely upon the other party for marketing and sales of that product. These partners may not devote sufficient time or resources to the marketing and commercialization, or may determine not to pursue marketing and commercialization at all. Our business and results of operations will be negatively impacted by any failure of our collaborators to effectively market and commercialize an approved product.

Even if we obtain regulatory approval for a product candidate, our products will remain subject to ongoing regulatory requirements.

Even if we obtain regulatory approval in a jurisdiction for the product candidates we develop, they will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, and submission of safety and other post-market information. Any regulatory approvals received for the product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product. For example, the holder of an approved BLA in the United States is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. FDA guidance advises that patients treated with some types of gene therapy undergo follow-up observations for potential adverse events for as long as 15 years. Similarly, in the EU, pharmacovigilance obligations are applicable to all medicinal products. In addition to those, holders of a marketing authorization for gene or cell therapy products must detail, in their application, the measures they envisage to ensure follow-up of the efficacy and safety of these products. In cases of particular concern, marketing authorization holders for gene or cell therapy products in the EU may be required to design a risk management system with a view to identifying, preventing or minimizing risks, and may be obliged to carry out post-marketing studies. In the United States, the holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Similar provisions apply in the EU. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws. Similarly, in the EU any promotion of medicinal products is highly regulated and, depending on the specific jurisdiction involved, may require prior vetting by the competent national regulatory authority.

In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP requirements and adherence to commitments made in the BLA or foreign marketing application. If we or a regulatory agency discovers previously unknown problems with a product such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured or disagrees with the promotion, marketing or labeling of that product, a regulatory agency may impose restrictions relative to that product, the manufacturing facility or us, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we or our collaborators fail to comply with applicable regulatory requirements following approval of any of the product candidates we develop, national competent authorities may:

- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend or terminate any ongoing clinical trials;

- refuse to approve a pending BLA or comparable foreign marketing application (or any supplements thereto) submitted by us or our collaborators;
- restrict the marketing, distribution or manufacturing of the product;
- seize or detain product or otherwise require the withdrawal or recall of product from the market;
- refuse to permit the import or export of products; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit ability to commercialize products and generate revenues. In addition, the FDA's policies, and policies of foreign regulatory agencies, may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we or our collaborators are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or our collaborators are not able to maintain regulatory compliance, marketing approval that has been obtained may be lost and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We expect the product candidates we develop will be regulated as biological products, or biologics, and therefore they may be subject to competition sooner than anticipated.

The Biologics Price Competition and Innovation Act of 2009, or BPCIA, was enacted as part of the 2010 Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, to establish an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an approved biologic. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the reference product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty. While it is uncertain when such processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that any of the product candidates we develop that is approved as a biological product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider the subject product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of the reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

Even if we or our collaborators obtain and maintain approval for product candidates in the United States or another jurisdiction, we or our collaborators may never obtain approval for the same product candidates in other jurisdictions, which would limit market opportunities and adversely affect our business.

Approval of a product candidate in the United States by the FDA or by the requisite regulatory agencies in any other jurisdiction does not ensure approval of such product candidate by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. The approval process varies among countries and may limit our or our collaborators' ability to develop, manufacture, promote and sell our product candidates internationally. Failure to obtain marketing approval in international jurisdictions would prevent the product candidates from being marketed outside of the jurisdictions in which regulatory approvals have been received. In order to market and sell the product candidates in the EU and many other jurisdictions, we and our collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and may involve additional pre-clinical studies or clinical trials both before and post approval. In many countries, a product candidate must be approved for reimbursement before it can be approved for sale in that country. In some cases, the intended price for the product is also subject to approval. Further, while regulatory approval of a product candidate in one country does not ensure approval in any other country, a failure or delay in obtaining regulatory approval in one country may have a

negative effect on the regulatory approval process in others. If we or our collaborators fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, the target market will be reduced and the ability to realize the full market potential of the subject product candidates will be harmed and our business will be adversely affected.

Depending on the results of clinical trials and the process for obtaining regulatory approvals in other countries, we or our collaborators may decide to first seek regulatory approvals of a product candidate in countries other than the United States, or we or our collaborators may simultaneously seek regulatory approvals in the United States and other countries, in which case we or our collaborators will be subject to the regulatory requirements of health authorities in each country in which we seek approvals. Obtaining regulatory approvals from health authorities in countries outside the United States is likely to subject us or our collaborators to all of the risks associated with obtaining approval in the United States or the EU described herein.

We plan to seek orphan drug status for some or all of our product candidates, but we may be unable to obtain such designations or to maintain the benefits associated with orphan drug status, including market exclusivity, which may cause our revenue, if any, to be reduced.

We plan to seek orphan drug designation for some or all of our product candidates in specific orphan indications in which there is a medically plausible basis for the use of these products. Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 in the United States, or a patient population greater than 200,000 in the United States when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested before submitting a BLA. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. Although we intend to seek orphan product designation for some or all of our product candidates, we may never receive such designations.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a BLA, to market the same biologic for the same indication for seven years, except in limited circumstances such as a showing of clinical superiority to the product with orphan product exclusivity or if FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Even if we obtain orphan drug designation for a product candidate, we may not be the first to obtain marketing approval for any particular orphan indication due to the uncertainties associated with developing pharmaceutical products. Exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan designated indication and may be lost if the FDA later determines that the request for designation was materially defective, the disease or condition exceeded the population threshold, or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is safer, more effective, or makes a major contribution to patient care. Furthermore, the FDA can waive orphan exclusivity if we are unable to manufacture sufficient supply of our product.

Similarly, in Europe, a medicinal product may receive orphan designation under Article 3 of Regulation (EC) 141/2000. This applies to products that are intended for a life-threatening or chronically debilitating condition and either (a) such condition affects no more than five in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from orphan status, would unlikely generate sufficient return in the EU to justify the necessary investment. Moreover, in order to obtain orphan designation in the EU it is necessary to demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the EU, or if such a method exists, the product will be of significant benefit to those affected by the condition.

In the EU, orphan medicinal products are eligible for financial incentives such as reduction of fees or fee waivers and applicants can benefit from specific regulatory assistance and scientific advice. Products receiving orphan designation in the EU can receive ten years of market exclusivity, during which time no similar medicinal product for the same indication may be placed on the market. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies (Article 37, Regulation 1901/2006). However, the 10-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation—for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. Additionally, marketing authorization may be granted to a similar product for the same indication at any time if:

- the second applicant can establish that its product, although similar, is safer, more effective or otherwise clinically superior;

- the first applicant consents to a second orphan medicinal product application; or
- the first applicant cannot supply enough orphan medicinal product.

We may seek fast-track designation for some or all of our product candidates. There is no assurance that the FDA will grant such designation and, even if it does grant fast track designation to any of our product candidates, that designation may not actually lead to a faster development or regulatory review or approval process and it does not increase the likelihood that our product candidates will receive marketing approval in the United States.

We may seek fast-track designation and review for some or all of our other product candidates. If a drug is intended for the treatment of a serious or life-threatening condition or disease, the drug sponsor may apply for FDA fast track designation. The FDA has broad discretion whether or not to grant this designation. Thus, even if we believe a particular product candidate is eligible for this designation, we cannot assure that the FDA would decide to grant it. Moreover, even if we do receive fast track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. In addition, the FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program.

We may seek a regenerative advanced therapy (RAT) designation and/or a breakthrough therapy designation for our product candidates. Even if we achieve a RAT designation or a breakthrough designation from the FDA for the product candidates we develop, or, if applicable, by other national or international regulatory agencies, such designation may not lead to a faster development or regulatory review or approval process, and it does not increase the likelihood that our product candidates will receive marketing approval.

We may seek a RAT designation or a breakthrough therapy designation for our product candidates in the future.

A drug is eligible for RAT designation if, (i) the drug is a regenerative medicine therapy, which is defined as a cell therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, except for those regulated solely under Section 361 of the Public Health Service Act and part 1271 of Title 21, Code of Federal Regulations; (ii) the drug is intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition; and (iii) preliminary clinical evidence indicates that the drug has the potential to address unmet medical needs for such disease or condition.

A breakthrough therapy is defined as a product that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints.

For product candidates that have been designated as a RAT or a breakthrough therapy, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Designation as a RAT or breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe that our product candidates meet the criteria for designation as a RAT or a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a RAT designation or a breakthrough therapy designation for a product candidate may not result in a faster development process, review or approval compared to products considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as RAT or a breakthrough therapy, the FDA may later decide that such product no longer meet the conditions for qualification.

Even if any of our product candidates are commercialized, they may not be accepted by physicians, patients, or the medical community in general, and may also become subject to market conditions that could harm our business.

Even if any of our product candidates receive marketing approval, the medical community may not accept such products as adequately safe and efficacious for their indicated use. Moreover, physicians may choose to restrict the use of the product, if, based on experience, clinical data, side-effect profiles and other factors, they are not convinced that the product is preferable to existing drugs or treatments. We cannot predict the degree of market acceptance of any product candidate that receives marketing approval, which will depend on a number of factors, including, but not limited to:

- the demonstration of the clinical efficacy and safety of the product;
- the approved labeling for the product and any required warnings;
- the advantages and disadvantages of the product compared to alternative treatments;
- our and any collaborator's ability to educate the medical community about the safety and effectiveness of the product;
- the coverage and reimbursement policies of government and commercial third-party payors pertaining to the product; and
- the market price of the product relative to competing treatments.

Product liability lawsuits could divert our resources, result in substantial liabilities and reduce the commercial potential of our product candidates.

The risk that we may be sued on product liability claims is inherent in the development and commercialization of biopharmaceutical products. Side effects of, or manufacturing defects in, products that we develop could result in the deterioration of a patient's condition, injury or even death. For example, our liability could be sought by patients participating in the clinical trials for our product candidates as a result of unexpected side effects resulting from the administration of these products. Once a product is approved for sale and commercialized, the likelihood of product liability lawsuits increases. Criminal or civil proceedings might be filed against us by patients, regulatory authorities, biopharmaceutical companies and any other third party using or marketing our products. These actions could include claims resulting from acts by our partners, licensees and subcontractors, over which we have little or no control. These lawsuits may divert our management from pursuing our business strategy and may be costly to defend. In addition, if we are held liable in any of these lawsuits, we may incur substantial liabilities and may be forced to limit or forgo further commercialization of the affected products.

In addition, regardless of merit or eventual outcome, product liability claims may result in: impairment of our business reputation; withdrawal of clinical trial participants; initiation of investigations by regulators; costs due to related litigation; distraction of management's attention from our primary business; substantial monetary awards to trial participants, patients or other claimants; loss of revenue; exhaustion of any available insurance and our capital resources; the inability by us and our collaborators to commercialize our product candidates; and decreased demand for our product candidates, if approved for commercial sale.

We maintain product liability insurance coverage for damages caused by our product candidates with coverage limits that , we believe are customary for companies in our industry. This coverage may be insufficient to reimburse us for any expenses or losses we may suffer. Because all of our fully-controlled product candidates are in pre-clinical development stages, we currently do not carry clinical trial insurance for our product candidates. In addition, in the future, we may not be able to obtain or maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product or other legal or administrative liability claims by us or our partners, licensees or subcontractors, which could prevent or inhibit the commercial production and sale of any of our product candidates that receive regulatory approval, which could adversely affect our business.

Coverage and reimbursement may be limited or unavailable in certain market segments for our product candidates, which could make it difficult for us to sell our product candidates profitably.

Successful sales of our product candidates, if approved, depend, in part, on the availability of adequate coverage and reimbursement from third-party payors.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Adequate coverage and reimbursement from governmental healthcare programs, such as Medicare and Medicaid in the United States, and commercial payors are critical to new product acceptance.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs and treatments they will cover and the amount of reimbursement. Coverage and reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Policies for coverage and reimbursement for products vary among third-party payors. As a result, obtaining coverage and reimbursement approval of a product from a government or other third-party payor is a time-consuming and costly process that could require us or our collaborators to provide to each payor supporting scientific, clinical and cost-effectiveness data for the use of our products on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. Even if we obtain coverage for a given product, the resulting reimbursement payment rates might not be adequate for us to achieve or sustain profitability or may require co-payments that patients find unacceptably high. Additionally, third-party payors may not cover, or provide adequate reimbursement for, long-term follow-up evaluations required following the use of our product candidates.

Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates. Because our product candidates represent new approaches to the treatment of cancer and accordingly, may have a higher cost than conventional therapies and may require long-term follow up evaluations, the risk that coverage and reimbursement rates may be inadequate for us to achieve profitability may be elevated.

Government restrictions on pricing and reimbursement, as well as other healthcare payor cost-containment initiatives, may negatively impact our ability to generate revenues if we obtain regulatory approval for any of our product candidates.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. The continuing efforts of various governments, insurance companies, managed care organizations and other payors to contain or reduce healthcare costs may adversely affect one or more of the following:

- our ability or our collaborators' ability to set a price we believe is fair for our products, if approved;
- our ability or our collaborators' ability to obtain and maintain market acceptance by the medical community and patients;

- our ability to generate revenues and achieve profitability; and
- the availability of capital.

In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our or our collaborators' ability to sell our products profitably. By way of example, in the United States, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the ACA) was enacted in March 2010. The ACA has been expected to have a significant impact on the provision of, and payment for, health care in the United States. The ACA was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the ACA of importance to our potential product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for a manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of a manufacturer's Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2024 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law which, among other things, further reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Additional legislative proposals to reform healthcare and government insurance programs, along with the trend toward managed healthcare in the United States, could influence the purchase of medicines and reduce demand and prices for our products, if approved. This could harm our or our collaborators' ability to market any products and generate revenues. Cost containment measures that healthcare payors and providers are instituting and the effect of further healthcare reform could significantly reduce potential revenues from the sale of any of our product candidates approved in the future, and could cause an increase in our compliance, manufacturing, or other operating expenses.

In some countries, the proposed pricing for a biopharmaceutical product must be approved before it may be lawfully marketed. In addition, in certain foreign markets, the pricing of biopharmaceutical product is subject to government control and reimbursement may in some cases be unavailable. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its Member States to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. An EU Member State may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for biopharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, biopharmaceutical products launched in the EU do not follow price structures of the United States and generally tend to have significantly lower prices.

We believe that pricing pressures will continue and may increase, which may make it difficult for us to sell our potential products that may be approved in the future at a price acceptable to us or any of our future collaborators.

Our future profitability, if any, depends, in part, on our ability to penetrate global markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability, if any, will depend, in part, on our ability and the ability of our collaborators to commercialize the product candidates we develop in markets throughout the world. Commercialization of our product candidates in various markets could subject us to risks and uncertainties, including:

- obtaining, on a country-by-country basis, the applicable marketing authorization from the competent regulatory authority;
- the burden of complying with complex and changing regulatory, tax, accounting and legal requirements in each jurisdiction that we pursue;
- differing medical practices and customs affecting acceptance in the marketplace;
- import or export licensing requirements;
- country specific requirements related to the cells used as starting material for manufacturing
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training, healthcare professionals and patients documents;
- reduced protection of intellectual property rights in some foreign countries;
- foreign currency exchange rate fluctuations;
- patients' ability to obtain reimbursement for products in various markets; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Sales of the products could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

We are subject to healthcare laws and regulations, which could expose us to the potential for criminal sanctions, civil penalties, exclusion from government healthcare programs, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and others will play a primary role in the recommendation and prescription of our products, if approved. Our arrangements with such persons and third-party payors must be structured in accordance with the broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we research, market, sell and distribute our products, if we obtain marketing approval. Restrictions under applicable federal, state and foreign healthcare laws and regulations include but are not limited to the following:

- The federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration (including any kickback, bribe or rebate), directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase or lease, order or recommendation of, any item, good, facility or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid.
- The federal civil and criminal false claims laws and civil monetary penalties laws, which impose criminal and civil penalties, including those from civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, claims for payment that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government.
- The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program or knowingly and willingly falsifying, concealing or covering up a material fact or making false statements relating to healthcare matters.
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, which impose certain requirements on covered entities and their business associates, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information.
- The federal transparency requirements under the Physician Payments Sunshine Act, enacted as part of the ACA, that require applicable manufacturers of covered drugs, devices, biologics and medical supplies to track and annually report to CMS payments and other transfers of value provided to physicians and teaching hospitals and certain ownership and investment interests held by physicians or their immediate family members.

- Analogous laws and regulations in various U.S. states, such as state anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers, state marketing and/or transparency laws applicable to manufacturers that may be broader in scope than
- U.S. federal requirements, state laws that require biopharmaceutical companies to comply with the biopharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. government, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect as HIPAA.
- Similar legislation is applicable in EU Member States, including by way of example and without limitation: the UK's Bribery Act 2010 or the French Decree No 3013-414 on Transparency of Benefits Given by Companies Manufacturing or Marketing Health and Cosmetic Products for Human Use (*Décret n° 2013-414 du 21 mai 2013 relatif à la transparence des avantages accordés par les entreprises produisant ou commercialisant des produits à finalité sanitaire et cosmétique destinés à l'homme*).

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations could be costly. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations were found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, individual imprisonment and exclusion from government funded healthcare programs, such as Medicare and Medicaid, any of which could substantially disrupt our operations. If the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Risks Related to Our Reliance on Third Parties

We expect to rely on third parties to conduct some or all aspects of our product manufacturing, quality control, protocol development, material supply, research and pre-clinical development, clinical testing and distribution, and these third parties may not perform satisfactorily.

We do not expect to independently conduct all aspects of our product manufacturing, quality control, protocol development, material supply, research and pre-clinical development and clinical testing as well as distribution and will rely on third parties for some of these activities. Under certain circumstances, these third parties may be entitled to terminate their engagements with us. If we need to enter into alternative arrangements, it could delay our product development activities.

In addition, in connection with our engagement of third parties, we expect to control only certain aspects of their activities. Our reliance on these third parties for product manufacturing, quality control, protocol development, material supply, research and pre-clinical development and clinical testing and distribution activities will reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations and study and trial protocols. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our studies in accordance with regulatory requirements or our stated study and trial plans and protocols, or if there are disagreements between us and these third parties, we may not be able to complete, or may be delayed in completing, the pre-clinical studies and clinical trials required to support future regulatory submissions and approval of the product candidates we develop. In some such cases we may need to locate an appropriate replacement third-party relationship, which may not be readily available or on acceptable terms, which would cause additional delay with respect to the approval of our product candidates and would thereby have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, reliance on third-party manufacturers, suppliers, research organizations and/or distributors entails risks to which we would not be subject if we conducted the above-mentioned activities ourselves, including:

- the inability to negotiate supply, manufacturing, research and/or distribution agreements with third parties under commercially reasonable terms or at all, because the number of potential suppliers, manufacturers, research organizations and distributors is limited and each must be approved by the FDA or comparable foreign regulatory authorities and would need to develop approved or validated processes for production, testing or distribution of material we use or of our products;

- that our third-party manufacturers, research organizations or distributors may have little or no experience with our products and may therefore require a significant amount of support from us in order to implement and maintain the infrastructure and processes required to manufacture, test or distribute our product candidates;
- reduced control over manufacturing and distribution activities and quality control processes and the possibility that our contract manufacturers, research organizations and distributors are not able to execute our manufacturing, testing or distribution procedures and other logistical support requirements appropriately;
- that our contract manufacturers may not perform as agreed, may not devote sufficient resources to our products or may not remain in the contract manufacturing business for the time required to supply investigational products for our clinical trials or to successfully produce, store and supply our products once approved;
- that we may not own, have equivalent necessary rights in, or access to the intellectual property rights to, or know how residing in any improvements or developments made by our third-party manufacturers or research organizations in the manufacturing process or testing of our products;
- breach, termination or nonrenewal of our agreements by third-party manufacturers, suppliers, research organizations or distributors in a manner or at a time that is costly or damaging to us; and
- disruptions to the operations of our subcontractors, suppliers, research organizations or distributors caused by conditions unrelated to our business or operations, including the bankruptcy of any such third-party provider.

Any of these events could lead to clinical study delays or failure to obtain regulatory approval, or impact our ability to successfully commercialize future products.

We and our contract manufacturers are subject to significant regulation with respect to manufacturing our products. The manufacturing facilities on which we rely may not continue to meet regulatory requirements and have limited capacity.

All entities involved in the preparation of products for clinical studies or commercial sale, including our existing contract manufacturers for our product candidates, are subject to extensive regulation. For example, in the United States, components of a finished CAR T-cell immunotherapy product approved for commercial sale or used in clinical studies must be manufactured in accordance with the current Good Manufacturing Practices (cGMP) requirements. Similarly, all investigational medicinal products in the EU must be manufactured in compliance with Good Manufacturing Practices, or GMP. The FDA's cGMP regulations and comparable regulations in other jurisdictions govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of adventitious agents or other contaminants, or to inadvertent changes in the properties or stability of the product candidates we develop that may not be detectable in final product testing. In the United States, we or our contract manufacturers must supply all necessary documentation in support of a BLA on a timely basis and must adhere to the FDA's cGMP requirements enforced by the FDA through its facilities inspection program. Our facilities and quality systems and the facilities and quality systems of some or all of our third-party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of our product candidates. In addition, the regulatory authorities may, at any time, inspect a manufacturing facility involved with the preparation and/or control of our product candidates, including starting and raw material, excipients, equipment and consumables, as well as the associated quality systems for compliance with the regulations applicable to the activities being conducted. If these facilities do not pass a pre-approval inspection, FDA approval of the products will not be granted.

Similarly, in the EU, Directive 2003/94/EC lays down the principles and guidelines of GMP in respect of medicinal products and investigational medicinal products and requires that products are consistently produced and controlled in accordance with the applicable quality standards. It also requires that medicinal products and investigational medicinal products that are imported from third countries are manufactured in accordance with standards at least equivalent to the GMP standards laid down in the EU. Directive 2003/94/EC, together with the detailed EU Guidelines on GMP, govern the quality management, personnel, premises, documentation, production operations, quality control, outsources activities, complaints and product recall and self-inspection. GMP inspections are performed by the competent authorities of the EU Member States, and are coordinated by the EMA in the case of medicinal products that are authorized through the EU centralized procedure.

If any of our third-party manufacturers, directly or indirectly (due to failure of their own sub-contractors), fail to maintain regulatory compliance, the regulator can impose regulatory sanctions including, among other things, refusal to approve a pending application for a new product, revocation or non-renewal of a pre-existing approval, refusal to accept some non-clinical and/or clinical data generated with material for which that third-party was responsible, or imposition of a hold on or refusal to commence, clinical investigations. As a result, our business, financial condition and results of operations may be materially harmed.

In addition, if supply from one approved manufacturer or supplier is interrupted, there could be a significant disruption in commercial and/or clinical supply of our products. Identifying and engaging an alternative manufacturer or supplier that complies with applicable regulatory requirements could result in further delay. Applicable regulatory agencies may also require additional studies if a new manufacturer or supplier is relied upon in connection with commercial production. Switching manufacturers or suppliers may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause the delay of some non-clinical and clinical studies, regulatory submissions, required approvals or commercialization of our product candidates, cause us to incur higher costs and prevent us from commercializing our products successfully. Furthermore, if our suppliers fail to meet contractual requirements, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical studies may be delayed or we could lose potential revenue.

Access to raw materials and products necessary for the conduct of clinical trials and manufacturing of our product candidates is not guaranteed.

We are dependent on third parties for the supply of various biological materials—such as cells, cell culture media, cytokines, vectors, nucleic acids or antibodies—that are necessary to produce our product candidates. The supply of these materials could be reduced or interrupted at any time. In such case, we may not be able to find other acceptable suppliers or on acceptable terms. If key suppliers or manufacturers are lost or the supply of the materials is diminished or discontinued, we may not be able to develop, manufacture, and market our product candidates in a timely and competitive manner. In addition, these materials are subject to stringent manufacturing process and rigorous testing. Delays in the completion and validation of facilities and manufacturing processes of these materials could adversely affect the ability to complete trials and commercialize our products candidates. In addition, our suppliers or manufacturers may, from time to time, change their internal manufacturing or testing processes and procedures. Such changes may require us to perform or have performed studies to demonstrate equivalence of the materials produced or tested under such new procedures. Such equivalence testing may impose significant delays in the development of our product candidates. Furthermore, our suppliers may face quality issues or findings from regulatory authorities' inspections that could lead to delays or interruption of the supply of our product candidates.

We or our collaborators rely on third parties to conduct, supervise and monitor our or their clinical studies, and if these third parties perform in an unsatisfactory manner, it may harm our business.

We or our collaborators rely on medical institutions, clinical investigators, contract research organizations, or CROs, contract laboratories, and collaborators to carry out or otherwise assist us in connection with our or their clinical trials and to perform data collection and analysis. While we will have agreements governing their activities, we will have limited influence over their actual performance and will control only certain aspects of such third parties' activities. Nevertheless, we will be responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal, regulatory, ethical and scientific standards, and our reliance on the third party does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the FDA's and other regulatory authorities' good clinical practices, or GCP, cGMP, good laboratory practices, or GLP, and other applicable requirements for conducting, recording and reporting the results of our pre-clinical studies and clinical trials to assure that the data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. Regulatory authorities around the world, including the FDA and European authorities, enforce these requirements through periodic inspections of study sponsors, CROs, principal investigators and clinical trial sites. If we, our CROs, our investigators or trial sites fail to comply with applicable GCP, GLP, GMP or other applicable regulatory requirements, the clinical data generated in our future clinical trials may be deemed unreliable and the FDA, EMA or other regulatory authorities around the world may require us to perform additional clinical trials before issuing any marketing authorizations for our product candidates. Upon inspection, the FDA or EMA may determine that our clinical trials did not comply with GCP, GLP and GMP requirements, which may render the data generated in those trials unreliable or otherwise not usable for the purpose of supporting the marketing authorization applications for our products. In addition, our future clinical trials will require a sufficient number of study subjects to evaluate the safety and efficacy of our product candidates. Accordingly, if, for example, our CROs fail to comply with these regulations or if trial sites fail to recruit a sufficient number of patients, we may be required to repeat such clinical trials, or anyway incur delays in the performance of such trials, which would delay the regulatory approval process for the approval of our product candidates.

Clinical trials conducted in reliance on third parties may be delayed, suspended, or terminated if:

- we are unable to negotiate agreements with third parties under reasonable terms;
- termination or nonrenewal of agreements with third parties occurs in a manner or at a time that is costly or damaging to us;
- the third parties do not successfully carry out their contractual duties or fail to meet regulatory obligations or expected deadlines; or
- the quality or accuracy of the data obtained by third parties is compromised due to their failure to adhere to clinical protocols, regulatory or ethical requirements, or for other reasons.

Third party performance failures may increase our costs, delay our ability to obtain regulatory approval, and delay or prevent starting or completion of clinical trials and delay or prevent commercialization of our product candidates. While we believe that there are numerous alternative sources to provide these services, in the event that we seek such alternative sources, we may not be able to enter into replacement arrangements without incurring delays or additional costs.

We may enter into agreements with third parties to sell and market any of the products candidates we develop on our own and for which we obtain regulatory approval, which may affect the sales of our own products and our ability to generate revenues.

Given our early development stage, we have no experience in sales, marketing and distribution of biopharmaceutical products. However, if any of our product candidates obtain marketing approval, we intend to develop sales and marketing capacity, either alone or with partners, by contracting with, or licensing, them to market any of our own products. Outsourcing sales and marketing in this manner may subject us to a variety of risks, including:

- our inability to exercise direct control over sales and marketing activities and personnel;
- failure or inability of contracted sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe our products;
- potential disputes with third parties concerning sales and marketing expenses, calculation of royalties, and sales and marketing strategies; and
- unforeseen costs and expenses associated with sales and marketing.

If we are unable to partner with a third party that has adequate sales, marketing, and distribution capabilities, we may have difficulty commercializing our product candidates, which would adversely affect our business, financial condition, and ability to generate product revenues.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties for the advancement of our products platform, pre-clinical testing, quality control, clinical trials, and manufacturing activities, we must, at times, share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, such as trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, agreements with third parties typically restrict the ability of such third parties to publish data potentially relating to our trade secrets. Our academic collaborators typically have rights to publish data, provided that we are notified in advance and may delay publication for a specified time in order to secure our intellectual property rights arising from the strategic alliance. In other cases, publication rights are controlled exclusively by us, although in some cases we may share these rights with other parties. We also conduct joint research and product development that may require us to share trade secrets under the terms of our research and development partnerships or similar agreements.

Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of these agreements, independent development or publication of information including our trade secrets in cases where we do not have proprietary or otherwise protected rights at the time of publication. A competitor's discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

Risks Related to Our Plant Products Business

Our plant product development efforts use complex integrated technology platforms and require substantial time and resources; these efforts may not be successful, or the rate of product improvement may be slower than expected.

The development of successful agricultural products using complex technology platforms such as ours requires significant levels of investment in research and development, including field testing, to demonstrate their effectiveness and can take several years or more. For the years ended December 31, 2015 and 2016, we spent €2.6 million and €3.7 million, respectively, on plant sciences research and development and royalty expenses. We intend to continue to invest in research and development, including additional and expanded field testing, to continue to improve the performance of our plant products. Our investment in research and development may not result in significant plant product revenues over the next several years, if ever.

Development of new or improved agricultural products involves risks of failure inherent in the development of products based on innovative and complex technologies. These risks include the possibility that:

- our plant products will fail to perform as expected in the field;
- our plant products will not receive necessary regulatory permits and governmental clearances in the markets in which we intend to sell them;
- our plant products may have poisonous effects on consumers;
- our plant products will be viewed as too expensive by our potential customers compared to competitive products;
- our plant products will be difficult to produce on a large scale or will not be economical to grow;
- proprietary rights of third parties will prevent us, our collaborators, or our licensees from marketing our plant products;
- we may be unable to patent our discoveries in the necessary jurisdictions,
- we or our collaborators may be unable to fully develop or commercialize products containing our plant products or, if developed, to commercialize such products or to do so in a timely manner; and
- third parties may develop superior or equivalent plant products.

Our plant products are not yet available for commercial use.

Our plant products are in the early stages of development, and there is no established market for them. Completion of product development could be protracted. Such products are not yet ready for commercial launch and may not be ready for commercial launch for numerous years, if ever. If we are not able to commercialize our existing products or new products on a significant scale, then we may not be successful in building a sustainable or profitable plant sciences business. Moreover, we expect to price our products based on our assessment of the value that we believe they provide to the customer, rather than on the cost of production. If our customers attribute a lower value to our products than we do, they may not be willing to pay the premium prices that we expect to charge. Pricing levels may also be negatively affected if our products are unsuccessful in producing the yields we expect.

We rely on third parties to conduct, monitor, support, and oversee field trials and other research services for product candidates in development, and any performance issues by third parties, or our inability to engage third parties on acceptable terms, may impact our ability to successfully commercialize such product candidates.

We currently conduct field trials, and plan to conduct further field trials, of our plant product candidates in various geographies. We currently rely on third parties to conduct, monitor, support, and oversee these field trials. In some cases, these field trials are conducted outside of the United States, making it difficult for us to monitor the daily activity of the work being conducted by the third parties that we engage. Although we provide our third-party contractors with extensive protocols regarding the establishment, management, harvest, transportation and storage of our product candidates, we have limited control over the execution of field trials. Consequently, the success of these field trials depends upon the ability of these third parties to correctly follow our suggested protocols. However, there is no guarantee that third parties will devote adequate time and resources to our field trials or conduct the field trials in accordance with our protocols, including maintenance of all required field trial information. Any such failures may result in delays in the development of our product candidates or the incurrence of additional costs. Even if our third-party contractors adhere to our suggested protocols, field trials may fail to succeed for a variety of other reasons, including weather, disease or pests, improper timing of planting our seeds, or incorrect fertilizer use. Ultimately, we remain responsible for ensuring that each of our field trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our responsibilities.

Additionally, if we are unable to maintain or enter into agreements with third-party contractors on acceptable terms, or if any such engagement is terminated prematurely, we may be unable to conduct or complete our field trials in the manner we anticipate. If our relationship with any of these third-party contractors is terminated, we may be unable to enter into arrangements with alternative contractors on commercially reasonable terms, or at all. Switching or adding third party contractors can involve substantial cost and require extensive management time and focus. In addition, there is a natural transition period when any new third party commences field trial work. As a result, delays may occur, which could materially impact our ability to meet our desired development timelines.

Our crops are new, and producers may require instruction to successfully establish, grow and harvest our crops.

As part of our customer support, we plan to provide agricultural producers with information and protocols regarding the establishment, management, harvest, transportation and storage of our crops. Such crop management recommendations may include equipment selection, planting and harvest timing, application of crop protection chemicals or herbicides and storage systems and protocols. Our general or specific protocols may not apply in all circumstances, may be improperly implemented, may not be sufficient, or may be incorrect, leading to reduced yields, crop failures or other production problems or losses by our customers. Such failures may harm our customer relationships, our reputation and our ability to successfully market our products, and may lead to liability claims against us. Further, the use of our seeds may require a change in current planting, rotation or agronomic practices, which may be difficult to implement or may discourage the use of our plant products by agricultural producers.

There are various reasons why our crops of our products, once available, may fail to succeed, including weather, disease or pests, improper timing of planting our seeds, or incorrect fertilizer use. Statements by potential customers about negative experiences with our products could harm our reputation, and the decision by these parties not to proceed with large-scale seed purchases could harm our business, revenue and profitability.

The successful commercialization of our plant products depends on our ability to produce high-quality plants and seeds cost-effectively on a large scale and to accurately forecast demand for our plant products and we may be unable to do so.

The production of commercial-scale quantities of seeds requires the multiplication of the plants or seeds through a succession of plantings and seed harvests. The cost-effective production of high-quality, high-volume quantities of some of our plant products depends on our ability to scale our production processes to produce plants and seeds in sufficient quantity to meet demand. For example, food products such as soybean oil and wheat flour, and feed ingredients such as soybean meal, will require optimized production and commercialization of the underlying plant and seed harvests. We cannot assure you that our existing or future seed production techniques will enable us to meet our large-scale production goals cost-effectively for the plant products in our pipeline. Even if we are successful in developing ways to increase yields and enhance quality, we may not be able to do so cost-effectively or on a timely basis, which could adversely affect our ability to achieve profitability. If we are unable to maintain or enhance the quality of our plants and seeds as we increase our production capacity, including through the expected use of third parties, we may experience reductions in customer demand, higher costs and increased inventory write-offs.

In addition, because of the length of time it takes to produce commercial quantities of marketable plants and seeds, we will need to make seed production decisions well in advance of plant product sales. Our ability to accurately forecast demand can be adversely affected by a number of factors outside of our control, including changes in market conditions, environmental factors, such as pests and diseases, and adverse weather conditions. A shortfall in the supply of our products may reduce product sales revenue, damage our reputation in the market and adversely affect customer relationships. Any surplus in the amount of plant products we have on hand may negatively impact cash flows, reduce the quality of our inventory and ultimately result in write-offs of inventory. Any failure on our part to produce sufficient inventory, or overproduction of a particular product, could harm our business, results of operations and financial condition. In addition, customers may cancel orders or request a decrease in quantity at any time prior to delivery of the plants or seeds, which may lead to a surplus of our plant products.

We face significant competition in plant biotechnology and many of our competitors have substantially greater financial, technical and other resources than we do.

The market for agricultural biotechnology products, such as seeds and seed traits, are intensely competitive and change rapidly. The agricultural biotechnology market is characterized by a small number of large companies, which control the vast majority of patented seeds and technology. The majority of these competitors have substantially greater financial, technical, marketing, sales, distribution and other resources than we do, such as larger research and development staff, more experienced marketing and manufacturing organizations and more well-established sales forces. As a result, we may be unable to compete successfully against our current or future competitors, which may result in price reductions, reduced margins and the inability to achieve market acceptance for products containing our discoveries. We expect to continue to face significant competition in the markets in which we intend to commercialize our plant products. Our competitors in the agricultural biotechnology space include:

- Companies developing plants with enhanced properties: Arcadia Biosciences, Inc., Chromatin Inc., Cibus Global, Ltd., Evogene Ltd., Danzinger Innovation Ltd., Keygene N.V. and Precision Plant Sciences, Inc.
- Major seed/agrochemical companies: BASF SE, Bayer AG, DuPont Pioneer, Groupe Limagrain Holding SA, Monsanto Co., Syngenta AG, Takii & Company, LTD, The Dow Chemical Co. and The J.R. Simplot Co.

Many of our competitors engage in ongoing research and development and have a competitive advantage in their ability to bring new products to market quickly. Technological developments by our competitors could render our products less competitive, resulting in reduced sales compared to our expectations. Our ability to compete effectively and to achieve commercial success depends, in part, on our ability to: control manufacturing and marketing costs; effectively price and market our plant products; successfully develop an effective marketing program, and an efficient distribution system; develop of new products with properties attractive to our customers, and commercialize of our products quickly without incurring major regulatory costs. We may not be successful in achieving these factors and any such failure may adversely affect our plant sciences business and its results of operations and financial condition.

We also anticipate increased competition in the future as new companies enter the market and new technologies become available, particularly in the areas of gene editing. Our technology may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors, which will prevent or limit our ability to generate revenues from the commercialization of our technology.

Our plant sciences business is highly seasonal and subject to weather conditions and other factors beyond our control, which may cause our sales and operating results to fluctuate significantly.

The sale of plant products is dependent upon planting and growing seasons, which vary from year to year, and are expected to result in both highly seasonal patterns and substantial fluctuations in quarterly sales and profitability. As we have not yet made any sales of our plant products, we have not yet experienced the full nature or extent to which this business may be seasonal. Weather conditions and natural disasters, such as heavy rains, hurricanes, hail, floods, tornadoes, freezing conditions, drought or fire, also affect decisions by our customers about the types and amounts of seeds to plant and the timing of harvesting and planting such seeds. Disruptions that cause delays by our customers in harvesting or planting can result in the movement of orders to a future quarter, which would negatively affect the quarter and cause fluctuations in our operating results.

The successful commercialization of our plant products may face challenges from public perceptions of genetically engineered products and ethical, legal, environmental and social concerns. In addition, our products may become subject to government regulation.

The successful commercialization of our plant products depends, in part, on public acceptance of genetically engineered agricultural products. Any increase in negative perceptions of gene editing may result in decreased market acceptance of our plant products. Increased negative public opinion, or more restrictive government regulations in response thereto, would have a negative effect on our plant sciences business and may delay or impair the development and commercialization of our plant products.

The commercial success of our plant products may be adversely affected by claims that biotechnology plant products are unsafe for consumption or use, pose risks of damage to the environment, or create legal, social and ethical dilemmas. If we are not able to overcome these concerns, our products may not achieve market acceptance. Any of the risks discussed below could result in expenses, delays or other impediments to our plant development programs or the market acceptance and commercialization of our plant products:

- public attitudes about the safety and environmental hazards of, and ethical concerns over, genetic research and biotechnology plant products, which could influence public acceptance of our technologies and plant products;
- public attitudes regarding, and potential changes to laws governing, ownership of genetic material, which could weaken our intellectual property rights with respect to our genetic material and discourage collaborators from supporting, developing or commercializing our products and technologies; and
- failure to maintain or secure consumer confidence in, or to maintain or receive governmental approvals for, our plant products.

In addition, changes in regulatory requirements could result in a substantial increase in the time and costs associated with developing our plant products and negatively impact our operating results.

In the United States, the United States Department of Agriculture, or USDA, regulates, among other things, the introduction (including the importation, interstate movement, or release into the environment) of organisms and products altered or produced through genetic engineering that are plant pests or that there is reason to believe are plant pests. Such organisms and products are considered “regulated articles.” However, a petitioner may submit a request for a determination by the USDA of “nonregulated status” for a particular article. A petition for determination of nonregulated status must include detailed information, including relevant experimental data and publications, and a description of the genotypic differences between the regulated article and the nonmodified recipient organism, among other things. We previously submitted a request for a determination of “nonregulated status” to the USDA for our potato product candidates, our high oleic and low linolineic soybean product candidates and our powdery mildew-resistant wheat product candidate. The USDA confirmed in writing that each of these product candidates is not

deemed to be a "regulated article" under the Plant Protection Act because it does not contain genetic material from plant pests. While we believe that the USDA's reasoning will continue to extend to our other product candidates, we have not obtained a determination from USDA that any of our other product candidates are not "regulated articles" under these regulations. USDA's regulations also require that companies obtain a permit or file a notification before engaging in the introduction (including the importation, interstate movement, or release into the environment such as field testing) of "regulated articles." We cannot predict whether the USDA or advocacy groups will challenge our interpretation, or whether the USDA will alter the manner in which it interprets its own regulations or institutes new regulation, or otherwise modifies regulations in a way that will subject our products to more burdensome standards, thereby substantially increasing the time and costs associated with developing our plant products. Moreover, we cannot assure you that the USDA will apply this same analysis to any of our other plant products in development. Complying with USDA's plant pest regulations, including permitting requirements, is a costly, time-consuming process and could delay or prevent the commercialization of our plant products.

Our plant products may also be subject to extensive FDA food product regulations. Under sections 201(s) and 409 of the Federal Food, Drug, and Cosmetic Act, any substance that is intentionally added to food is a food additive, and is therefore subject to FDA premarket review and approval, unless the substance is generally recognized, among qualified experts, as having been adequately shown to be safe under the conditions of its intended use (generally recognized as safe, or GRAS), or unless the use of the substance is otherwise excluded from the definition of a food additive. The FDA may classify some or all of our product candidates as containing a food additive that is not GRAS or otherwise determine that our plant products contain significant compositional differences from existing plant products that require further review. Such classification would cause these product candidates to require pre-market approval, which could delay the commercialization of these products.

In the EU, genetically modified foods, or GM foods, can only be allowed on the market once they have been authorized subject to rigorous safety assessments. The procedures for evaluation and authorization of GM foods are governed by Regulation (EC) 1829/2003 on GM food and feed and Directive 2001/18/EC on the release of genetically modified organisms, or GMOs, into the environment. If the GMO is not to be used in food or feed, then an application must be made under Directive 2001/18/EC. If the GMO is to be used in food or feed (but it is not grown in the EU) then a single application for both food and feed purposes under Regulation 1829/2003 should be made. If the GMO is used in feed or food and it is also grown in the EU, an application for both cultivation and food/feed purposes needs to be carried out under Regulation (EC) 1829/2003. A different EU regulation, Regulation (EC) 1830/2003, regulates the labeling of products that contain GMOs that are placed on the EU market. There are currently legislative proposals in the EU that would allow EU Member States to restrict or prohibit growing GMOs in their territory, on a range of environmental grounds, even if such crops were previously authorized at EU level. Should these proposals become law, growing GMOs may become more difficult in individual EU Member States.

We cannot predict whether or when any jurisdiction will change its regulations with respect to our plant products. Advocacy groups have engaged in publicity campaigns and filed lawsuits in various countries against companies and regulatory authorities, seeking to halt biotechnology approval activities or influence public opinion against genetically engineered products. In addition, governmental reaction to negative publicity concerning our plant products could result in greater regulation of genetic research and derivative products or regulatory costs that render our plant products cost prohibitive.

We may be sued for product liability and if such lawsuits were determined adversely, we could be subject to substantial damages, for which insurance coverage is not available.

We may be held liable if any plant product we develop, or any product that uses or incorporates, any of our technologies, causes injury or is found otherwise unsuitable during product testing, production, marketing or sale. For example, the detection of unintended biotechnology material in pre-commercial seed, commercial seed varieties or the crops and products produced may result in the inability to market the crops grown or physical injury to consumers resulting in potential liability for us as the seed producer or technology provider. If this were to occur, we could be subject to claims by multiple parties based not only on the cost of our plant products but also on their lost profits and business opportunities, including but not limited to trade disruption. Courts have levied substantial damages in the U.S. and elsewhere against a number of companies in the agricultural industry over the past several years in connection with claims for injuries allegedly caused by use of their products. Calyxt does not currently have product liabilities coverage for such claims. In addition, the detection of unintended biotechnology material in our seeds or in the environment could result in governmental actions such as mandated crop destruction, product recalls or environmental cleanup or monitoring. Concerns about seed quality related to biotechnology could also lead to additional regulations being imposed on our business, such as regulations related to testing procedures, mandatory governmental reviews of biotechnology advances, or the integrity of the food supply chain from the farm to the finished product.

Some of our plant products may end up in markets or countries in which they have not received regulatory approval, which may result regulatory challenges or lawsuits.

The scale of the commodity food industry may make it difficult to monitor and control the distribution of our plant products. As a result, our plant products may be sold inadvertently within jurisdictions where they are not approved for distribution. Such sales may lead to regulatory challenges or lawsuits against us, which could result in significant expenses and management attention.

Our plant sciences activities are currently conducted at a limited number of locations, which makes us susceptible to damage or business disruptions caused by natural disasters or acts of vandalism.

Calyxt's current headquarters and certain research and development operations are located in New Brighton, Minnesota and Calyxt's new headquarters facility is located in Roseville, Minnesota. The greenhouse for the new headquarters is operational and the remainder of the new facility which includes an office, labs and demonstration kitchen are expected to be operational in late 2017 or early 2018. Our seed production takes place primarily in the United States and Argentina. Warehousing for seed storage, which is conducted by a third-party contractor, is located primarily in Minnesota and Wisconsin. We take precautions to safeguard our facilities, including insurance, health and safety protocols, and offsite storage of critical research results and computer data. However, a natural disaster, such as a hurricane, drought, fire, flood, tornado, earthquake, or acts of vandalism, could cause substantial delays in our operations, damage or destroy our equipment, inventory or development projects, and cause us to incur additional expenses.

Risks Related to Intellectual Property

Our ability to compete may decline if we do not adequately protect our proprietary rights.

Our commercial success depends, in part, on obtaining and maintaining proprietary rights to our intellectual property estate, including our product candidates, as well as successfully defending these rights against third-party challenges. We will only be able to protect our product candidates from unauthorized use by third parties to the extent that valid and enforceable patents, or effectively protected trade secrets, cover them. Our ability to obtain patent protection for our product candidates is uncertain due to a number of factors, including:

- we may not have been the first to invent the technology covered by our pending patent applications or issued patents;
- we cannot be certain that we were the first to file patent applications covering our product candidates, including their compositions or methods of use, as patent applications in the United States and most other countries are confidential for a period of time after filing;
- others may independently develop identical, similar or alternative products or compositions or methods of use thereof;
- our disclosures in patent applications may not be sufficient to meet the statutory requirements for patentability;
- any or all of our pending patent applications may not result in issued patents;
- we may not seek or obtain patent protection in countries that may eventually provide us a significant business opportunity;
- any patents issued to us may not provide a basis for commercially viable products, may not provide any competitive advantages, or may be successfully challenged by third parties;
- our compositions and methods may not be patentable;
- others may design around our patent claims to produce competitive products that fall outside of the scope of our patents; and
- others may identify prior art or other bases upon which to challenge and ultimately invalidate our patents or otherwise render them unenforceable.

Even if we have or obtain patents covering our product candidates or compositions, we may still be barred from making, using and selling our product candidates or technologies because of the patent rights of others. Others may have filed, and in the future may file, patent applications covering compositions, products or methods that are similar or identical to ours, which could materially affect our ability to develop successfully our product candidates or to commercialize successfully our products if approved. In addition, because patent applications can take many years to issue, there may be currently pending applications unknown to us that may later result in issued patents that our product candidates or compositions may infringe. These patent applications may have priority over patent applications filed by us.

Obtaining and maintaining a patent portfolio entails significant expense of resources. Part of such expense includes periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications due over the course of several stages of prosecuting patent applications, and over the lifetime of maintaining and enforcing issued patents. We may or may not choose to pursue or maintain protection for particular intellectual property in our portfolio. If we choose to forgo patent protection or to allow a patent application or patent to lapse purposefully or inadvertently, our competitive position could suffer. Furthermore, we employ reputable law firms and other professionals to help us comply with the various procedural, documentary, fee payment and other similar provisions we are subject to and, in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which failure to make certain payments or noncompliance with certain requirements in the patent process can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

Legal action that may be required to enforce our patent rights can be expensive and may involve the diversion of significant management time. In addition, these legal actions could be unsuccessful and could also result in the invalidation of our patents or a finding that they are unenforceable. We may or may not choose to pursue litigation or other actions against those that have infringed on our patents, or have used them without authorization, due to the associated expense and time commitment of monitoring these activities. If we fail to protect or to enforce our intellectual property rights successfully, our competitive position could suffer, which could harm our results of operations.

Patents and patent applications involve highly complex legal and factual questions, which, if determined adversely to us, could negatively impact our position.

The patent positions of biopharmaceutical companies and other actors in our fields of business can be highly uncertain and typically involve complex scientific, legal and factual analyses. In particular, the interpretation and breadth of claims allowed in some patents covering biopharmaceutical compositions may be uncertain and difficult to determine, and are often affected materially by the facts and circumstances that pertain to the patented compositions and the related patent claims. The standards of the United States Patent and Trademark Office, or USPTO, are sometimes uncertain and could change in the future. Consequently, the issuance and scope of patents cannot be predicted with certainty. Patents, if issued, may be challenged, invalidated or circumvented. U.S. patents and patent applications may also be subject to interference proceedings, and U.S. patents may be subject to reexamination proceedings, post-grant review and/or *inter partes* review in the USPTO. Foreign patents as well may be subject to opposition or comparable proceedings in the corresponding foreign patent office. For example, one of the patents relating to our TALEN technology is currently under opposition before the European Patent Office. Challenges to our patents could result in either loss of the patent or denial of the patent application or loss or reduction in the scope of one or more of the claims of the patent or patent application. In addition, such interference, reexamination, post-grant review, *inter partes* review and opposition proceedings may be costly. Accordingly, rights under any issued patents may not provide us with sufficient protection against competitive products or processes.

Furthermore, even if not challenged, our patents and patent applications may not adequately protect our products or prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and could threaten our ability to successfully commercialize, our product candidates. Furthermore, for U.S. applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third party or instituted by the USPTO in order to determine who was the first to invent any of the subject matter covered by such patent claims.

In addition, changes in, or different interpretations of, patent laws in the United States and other countries may permit others to use our discoveries or to develop and commercialize our technology and products without providing any compensation to us, or may limit the scope of patent protection that we are able to obtain. The laws of some countries do not protect intellectual property rights to the same extent as U.S. laws and those countries may lack adequate rules and procedures for defending our intellectual property rights.

If we fail to obtain and maintain patent protection and trade secret protection of our product candidates, we could lose our competitive advantage and competition we face would increase, reducing any potential revenues and adversely affecting our ability to attain or maintain profitability.

Developments in patent law could have a negative impact on our business.

From time to time, the United States Supreme Court, or the Supreme Court, other federal courts, the United States Congress, the USPTO and similar foreign authorities may change the standards of patentability and any such changes could have a negative impact on our business.

The Leahy-Smith America Invents Act, or the America Invents Act, which was signed into law in 2011, includes a number of significant changes to U.S. patent law. These changes include a transition from a "first-to-invent" system to a "first-to-file" system, changes to the way issued patents are challenged, and changes to the way patent applications are disputed during the examination process. As a result of these changes, the patent law in the United States may favor larger and more established companies that have greater resources to devote to patent application filing and prosecution. The USPTO has developed new and untested regulations and procedures to govern the full implementation of the America Invents Act, and many of the substantive changes to patent law associated with the America Invents Act, and, in particular, the first-to-file provisions became effective on March 16, 2013. Substantive changes to patent law associated with the America Invents Act may affect our ability to obtain patents, and if obtained, to enforce or defend them. Accordingly, it is not clear what, if any, impact the America Invents Act will have on the cost of prosecuting our patent applications and our ability to obtain patents based on our discoveries and to enforce or defend any patents that may issue from our patent applications, all of which could have a material adverse effect on our business.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to patent protection, because we operate in the highly technical field of development of therapies, we rely in part on trade secret protection in order to protect our proprietary technology and processes. However, trade secrets are difficult to protect. We expect to enter into confidentiality and intellectual property assignment agreements with our employees, consultants, outside scientific collaborators, sponsored researchers, and other advisors. These agreements generally require that the other party keep confidential and not disclose to third parties all confidential information developed by the party or made known to the party by us during the course of the party's relationship with us. These agreements also generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may be breached or held unenforceable and may not effectively assign intellectual property rights to us.

In addition to contractual measures, we try to protect the confidential nature of our proprietary information using physical and technological security measures. Such measures may not provide adequate protection for our proprietary information. For example, our security measures may not prevent an employee or consultant with authorized access from misappropriating our trade secrets and providing them to a competitor, and the recourse we have available against such misconduct may not provide an adequate remedy to protect our interests fully. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret can be difficult, expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets. Furthermore, our proprietary information may be independently developed by others in a manner that could prevent legal recourse by us. If any of our confidential or proprietary information, including our trade secrets, were to be disclosed or misappropriated, or if any such information was independently developed by a competitor, our competitive position could be harmed.

We will not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing, prosecuting and defending patents on our product candidates in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than those in the United States, assuming that rights are obtained in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

Competitors may use our technologies in jurisdictions where we do not pursue and obtain patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but where our ability to enforce our patent rights is not as strong as in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent such competition.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States. Patent protection must ultimately be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in such countries. In addition, the legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property protection, especially those relating to biopharmaceuticals or biotechnologies. As a result, many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. Such issues may make it difficult for us to stop the infringement of our patents, if obtained, or the misappropriation of our other intellectual property rights. For example, many foreign countries, including the EU countries, have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit. In those countries, we and our licensors may

have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our and our licensors' efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

Furthermore, proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded to us, if any, may not be commercially meaningful, while the damages and other remedies we may be ordered to pay such third parties may be significant. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Third parties may assert rights to inventions we develop or otherwise regard as our own.

Third parties may in the future make claims challenging the inventorship or ownership of our intellectual property. We have written agreements with collaborators that provide for the ownership of intellectual property arising from our strategic alliances. These agreements provide that we must negotiate certain commercial rights with such collaborators with respect to joint inventions or inventions made by our collaborators that arise from the results of the strategic alliance. In some instances, there may not be adequate written provisions to address clearly the allocation of intellectual property rights that may arise from the respective alliance. If we cannot successfully negotiate sufficient ownership and commercial rights to the inventions that result from our use of a third-party collaborator's materials when required, or if disputes otherwise arise with respect to the intellectual property developed through the use of a collaborator's samples, we may be limited in our ability to capitalize on the full market potential of these inventions. In addition, we may face claims by third parties that our agreements with employees, contractors, or consultants obligating them to assign intellectual property to us are ineffective, or are in conflict with prior or competing contractual obligations of assignment, which could result in ownership disputes regarding intellectual property we have developed or will develop and could interfere with our ability to capture the full commercial value of such inventions. Litigation may be necessary to resolve an ownership dispute, and if we are not successful, we may be precluded from using certain intellectual property, or may lose our rights in that intellectual property. Either outcome could have a material adverse impact on our business.

Third parties may assert that our employees or consultants have wrongfully used or disclosed confidential information or misappropriated trade secrets.

We may employ individuals who were previously employed at universities or other biopharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

A dispute concerning the infringement or misappropriation of our proprietary rights or the proprietary rights of others could be time consuming and costly, and an unfavorable outcome could harm our business.

There is significant litigation in the biopharmaceutical industry regarding patent and other intellectual property rights. Although we are not currently subject to any material pending intellectual property litigation, and are not aware of any such threatened litigation, we may be exposed to future litigation by third parties based on claims that our product candidates, technologies or activities infringe the intellectual property rights of others. If our development activities are found to infringe any such patents, we may have to pay significant damages or seek licenses to such patents. A patentee could prevent us from using the patented drugs or compositions. We may need to resort to litigation to enforce a patent issued to us, to protect our trade secrets, or to determine the scope and validity of third-party proprietary rights.

From time to time, we may hire scientific personnel or consultants formerly employed by other companies involved in one or more areas similar to the activities conducted by us. Either we or these individuals may be subject to allegations of trade secret misappropriation or other similar claims as a result of prior affiliations. If we become involved in litigation, it could consume a substantial portion of our managerial and financial resources, regardless of whether we win or lose. We may not be able to afford the costs of litigation. Any adverse ruling or perception of an adverse ruling in defending ourselves against these claims could have a material adverse impact on our cash position. Any legal action against us or our collaborators could lead to:

- payment of damages, potentially including treble damages if we are found to have willfully infringed a party's patent rights;
- injunctive or other equitable relief that may effectively block our ability to further develop, commercialize, and sell products; or
- our or our collaborators' being required to obtain a license under third-party intellectual property, and such license may not be available on commercially acceptable terms, if at all, all of which could have a material adverse impact on our cash position and business and financial condition. As a result, we could be prevented from commercializing current or future product candidates.

We may infringe intellectual property rights of others, which may prevent or delay our product development efforts and may prevent or increase the costs of our successfully commercializing our product candidates, if approved.

Our success will depend in part on our ability to operate without infringing the intellectual property and proprietary rights of third parties. We cannot assure you that our business operations, products and methods and the business operations, products and methods of our collaborators do not or will not infringe the patents or other intellectual property rights of third parties.

The biopharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that our product candidates or the use of our technologies infringe patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Any claim relating to intellectual property infringement that is successfully asserted against us may require us to pay substantial damages, including treble damages and attorney's fees if we or our collaborators are found to be willfully infringing another party's patents, for past use of the asserted intellectual property and royalties and other consideration going forward if we are forced to take a license. In addition, if any such claim were successfully asserted against us and we could not obtain such a license, we or our collaborators may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing our products or the products we developed with our collaborators.

Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court, or redesign our products. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease developing, selling or otherwise commercializing our product candidates;
- pay substantial damages for past use of the asserted intellectual property;
- obtain a license from the holder of the asserted intellectual property, which license may not be available on reasonable terms, if at all; and
- in the case of trademark claims, redesign, or rename trademarks we may own, to avoid infringing the intellectual property rights of third parties, which may not be possible and, even if possible, could be costly and time-consuming.

Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering our product candidate, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Furthermore, third parties may petition courts for declarations of invalidity or unenforceability with respect to our patents or individual claims there. If successful, such claims could narrow the scope of protection afforded our product candidates and future products, if any. Grounds for a validity challenge include alleged failures to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review and equivalent proceedings in foreign jurisdictions, e.g., opposition proceedings. Such proceedings could result in revocation or amendment of our patents in such a way that they no longer cover our product candidates or competitive products. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to validity, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

We may not be successful in obtaining or maintaining necessary rights to product components and processes for our development pipeline through acquisitions and in-licenses.

We have rights, through licenses from third parties and under patents that we own, to the intellectual property to develop our product candidates. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently, and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size and greater cash resources and clinical development and commercialization capabilities.

For example, we sometimes collaborate with academic institutions to accelerate our pre-clinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the strategic alliance. Regardless of such right of first negotiation, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to us, and the institution may license such intellectual property rights to third parties, potentially blocking our ability to pursue our development and commercialization plans.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license to us intellectual property rights that we require in order to successfully develop and commercialize our products. We also may be unable to obtain such a license or assignment on terms that would allow us to make an appropriate return on our investment. In either event, our business, financial condition and prospects for growth could suffer.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We are a party to a number of intellectual property license agreements that are important to our business and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, our licensors may have the right to terminate the license, in which event we would not be able to market products covered by the license.

In addition, disputes may arise regarding the payment of the royalties due to licensors in connection with our exploitation of the rights we license from them. Licensors may contest the basis of royalties we retained and claim that we are obligated to make payments under a broader basis. In addition to the costs of any litigation we may face as a result, any legal action against us could increase our payment obligations under the respective agreement and require us to pay interest and potentially damages to such licensors.

In some cases, patent prosecution of our licensed technology is controlled solely by the licensor. If such licensor fails to obtain and maintain patent or other protection for the proprietary intellectual property we license from such licensor, we could lose our rights to such intellectual property or the exclusivity of such rights, and our competitors could market competing products using such intellectual property. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business significantly. In other cases, we control the prosecution of patents resulting from licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners.

Under each of the material exclusive licenses granted to us, the licensor controls the prosecution of patents covered by the license. Under our collaboration agreement with Pfizer, we and Pfizer each generally control the prosecution of our respective owned patents, and Pfizer has the first right to elect to control the prosecution of certain jointly-developed intellectual property. Under our collaboration agreement with Servier, we and Servier each generally control the prosecution of our respective owned patents, and we generally control the prosecution of joint patents, unless Servier exercises its option under the agreement to obtain an exclusive license to further develop, manufacture and commercialize a product candidate, in which case Servier will control prosecution of the joint patents. In addition, Servier currently controls prosecution of those patent rights covering solely UCART19. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the basis of royalties due to our licensors;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

If disputes over intellectual property that we have licensed from third parties prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

Risks Related to Our Organization, Structure and Operation

We will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As of December 31, 2016, we had 122 full-time employees and we expect to increase our number of employees and the scope and location of our operations. To manage our anticipated development and expansion, including the development and the commercialization of our product candidates, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Also, our management may need to divert a disproportionate amount of its attention away from its day-to-day activities and devote a substantial amount of time to managing these development activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage our expected development and expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates, if approved, and compete effectively will depend, in part, on our ability to effectively manage the future development and expansion of our company.

We depend on key management personnel and attracting and retaining other qualified personnel, and our business could be harmed if we lose key management personnel or cannot attract and retain other qualified personnel.

Our success depends to a significant degree upon the technical skills and continued service of certain members of our management team, including Dr. André Choulika, our co-founder and Chief Executive Officer; Dr. David Sourdive, our co-founder and Executive Vice President, Technical Operations; Dr. Mathieu Simon, our Chief Operating Officer; Dr. Philippe Duchateau, our Chief Scientific Officer; and Dr. Dan Voytas, the Chief Scientific Officer of Calyxt, Inc. The loss of the services of these key executive officers could have a material adverse effect on us. Our success also will depend upon our ability to attract and retain additional qualified management, regulatory, medical, technical, and sales and marketing executives and personnel. The failure to attract, integrate, motivate, and retain additional skilled and qualified personnel could have a material adverse effect on our business.

We compete for such personnel against numerous companies, including larger, more established companies with significantly greater financial resources than we possess. In addition, failure to succeed in our product candidates' development may make it more challenging to recruit and retain qualified personnel. There can be no assurance that we will be successful in attracting or retaining such personnel and the failure to do so could have a material adverse effect on our business, financial condition, and results of operations.

In order to induce valuable employees to remain at Cellectis, we have provided over the last years free shares and stock options to purchase ordinary shares that vest over time. The value to employees of free shares and stock options that vest over time may be significantly affected by movements in the price of our ordinary shares that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies.

Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us. The loss of the services of any of our key executive officers or other officers or senior employees within a short timeframe, and our inability to find suitable replacements could potentially harm our business, prospects, financial condition or results of operations. We do not maintain "key man" insurance policies on the lives of any of our employees. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level, and senior managers as well as junior, mid-level, and senior scientific and medical personnel.

The requirements of being a U.S. public company require significant resources and management attention and affect our ability to attract and retain executive management and qualified board members.

As a U.S. public company, we incur significant legal, accounting, and other expenses. We are subject to the Exchange Act, including the reporting requirements thereunder, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Nasdaq listing requirements and other applicable securities rules and regulations. Compliance with these rules and regulations results in substantial legal and financial compliance costs and makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources. These costs and other impacts would increase if we ceased to qualify as a foreign private issuer, in which case we would be required to comply with the enhanced reporting and governance requirements applicable to U.S. domestic reporting companies.

Further, being a U.S. public company and a French public company has impacted the disclosure of information and required compliance with two sets of applicable rules. From time to time, this may result in uncertainty regarding compliance matters and has resulted in higher costs necessitated by legal analysis of dual legal regimes, ongoing revisions to disclosure and adherence to heightened governance practices. As a result of the enhanced disclosure requirements of the U.S. securities laws, business and financial information that we report is broadly disseminated and highly visible to investors, which we believe may increase the likelihood of threatened or actual litigation, including by competitors and other third parties, which could, even if unsuccessful, divert financial resources and the attention of our management from our operations.

We must maintain effective internal control over financial reporting, and if we are unable to do so, the accuracy and timeliness of our financial reporting may be adversely affected, which could have a material adverse effect on our business, investor confidence and market price.

We must maintain effective internal control over financial reporting in order to accurately and timely report our results of operations and financial condition. In addition, as a public company, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, requires, among other things, that we assess the effectiveness of our disclosure controls and procedures and the effectiveness of our internal control over financial reporting at the end of each fiscal year. Pursuant to Section 404 of the Sarbanes-Oxley Act, we are required to furnish a report by our management on our internal control over financial reporting, and we are required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. The rules governing the standards that must be met for our management to assess our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act are complex and require significant documentation, testing and possible remediation. These stringent standards require that our audit and finance committee be advised and regularly updated on management's review of internal control over financial reporting.

Our compliance with applicable provisions of Section 404 requires that we incur substantial accounting expense and expend significant management attention and time on compliance-related issues as we implement additional corporate governance practices and comply with reporting requirements.

If we fail to staff our accounting and finance function adequately or maintain internal control over financial reporting adequate to meet the requirements of the Sarbanes-Oxley Act, our business and reputation may be harmed. Moreover, if we are not able to comply with the applicable requirements of Section 404 in a timely manner, we may be subject to sanctions or investigations by regulatory authorities, including the SEC and Nasdaq. Furthermore, if we are unable to conclude that our internal control over financial reporting is effective or if our independent registered public accounting firm identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of our stock could decline, and we could be subject to sanctions or investigations by the SEC, Nasdaq or other regulatory authorities. Failure to implement or maintain effective internal control systems required of public companies could also restrict our access to the capital markets. The occurrence of any of the foregoing would also require additional financial and management resources.

Our failure to maintain certain tax benefits applicable to French technology companies may adversely affect our results of operations.

As a French technology company, we have benefited from certain tax advantages, including, for example, the research tax credit (*Crédit d'Impôt Recherche*), or CIR. The CIR is a French tax credit aimed at stimulating research and development. The CIR can be offset against French corporate income tax due and the portion in excess (if any) may be refunded at the end of a three fiscal-year period (or, sooner, for smaller companies such as ours). The CIR receivable of €7.2 million as of December 31, 2016, is calculated based on our claimed amount of eligible research and development expenditures in France. The French tax authority with the assistance of the Research and Technology Ministry may audit each research and development program in respect of which a CIR benefit has been claimed and assess whether such program qualifies in its view for the CIR benefit. The French tax authorities may challenge our eligibility to, or our calculation of certain tax reductions and/or deductions in respect of our research and development activities and, should the French tax authorities be successful, we may be liable for additional corporate income tax, and penalties and interest related thereto, or we may not obtain the refunds for which we have applied, which could have a significant impact on our results of operations and future cash flows. Furthermore, if the French Parliament decides to eliminate, or reduce the scope or the rate of, the CIR benefit, either of which it could decide to do at any time, our results of operations could be adversely affected.

We may be exposed to significant foreign exchange risk, which may adversely affect our financial condition, results of operations and cash flows.

We incur portions of our expenses and may in the future derive revenues in currencies other than the euro, in particular, the U.S. dollar. As a result, we are exposed to foreign currency exchange risk as our results of operations and cash flows are subject to fluctuations in foreign currency exchange rates. While we are engaged in hedging transactions to minimize the impact of

uncertainty in future exchange rates on cash flows, we may not hedge all of our foreign currency exchange rate risk. In addition, hedging transactions carry their own risks and costs, including the possibility of a default by the counterpart to the hedge transaction. We cannot predict the impact of foreign currency fluctuations, and foreign currency fluctuations in the future may adversely affect our financial condition, results of operations and cash flows.

We may use hazardous chemicals and biological materials in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment, manufacture and disposal of hazardous materials and wastes. Our research and development processes may involve the controlled use of hazardous materials, including chemicals and biological materials. We cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. We may be sued for any injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed any insurance coverage and our total assets. Federal, state, local or foreign laws and regulations govern the use, manufacture, storage, handling and disposal of these hazardous materials and specified waste products, as well as the discharge of pollutants into the environment and human health and safety matters. Compliance with environmental laws and regulations may be expensive and may impair our research and development efforts. If we fail to comply with these requirements, we could incur delays, substantial costs, including civil or criminal fines and penalties, clean-up costs or capital expenditures for control equipment or operational changes necessary to achieve and maintain compliance. In addition, we cannot predict the impact on our business of new or amended environmental laws or regulations or any changes in the way existing and future laws and regulations are interpreted and enforced. These current or future laws and regulations may impair our research, development or production efforts.

Our internal computer systems, or those of our third-party contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

Despite the implementation of security measures, our internal computer systems and those of our third-party contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we do not believe that we have experienced any such system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs. For example, the loss of clinical trial data for our product candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed.

We may acquire businesses or products, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions.

Our current strategy does not involve plans to acquire companies or technologies facilitating or enabling us to access to new medicines, new technologies, new research projects, or new geographical areas, or enabling us to express synergies with our existing operations. However, if such acquisitions were to become necessary or attractive in the future, we may not be able to identify appropriate targets or make acquisitions under satisfactory conditions, in particular, satisfactory price conditions. In addition, we may be unable to obtain the financing for these acquisitions under favorable conditions, and could be led to finance these acquisitions using cash that could be allocated to other purposes in the context of existing operations. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction, which could have a material adverse effect on our business, financial conditions, earnings and prospects.

Risks Related to Ownership of Our Ordinary Shares and ADSs

We believe we were a "passive foreign investment company," or PFIC, for U.S. federal income tax purposes for 2016, and expect to continue to be a PFIC for the current taxable year, and potentially future taxable years, which could result in adverse U.S. federal income tax consequences to U.S. investors.

A non-U.S. corporation will be considered a PFIC for any taxable year if either (1) at least 75% of its gross income for such year is passive income or (2) at least 50% of the value of its assets (based on an average of the quarterly values of the assets during such year) is attributable to assets that produce or are held for the production of passive income. Based on the value and composition of our assets, although not free from doubt, we believe that we were a PFIC for U.S. federal income tax purposes for the 2016 taxable year and we expect to continue to be a PFIC for the current taxable year and potentially future taxable years. The determination of PFIC status is fact-specific, and a separate determination must be made each taxable year as to whether we are a PFIC (after the close of each such taxable year). If we are a PFIC for any taxable year during which a U.S. holder (as defined in the section titled "Taxation—Material U.S. Federal Income Tax Considerations" in this Annual Report) holds ADSs, the U.S. holder may be subject to adverse tax consequences, including (1) the treatment of all or a portion of any gain on disposition as ordinary income, (2) the application of an interest charge with respect to such gain and certain dividends and (3) compliance with certain reporting requirements. Each U.S. holder is strongly urged to consult its tax advisor regarding these issues and any available elections to mitigate such tax consequences. See the section titled "Taxation—Material U.S. Federal Income Tax Considerations" in this Annual Report.

The market price for our ADSs may be volatile or may decline regardless of our operating performance.

The trading price of the ADSs has fluctuated, and is likely to continue to fluctuate, substantially. The trading price of our ADSs depends on a number of factors, including those described in this "Risk Factors" section, many of which are beyond our control and may not be related to our operating performance.

Since the ADSs were sold in our initial public offering in March 2015 at a price of $41.50 per share, the price per ADS has ranged as low as $16.09 and as high as $50.00 through March 22, 2017. The market price of the ADSs may fluctuate significant in response to numerous factors, many of which are beyond our control, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- our failure to develop and commercialize our product candidates;
- adverse results of delays in our or any of our competitors' pre-clinical studies or clinical trials;
- actual or anticipated changes in our growth rate relative to our competitors;
- competition from existing products or new products that may emerge;
- announcements by us, our collaborators or our competitors of significant acquisitions, strategic partnerships, joint ventures, strategic alliances, or capital commitments;
- adverse regulatory decisions, including failure to receive regulatory approval for any of our product candidates;
- the termination of a strategic alliance or the inability to establish additional strategic alliances;
- unanticipated serious safety concerns related to the use of any of our product candidates;
- failure to meet or exceed financial estimates and projections of the investment community or that we provide to the public;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- inconsistent trading volume levels of our ADSs;
- price and volume fluctuations in trading of our ordinary shares on the Alternext market of the Euronext in Paris;
- additions or departures of key management or scientific personnel;
- disputes or other developments related to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;
- our inability to obtain reimbursement by commercial third-party payors and government payors and any announcements relating to coverage policies or reimbursement levels;
- announcement or expectation of additional debt or equity financing efforts;

- sales of our ordinary shares or ADSs by us, our insiders or our other shareholders; and
- general economic and market conditions.

These and other market and industry factors may cause the market price and demand for our ADSs to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent holders from readily selling their ADSs and may otherwise negatively affect the liquidity of our capital shares. In addition, the stock market in general, and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies.

Share ownership is concentrated in the hands of our principal shareholders and management, who will continue to be able to exercise a direct or indirect controlling influence on us.

Our executive officers, directors, current 5% or greater shareholders and affiliated entities beneficially own approximately 45.06% of our ordinary shares outstanding (including those underlying our ADSs) as of February 28, 2017. As a result, these shareholders, acting together, have significant influence over all matters that require approval by our shareholders, including the election of directors and approval of significant corporate transactions. Corporate action might be taken even if other shareholders oppose them. This concentration of ownership might also have the effect of delaying or preventing a change of control of our company that other shareholders may view as beneficial.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, the price of our ADSs and trading volume could decline.

The trading market for our ADSs depends in part on the research and reports that securities or industry analysts publish about us or our business. If few or no securities or industry analysts cover us, the trading price for our ADSs would be negatively impacted. If one or more of the analysts who covers us downgrades our ADSs or publishes incorrect or unfavorable research about our business, the price of our ADSs would likely decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, or downgrades our ADSs, could also cause the price of our ADSs or trading volume to decline.

We do not currently intend to pay dividends on our securities. In addition, French law may limit the amount of dividends we are able to distribute.

We have never declared or paid any cash dividends on our share capital and do not currently intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, holders of our ordinary shares and ADSs are not likely to receive any dividends for the foreseeable future and any increase in value will depend solely upon any future appreciation. Consequently, holders of our equity securities may need to sell all or part of their holdings after price appreciation, which may never occur, as the only way to realize any future gains.

Further, under French law, the determination of whether we have been sufficiently profitable to pay dividends is made on the basis of our statutory financial statements prepared and presented in accordance with French generally accepted accounting principles called *"Plan Comptable Général"* defined by the regulation 99-03 from the Committee of the French Accountancy Regulation. In addition, payment of dividends may subject us to additional taxes under French law. Please see the section of this Annual Report titled "Memorandum and Articles of Association" for further details on the limitations on our ability to declare and pay dividends and the taxes that may become payable by us if we elect to pay a dividend. Therefore, we may be more restricted in our ability to declare dividends than companies not based in France.

In addition, exchange rate fluctuations may affect the amount of euros that we are able to distribute, and the amount in U.S. dollars that our shareholders receive upon the payment of cash dividends or other distributions we declare and pay in euros, if any. These factors could harm the value of our equity securities, and, in turn, the U.S. dollar proceeds that holders receive from the sale of ADSs.

Future sales of ordinary shares or ADSs by existing shareholders could depress the market price of the ADSs.

If our existing shareholders sell, or indicate an intent to sell, substantial amounts of ordinary shares or ADSs in the public market, the trading price of our ordinary shares and/or ADSs could decline significantly. In addition, the sale of these securities could impair our ability to raise capital through the sale of additional securities. As of February 28, 2017, we had 27,264,624 outstanding ordinary shares (excluding those underlying ADSs). As of February 28, 2017, approximately 8,261,560 of our outstanding ordinary shares (excluding those underlying ADSs) are held by directors, executive officers and other affiliates and continue to be subject to resale limitations under Rule 144 under the Securities Act. In addition, as of February 28, 2017, options and warrants to purchase an aggregate of 9,924,108 ordinary shares issued under our equity incentive plans were exercisable, subject to compliance with Rule 144 under the Securities Act in the case of our affiliates.

If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our ordinary shares and/or our ADSs could decline substantially.

Our By-laws and French corporate law contain provisions that may delay or discourage a takeover attempt.

Provisions contained in our By-laws and the corporate laws of France, the country in which we are incorporated, could make it more difficult for a third-party to acquire us, even if doing so might be beneficial to our shareholders. In addition, provisions of our By-laws impose various procedural and other requirements, which could make it more difficult for shareholders to effect certain corporate actions. These provisions include the following:

- under French law, a non-resident of France may have to file an administrative notice with French authorities in connection with a direct or indirect investment in us, as defined by administrative rulings; see the section of this Annual Report titled "Memorandum and Articles of Association";
- a merger (i.e., in a French law context, a share for share exchange following which our company would be dissolved without being liquidated into the acquiring entity and our shareholders would become shareholders of the acquiring entity) of our company into a company incorporated in the EU would require the approval of our board of directors as well as a two-thirds majority of the votes held by the shareholders present, represented by proxy or voting by mail at the relevant meeting;
- a merger of our company into a company incorporated outside of the EU would require the unanimous approval of our shareholders;
- under French law, a cash merger is treated as a share purchase and would require the consent of each participating shareholder;
- our shareholders have granted and may grant in the future our board of directors broad authorizations to increase our share capital or to issue additional ordinary shares or other securities (for example, warrants) to our shareholders, the public or qualified investors, including as a possible defense following the launching of a tender offer for our shares;
- our shareholders have preferential subscription rights proportionally to their shareholding in our company on the issuance by us of any additional securities as part of a cash capital increase or a capital increase by way of debt set-off. Such rights may only be waived by the extraordinary general meeting (by a two-thirds majority vote) of our shareholders or on an individual basis by each shareholder;
- our board of directors has the right to appoint directors to fill a vacancy created by the resignation or death of a director, subject to the approval by the shareholders of such appointment at the next shareholders' meeting, which prevents shareholders from having the sole right to fill vacancies on our board of directors;
- our board of directors can only be convened by our chairman or our managing director, if any, or, when no board meeting has been held for more than two consecutive months, by directors representing at least one third of the total number of directors;
- our board of directors meetings can only be regularly held if at least half of the directors attend either physically or by way of videoconference or teleconference enabling the directors' identification and ensuring their effective participation in the board's decisions;
- our shares take the form of bearer securities or registered securities, if applicable legislation so permits, according to the shareholder's choice. Issued shares are registered in individual accounts opened by us or any authorized intermediary (depending on the form of such shares), in the name of each shareholder and kept according to the terms and conditions laid down by the legal and regulatory provisions;
- approval of at least a majority of the votes held by shareholders present, represented by a proxy, or voting by mail at the relevant ordinary shareholders' general meeting is required to remove directors with or without cause;
- advance notice is required for nominations to the board of directors or for proposing matters to be acted upon at a shareholders' meeting, except that a vote to remove and replace a director can be proposed at any shareholders' meeting without notice;
- transfers of shares shall comply with applicable insider trading rules;
- the crossing of certain ownership thresholds has to be disclosed and can impose certain obligations; see the section of this Annual Report titled "Item 10.B—Memorandum and Articles of Association;" and
- pursuant to French law, the sections of the By-laws relating to the number of directors and election and removal of a director from office may only be modified by a resolution adopted by a two-thirds majority vote of our shareholders present, represented by a proxy or voting by mail at the meeting.

Holders of our ADSs may not be able to exercise their right to vote the ordinary shares underlying such ADSs.

Holders of ADSs may exercise voting rights with respect to the ordinary shares represented by the ADSs only in accordance with the provisions of the deposit agreement. The deposit agreement provides that, upon receipt of notice of any meeting of holders of our ordinary shares, the depositary will fix a record date for the determination of ADS holders who shall be entitled to give instructions for the exercise of voting rights. Upon timely receipt of notice from us, if we so request, the depositary shall distribute to the holders as of the record date (1) the notice of the meeting or solicitation of consent or proxy sent by us and (2) a statement as to the manner in which instructions may be given by the holders.

Holders of ADSs may instruct the depositary of the ADSs to vote the ordinary shares underlying such ADSs. Otherwise, holders of our ADSs will not be able to exercise their right to vote, unless they withdraw the ordinary shares underlying such ADSs. However, holders of our ADSs may not know about the meeting far enough in advance to withdraw those ordinary shares. If we ask for instructions, the depositary, upon timely notice from us, will notify holders of our ADSs of the upcoming vote and arrange to deliver our voting materials to such holders. We cannot guarantee that holders of our ADSs will receive the voting materials in time to ensure that they can instruct the depositary to vote such ordinary shares or to withdraw such ordinary shares so as to vote them directly. If the depositary does not receive timely voting instructions from holders of our ADSs, it may give a proxy to a person designated by us to vote the ordinary shares underlying such ADSs in accordance with the recommendation of our board of directors. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for the manner of carrying out voting instructions. This means that holders of our ADSs may not be able to exercise their right to vote, and there may be nothing such holders can do if the ordinary shares underlying such ADSs are not voted as requested.

The right of holders of our ADSs to participate in any future preferential subscription rights or to elect to receive dividends in shares may be limited, which may cause dilution to holders of ADSs.

Under French Law, if we issue additional securities for cash, current shareholders will have preferential subscription rights for these securities proportionally to their shareholding in our company unless they waive those rights at an extraordinary meeting of our shareholders (by a two-thirds majority vote) or individually by each shareholder. However, our ADS holders in the United States will not be entitled to exercise or sell such rights unless we register the rights and the securities to which the rights relate under the Securities Act or an exemption from the registration requirements is available. In addition, the deposit agreement for our ADSs provides that the depositary will not make rights available to holders of our ADSs unless the distribution to ADS holders of both the rights and any related securities are either registered under the Securities Act or exempted from registration under the Securities Act. Further, if we offer holders of our ordinary shares the option to receive dividends in either cash or shares, under the deposit agreement the depositary may require satisfactory assurances from us that extending the offer to holders of ADSs does not require registration of any securities under the Securities Act before making the option available to holders of ADSs. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. Accordingly, ADS holders may be unable to participate in our rights offerings or to elect to receive dividends in shares and may experience dilution in their holdings. In addition, if the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case holders of our ADSs will receive no value for these rights.

Holders of our ADSs may be subject to limitations on the transfer of such ADSs and the withdrawal of the underlying ordinary shares.

ADSs are transferable on the books of the depositary. However, the depositary may close its books at any time or from time to time when it deems expedient in connection with the performance of its duties. The depositary may refuse to deliver, transfer or register transfers of ADSs generally when our books or the books of the depositary are closed, or at any time if we or the depositary think it is advisable to do so because of any requirement of law, government or governmental body, or under any provision of the deposit agreement, or for any other reason subject to an ADS holders' right to cancel such ADSs and withdraw the underlying ordinary shares. Temporary delays in the cancellation of such ADSs and withdrawal of the underlying ordinary shares may arise because the depositary has closed its transfer books or we have closed our transfer books, the transfer of ordinary shares is blocked to permit voting at a shareholders' meeting or we are paying a dividend on our ordinary shares. In addition, holders of our ADSs may not be able to cancel such ADSs and withdraw the underlying ordinary shares when such holders owe money for fees, taxes and similar charges and when it is necessary to prohibit withdrawals in order to comply with any laws or governmental regulations that apply to ADSs or to the withdrawal of ordinary shares or other deposited securities.

As a foreign private issuer, we are exempt from a number of rules under the U.S. securities laws and are permitted to file less information with the SEC than a U.S. company. This may limit the information available to holders of ADSs.

We are a "foreign private issuer," as defined in the SEC's rules and regulations and, consequently, we are not subject to all of the disclosure requirements applicable to public companies organized within the United States. For example, we are exempt from certain rules under the Exchange Act that regulate disclosure obligations and procedural requirements related to the solicitation of proxies, consents or authorizations applicable to a security registered under the Exchange Act, including the U.S. proxy rules under Section 14 of the Exchange Act. In addition, our officers and directors are exempt from the reporting and "short-swing" profit recovery provisions of Section 16 of the Exchange Act and related rules with respect to their purchases and sales of our securities. Moreover, while we currently make annual and quarterly filings with the SEC, we are not required to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. domestic public companies and are not required to file quarterly reports on Form 10-Q or current reports on Form 8-K under the Exchange Act. Accordingly, there may be less publicly available information concerning our company than there would be if we were a U.S. domestic issuer.

As a foreign private issuer, we follow certain home country practices in relation to corporate governance matters that differ significantly from Nasdaq corporate governance standards. These practices may afford less protection to shareholders than they would enjoy if we complied fully with Nasdaq's corporate governance standards.

As a foreign private issuer listed on the Nasdaq Global Market, we are subject to corporate governance standards. However, Nasdaq's rules permit a foreign private issuer like us to follow the corporate governance practices of its home country. Certain corporate governance practices in France, which is our home country, may differ significantly from corporate governance standards of the Nasdaq. For example, neither the corporate laws of France nor our By-laws require a majority of our directors to be independent and our independent directors are not required to hold regularly scheduled meetings at which only independent directors are present. In addition, home country practice in France does not require us to maintain a nominating and corporate governance committee or to maintain a compensation committee composed entirely of independent directors. Currently, we follow home country practice in certain key respects. Therefore, our shareholders may be afforded less protection than they otherwise would have under corporate governance listing standards applicable to U.S. domestic issuers. A discussion of our corporate governance practices is set forth in the section titled "Management—Corporate Governance Practices."

We may lose our foreign private issuer status in the future, which could result in significant additional cost and expense.

While we currently qualify as a foreign private issuer, the determination of foreign private issuer status is made annually on the last business day of our most recently completed second fiscal quarter and, accordingly, the next determination will be made with respect to us on June 30, 2017.

In the future, we would lose our foreign private issuer status if we to fail to meet the requirements necessary to maintain our foreign private issuer status as of the relevant determination date. For example, if more than 50% of our securities are held by U.S. residents and more than 50% of our executive officers or members of our board of directors are residents or citizens of the United States, we could lose our foreign private issuer status.

The regulatory and compliance costs to us under U.S. securities laws as a U.S. domestic public company would be significantly more than costs we currently incur as a foreign private issuer. If we lost our foreign private issuer status, we would be required to file periodic reports on Form 10-Q and current reports on Form 8-K, to file periodic reports and registration statements on U.S. domestic issuer forms with the SEC, which are more detailed and extensive in certain respects than the forms available to a foreign private issuer. We would be required under current SEC rules to prepare our financial statements in accordance with U.S. GAAP, rather than IFRS, in U.S. dollars rather than euros. Such conversion of our financial statements to U.S. GAAP would involve significant time and cost. In addition, we would lose our ability to rely upon exemptions from certain corporate governance requirements of the Nasdaq that are available to foreign private issuers, such as the ones described above, and we would be required to modify certain of our policies to comply with corporate governance practices associated with U.S. domestic issuers. Moreover, we would lose our ability to rely upon exemptions from procedural requirements related to the solicitation of proxies.

It may be difficult to enforce civil liabilities against our company and directors and senior management and the experts named in this Annual Report.

Certain members of our board of directors and senior management and those of our subsidiaries, are non-residents of the United States, and all or a substantial portion of our assets and the assets of such persons are located outside the United States. As a result, it may not be possible to serve process on such persons or us in the United States or to enforce judgments obtained in U.S. courts against them or us based on civil liability provisions of the securities laws of the United States. Additionally, it may be

difficult to assert U.S. securities law claims in actions originally instituted outside of the United States. Foreign courts may refuse to hear a U.S. securities law claim because foreign courts may not be the most appropriate forums in which to bring such a claim. Even if a foreign court agrees to hear a claim, it may determine that the law of the jurisdiction in which the foreign court resides, and not U.S. law, is applicable to the claim. Further, if U.S. law is found to be applicable, the content of applicable U.S. law must be proved as a fact, which can be a time-consuming and costly process, and certain matters of procedure would still be governed by the law of the jurisdiction in which the foreign court resides. In particular, there is some doubt as to whether French courts would recognize and enforce certain civil liabilities under U.S. securities laws in original actions or judgments of U.S. courts based upon these civil liability provisions. In addition, awards of punitive damages in actions brought in the United States or elsewhere may be unenforceable in France. An award for monetary damages under the U.S. securities laws would be considered punitive if it does not seek to compensate the claimant for loss or damage suffered but is intended to punish the defendant. French law provides that a shareholder, or a group of shareholders, may initiate a legal action to seek indemnification from the directors of a corporation in the corporation's interest if it fails to bring such legal action itself. If so, any damages awarded by the court are paid to the corporation and any legal fees relating to such action are borne by the relevant shareholder or the group of shareholders.

The enforceability of any judgment in France will depend on the particular facts of the case as well as the laws and treaties in effect at the time. The United States and France do not currently have a treaty providing for recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters.

Provisions in our collaboration agreement with Servier may prevent or delay a change in control.

Our collaboration agreement with Servier provides that if any third party begins to control us, directly or indirectly, by any means, or in the event that we engage in a change of control transaction, including, but not limited to, the sale of all or substantially all of our assets or all or substantially all of our assets that are material to the performance of our obligations under the collaboration agreement, then Servier has the right to buy-out our interest in the pre-candidate products, product candidates, and products as described under the collaboration agreement. We refer to this right to acquire such interest as the buy-out. In the event we fail to agree with Servier on the amount of payment for our interest in the pre-candidate products, product candidates or products within twenty days following Servier's provision of a buy-out notice, then the buy-out payment would be determined by-third party valuators.

The buy-out may have the effect of delaying or preventing a change in control transaction involving us, or may reduce the number of companies interested in acquiring us. If Servier were to exercise the buy-out, it would gain exclusive development and marketing rights to the pre-candidate products, product candidates and products developed under the collaboration agreement. Were this to happen, our successor would not receive milestone payments or royalty payments on net sales of any of the products sold to Servier in connection with the buy-out. These provisions could have the effect of delaying or preventing a change in control transaction involving Cellectis, or could reduce the number of companies interested in acquiring us.

The rights of shareholders in companies subject to French corporate law differ in material respects from the rights of shareholders of corporations incorporated in the United States.

We are a French company with limited liability. Our corporate affairs are governed by our By-laws and by the laws governing companies incorporated in France. The rights of shareholders and the responsibilities of members of our board of directors are in many ways different from the rights and obligations of shareholders in companies governed by the laws of U.S. jurisdictions. For example, in the performance of its duties, our board of directors is required by French law to consider the interests of our company, its shareholders, its employees and other stakeholders, rather than solely our shareholders and/or creditors. It is possible that some of these parties will have interests that are different from, or in addition to, the interests of our shareholders. See the sections of this Annual Report titled "Memorandum and Articles of Association" and "Corporate Governance."

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Our legal and commercial name is Cellectis S.A. We were incorporated as a *société anonyme*, or S.A., under the laws of the French Republic on January 4, 2000 for a period of 99 years. We are registered at the Paris Registre du Commerce et des Sociétés under the number 428 859 052. Our principal executive offices are located at 8, rue de la Croix Jarry, 75013 Paris, France, and our telephone number is +33 1 81 69 16 00. Our agent for service of process in the United States is Puglisi & Associates. We also maintain a website at www.cellectis.com. The reference to our website is an inactive textual reference only and the information contained in, or that can be accessed through, our website is not a part of this Annual Report.

Our actual capital expenditures for the years ended December 31, 2014, 2015 and 2016 amounted to €0.4 million, €4.0 million and €12.7 million, respectively. These capital expenditures primarily consisted of the acquisitions of industrial and laboratory equipment and fittings required to conduct our research programs. We expect our capital expenditures to increase in absolute terms in the near term as we continue to advance our research and development programs and grow our operations. We anticipate our capital expenditure in 2017 to be financed from our cash and cash equivalents on hand. Primarily, these capital expenditures will be made both in France and in the United States, where our research and development facilities are currently located.

On January 21, 2015, we signed a lease for an administrative and research facility in New York, New York to enhance our presence in the United States. This facility, which includes large state-of-the-art research laboratories, opened on April 8, 2015, and supports the development of our CAR-T pipeline. In March 2016, we entered into a lease for a 26,928 square-foot space in Montvale, New Jersey. In March 2016, Calyxt acquired a 10-acres parcel in Roseville (MN), and a headhouse and a greenhouse were built and they have been in operations since September 2016.

B. Business Overview

We are a pioneering gene-editing company, employing our core proprietary technologies to develop best-in-class products in the emerging field of immuno-oncology. Our product candidates, based on gene-edited T-cells that express chimeric antigen receptors, or CARs, seek to harness the power of the immune system to target and eradicate cancer cells. We believe that CAR-based immunotherapy is one of the most promising areas of cancer research, representing a new paradigm for cancer treatment. We are designing next-generation immunotherapies that are based on gene-edited CAR T-cells. Our gene-editing technologies allow us to create allogeneic CAR T-cells, meaning they are derived from healthy donors rather than the patients themselves. We believe that the production of allogeneic CAR T-cells will allow us to develop cost-effective, off-the-shelf products that are capable of being cryopreserved, stored and distributed worldwide. Our gene-editing expertise also enables us to develop product candidates that feature additional safety and efficacy attributes, including control properties designed to prevent them from attacking healthy tissues, to enable them to tolerate standard oncology treatments, and to equip them to resist mechanisms that inhibit immune-system activity. In addition to our focus on immuno-oncology, we are exploring the use of our gene-editing technologies in other therapeutic applications, as well as to develop healthier food products for a growing population.

Cancer is the second-leading cause of death in the United States and accounts for one in four deaths. Immuno-oncology seeks to harness the power of the body's immune system to target and kill cancer. A key to this effort is a type of white blood cell known as the T-cell, which plays an important role in identifying and killing cancer cells. Unfortunately, cancer cells often develop mechanisms to evade the immune system. CARs, which are engineered receptors that can be expressed on the surface of the T-cell, provide the T-cell with a specific targeting mechanism, thereby enhancing its ability to seek, identify, interact with and destroy tumor cells bearing a selected antigen. Research and development of CAR T-cell immunotherapies currently focuses on two approaches: autologous and allogeneic therapies. Autologous CAR T-cell immunotherapies modify a patient's own T-cells to target specific antigens that are located on cancer cells. This type of therapy requires an individualized immunotherapy product for each patient and is currently being tested in clinical trials by several academic institutions, biotechnology and pharmaceutical companies. In contrast, an allogeneic CAR T-cell immunotherapy is an approach by which a cancer patient is infused with a mass-produced, off-the-shelf immunotherapy product derived from a healthy T-cell donor. Our initial focus is on developing allogeneic treatments, and we believe that we are the leading company pursuing this approach.

Gene editing is a type of genetic engineering in which DNA is inserted, deleted, repaired or replaced from a precise location in the genome. The most fundamental challenge of gene editing is the need to specifically and efficiently target a precise DNA sequence within a gene. Our proprietary nuclease-based gene-editing technologies, combined with 16 years of genome engineering experience, allow us to edit any gene with highly precise insertion, deletion, repair and replacement of DNA sequences. Our nucleases, including a particular class of proteins derived from transcription activator-like effectors act like DNA scissors to edit genes at precise target sites and allow us to design allogeneic CAR T-cells. Our patented PulseAgile electroporation technology allows us to efficiently deliver our clinical grade nucleases into human cells while preserving cell viability, making it particularly well-suited for a large-scale manufacturing process. We believe these technologies will enable our clinical grade drug therapeutic products to be manufactured, cryopreserved, stored, distributed broadly and infused into patients in an off-the-shelf approach.

We are developing products internally and through strategic alliances with Pfizer and Servier. Our strategic alliances include upfront and potential milestone payments to us of up to $3.9 billion and high single-digit royalties on future sales. We believe that our alliances with Pfizer and Servier validate our technology platform, our strong expertise in the allogeneic CAR T-cells field and the strength of our intellectual property portfolio.

In 2016, Servier commenced two Phase I clinical studies the United Kingdom for UCART19, one in adult Acute Lymphoblastic Leukemia (ALL), the CALM study, and one in pediatric ALL, the PALL study. We refer in this Annual Report to the CALM study and the PALL study, collectively, as the UCART19 Clinical Studies. In November 2015, when we exclusively licensed the rights to UCART19 to Servier, Servier also announced that it had granted Pfizer the exclusive rights for the development and the commercialization of UCART19 in United States. During a meeting at the National Institutes of Health's Recombinant DNA Advisory Committee (or "RAC") held on December 14, 2016, Servier and Pfizer presented early clinical data on UCART19 and the CALM protocol. In March 2017, Servier, in collaboration with Pfizer, announced the FDA approval to extend the Phase I of the CALM study in United States.

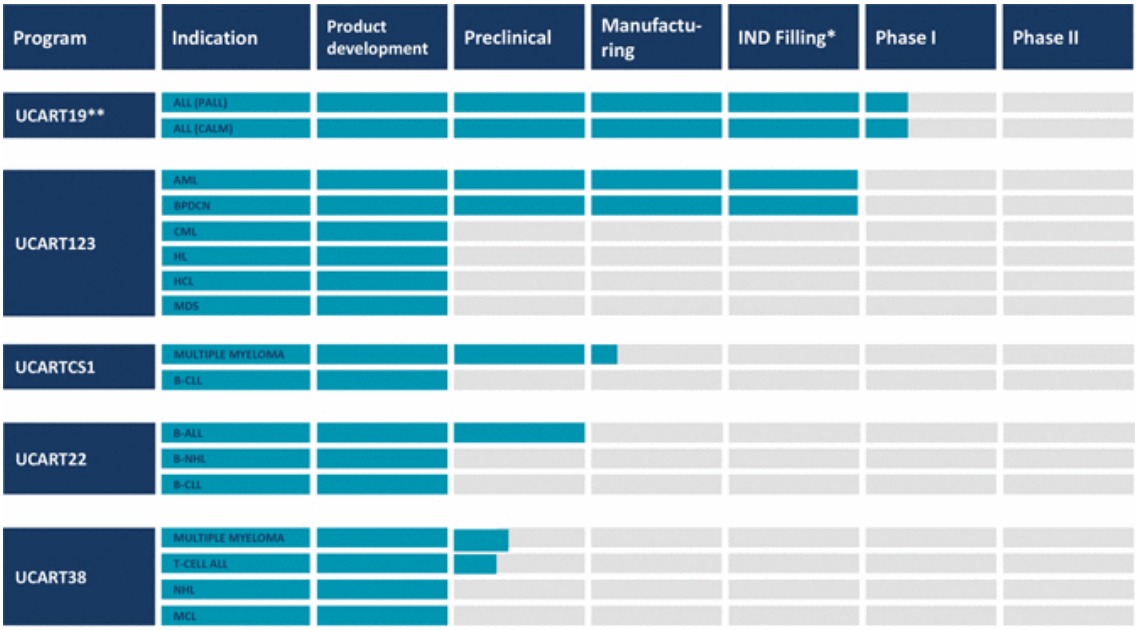
With respect to UCART123, we obtained the unanimous approval of the RAC on December 14, 2016 to start two proposed studies in the United States. In December 2016, we submitted an Investigational New Drug (IND) application for UCART123 with respect to two proposed Phase I studies to be conducted, one in Acute Myeloid Leukemia (AML) and one in Blastic Plasmacitoid Dendritic Cell Neoplasm (BPDCN). In February 2017, the FDA approved the IND. Subject to the successful negotiation of clinical trial agreements, we intend to have the Phase I clinical study in AML performed by Weill Cornell, and the Phase I clinical study in BPDCN performed by MD Anderson Cancer Center. We refer in this Annual Report to the AML study and the BPDCN study, collectively, as the UCART123 Clinical Studies.

Additionally, we are pursuing development of our eight other proprietary pre-clinical programs (UCARTCS1, UCART38, UCART22, and five other programs), and are jointly pursuing pre-clinical programs on twelve targets with Pfizer and four undisclosed targets with Servier. Our objective is to file, directly or indirectly, one Investigational New Drug, or IND, application (or foreign equivalent), per year.

Our vision is to leverage the potential of gene editing to deliver revolutionary products that address unmet medical needs, as well as to provide, through our fully-owned subsidiary, Calyxt, Inc., healthier food for a growing population across the world. Our initial focus is to apply our leadership in gene-editing technology to develop and commercialize best-in-class allogeneic CAR T-cell therapeutic products in the area of immuno-oncology.

Our Immuno-oncology Pipeline

Our lead immuno-oncology product candidates, which we refer to as UCARTs, or universal CARTs, are all allogeneic CAR T-cells engineered to be used for treating any patient with a particular cancer type. Each UCART product candidate targets a selected antigen expressed on tumor cells and bears specific engineered attributes, such as compatibility with specific medical regimens that cancer patients may undergo. UCART is the first therapeutic product line that we are developing using our gene-editing platform to address unmet medical needs in oncology. We are focusing our initial internal pipeline in the hematologic malignancies space, targeting diseases with high unmet needs such as acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), multiple myeloma (MM) and different types of lymphomas. In December 2016, we filed an IND for our lead product candidate, UCART123 in AML and BPDCN, and in February 2017, we received FDA approval to commence the UCART123 Clinical Studies. All of our other fully-controlled product candidates are currently in the pre-clinical proof-of-concept phase, and the following chart highlights some of these product candidates:



* or European equivalent
** UCART19 is exclusively licensed to Servier and under a joint clinical development agreement between Servier and Pfizer

Our wholly-controlled product candidates UCARTCS1, UCART38 and UCART22 are in various stages of early development. UCART123, UCARTCS1, UCART38 and UCART22 are engineered T-cell product candidates that bear CARs that seek to kill cells expressing targets CD123, CS1 (also known as SLAMF7), CD38 and CD22, respectively, which are found in other hematologic tumors, such as acute myeloid leukemia, or AML, and multiple myeloma, or MM, as well as acute lymphoblastic leukemia, or ALL.

Strategic Alliances

In addition to the development of our own portfolio of product candidates targeting tumor-associated antigens, we have pursued a strategy of forging strong pharmaceutical alliances. We believe that our approach to CAR T-cell development has been validated by our strategic alliances with Servier and Pfizer. Our strategic alliances include upfront and potential milestone payments to us of up to $3.9 billion and high single digit royalties on future sales.

Collaboration with Servier

In February 2014, we entered into a strategic collaboration agreement with Servier to develop and commercialize certain product candidates. Pursuant to the agreement, Servier made an upfront payment of €7.55 million ($8.2 million). In addition, the strategic alliance, as amended in November 2015, provides for aggregate additional payments of up to €887.0 million ($966.0 million), comprising payments upon the exercise of each option granted to Servier and payments upon the occurrence of certain specified development and commercial milestones. We are also eligible to receive tiered royalties ranging in the high single-digit percentages based on annual net sales of commercialized products. This agreement covers the development and the potential commercialization of the lead product candidate, UCART19, as well as other product candidates directed at four other targets. Under the terms of the agreement, we will be responsible for the research and development of certain product candidates through the end of their respective Phase I clinical trials. We granted Servier an exclusive option to obtain an exclusive, worldwide license on a product candidate-by-product candidate basis, with respect to each target selected by Servier and developed under the agreement, to further develop, manufacture and commercialize such product in the field of anti-tumor adoptive immunotherapy. Upon exercising each such option, Servier will assume responsibility for the further clinical development, manufacture and commercialization of the relevant product candidate. In November 2015, we entered into an amendment to our initial collaboration agreement with Servier, which allowed for an early exercise of Servier's option with respect to UCART19 and other product candidates. Pursuant to this amendment, Servier has exercised its option to acquire the exclusive worldwide rights to further develop and commercialize UCART19. In addition, Pfizer and Servier have announced that they have entered into an exclusive global license and collaboration agreement, under which Pfizer has obtained exclusive rights to develop and commercialize UCART19 in the United States.

Following approval by the MHRA, the UCART19 Clinical Studies sponsored by Servier commenced in the United Kingdom in June 2016.

The protocol for UCART19, titled *"Phase I open label, dose-escalation study to evaluate the safety, expansion and persistence of a single dose of UCART19 (allogeneic engineered T-cells expressing anti-CD19 chimeric antigen receptor), administered intravenously in patients with relapsed or refractory CD19 positive B-cell acute lymphoblastic leukemia (B-ALL)"* was presented at the RAC meeting held on December 14, 2016 for evaluation, and unanimously approved by the RAC. In March 2017, Servier, in collaboration with Pfizer, announced the FDA approval to extend the Phase I of the CALM clinical study in the United States.

Collaboration with Pfizer

In June 2014, we entered into a global strategic collaboration agreement with Pfizer pursuant to which we will collaborate to conduct discovery and pre-clinical development activities to generate CAR T-cells directed at targets selected by Pfizer or us in the field of oncology. Pursuant to the agreement, Pfizer made an upfront, non-refundable $80.0 million payment to us, concurrent with Pfizer's equity investment in our Company. In addition, the strategic alliance provides for up to $2.8 billion in potential clinical and commercial milestone payments. We are also eligible to receive tiered royalties ranging in the high single-digit percentages based on annual net sales of commercialized products. We may also receive funding for research and development costs associated with the Pfizer-selected targets and for four Cellectis-selected targets within the alliance. Pfizer has exclusive rights to pursue development and commercialization of products for a total of fifteen targets of their choice.

Our Strategy

Our strategy is to leverage the transformative potential of our unique gene-editing technologies and expertise through two product platforms: our cell engineering platform designed to deliver therapeutic products and our plant engineering platform designed to deliver healthier food to a growing population.

The key elements of our strategy are to:

- **Advance our additional UCART product candidates into clinical trials**. We have a deep pipeline of promising immunotherapy product candidates in various stages of development, which we plan to develop and advance into clinical investigations. Based upon pre-clinical results to date, we expect several of our product candidates to enter into clinical trials in the coming years. We plan to continue to leverage our cell-engineering platform to develop additional UCART product candidates and to expand our clinical pipeline of CAR T-cell product candidates in the coming years.
- **Leverage our existing and potential future alliances to advance our research and to bring products to market**. Our strategic alliances with Pfizer and Servier for the development of CAR T-cell applications in oncology provide us with funding for research and development, and may provide milestone payments and royalties on sales. We may enter into additional strategic alliances to facilitate our development and commercialization of CAR T-cell immunotherapy products.
- **Expand our product pipeline to other therapeutic indications with unmet medical needs**. We intend to continue using our gene-editing technologies in therapeutic applications beyond immuno-oncology, including the treatment of chronic infectious diseases, autoimmune diseases and allergic diseases.
- **Develop plant products for the multibillion dollar agricultural-biotechnology market through the use of our gene-editing platform**. We are applying our gene-editing technologies to create food products with consumer health benefits, adaptations for climate change or nutritional enhancements that address the needs of a growing population. By selecting and inactivating target genes in certain agricultural crops, we believe we can produce unique variants with consumer benefits. For example, we are developing a potato that could be stored safely in cold conditions and have completed the second year of field trials for this product, new soybean breeds with improved oil qualities and protein content, of which we have completed the third year of field trials and powdery mildew resistant wheat. We also intend to integrate additional crops into our product pipeline, including canola, corn and rice.

Immunotherapy: Turning the Immune System into "Smart Drugs"

The immune system has evolved to protect the body from invading pathogens or external harmful materials by identifying these foreign bodies through "non-self" antigens, which are molecular signatures that they carry and are foreign to the body. A central function of the immune system is to discriminate between "self," which is recognized through antigens normally present in the body and borne by cells, proteins, sugars or lipids, and "non-self", which is detected through abnormal or foreign antigens. Cancer cells thrive, in part, because they trick the immune system into treating them as self, even though they express abnormal antigens, and thus immune tolerance occurs when the immune system fails to recognize and attack tumors. Breaking immune tolerance is an important aspect of most immuno-oncology-based therapeutics because it enables the immune system to recognize and treat tumors as non-self and lead to tumor destruction.

The immune system recognizes non-self danger signals and responds to threats at a cellular level. The immune system may be conceptualized as comprising two arms. The first arm, known as the innate immune system, recognizes non-specific signals of infection or abnormalities as a first line of defense. The innate immune system is the initial response to an infection, and the response is the same every time regardless of prior exposure to the infectious agent. The second arm, known as the adaptive immune system, is composed of highly specialized cells and provides long-term specific recognition and protection from infectious agents and abnormal processes such as cancer. The adaptive immune response is further subdivided into antibody-based responses and cellular responses, which include T-cell-based immune responses. The most significant components of the cellular aspect of the adaptive immune response are T-cells, which are specialized cells that generally mature in the thymus. T-cells are involved in sensing and killing infected or abnormal cells, as well as coordinating the activation of other cells and mounting an immune response.

Although the immune system is designed to identify and destroy foreign or abnormal protein-bearing tumor cells, this process is often defective in cancer patients. Additionally, cancer cells employ a number of mechanisms to escape immune detection and attack to suppress the effect of the immune response.

Immunotherapy is a type of treatment that modifies, stimulates, or re-directs certain parts of the immune system to fight diseases, such as cancer. Immunotherapy works by stimulating a patient's own immune system or by turning its attacks towards harmful targets, such as cancer cells. Immunotherapy can also be pursued by giving patients engineered immune cells, such as CAR T-cells to target certain cells. Immunotherapy is playing an increasingly large role in treating cancer, chronic infectious diseases, autoimmune diseases and allergic diseases.

T-cells and T-cell Receptors (TCRs)

T-cells are a class of white blood cells that carry a specific TCR at their surface that allows them to recognize and kill other cells that express antigens foreign to the individual. Normal cells express a set of specific molecules, called human leukocyte antigen, or HLA, at their surface. HLA is associated with small fragments, or peptides of the proteins expressed or processed inside the cell. Abnormal or foreign proteins expressed in a cell (viruses, for example) can attach to HLAs at the cell's surface and be recognized by T-cells through these HLA-peptide complexes and identified as foreign antigens. This recognition triggers the activation of the T-cells, which destroy the foreign HLA-peptide complex-bearing cell, secrete specific cytokines attracting other immune-competent cells to their location, and start multiplying to establish a full immune response.

An activated T-cell can multiply tens of thousands of times, so long as there remains a presence of the foreign antigen in the body. Unlike antibodies that mainly diffuse passively through the body and its circulating fluids, T-cells actively leave blood vessels or lymphoid organs and travel through the tissues of the body where they can attack foreign antigens. Once the antigen is eliminated from the body, the T-cells run out of stimulation and die off, with only a fraction surviving as "memory T-cells," which can react promptly should the antigen reappear in the body.

There is a high variability of HLA molecules in the population. Therefore, if a cell is introduced into a person and originally comes from another individual that is not HLA-matched, it will bear, at its surface, HLA-peptide complexes that are recognized as foreign and will be killed by the T-cells of the recipient. This mechanism of graft rejection has been a major limitation to transplanting patients with allogeneic tissues. Reciprocally, if T-cells are grafted from one individual to another and start recognizing as foreign the normal HLA-peptide complexes at the surface of all tissues of the grafted individual, then they may attack and kill those healthy tissues, leading to Graft-versus-Host disease (GvHD), which can be very severe, and potentially fatal, if left untreated. GvHD has been a major limitation to the use of allogeneic T-cells when treating patients.

Cancerous cells express abnormal antigens and can be killed by T-cells. However, cancer may grow and spread to various organs when T-cells with cancer-specific receptors are in low numbers, of poor quality, or rendered inactive by suppressive mechanisms employed by tumor tissues. T-cells are a key armament when fighting cancers. They play a particularly significant role if they are tailored to target tumors, and even more so if their genes are edited to overcome tumor defenses, to make T-cells compatible with other anti-cancer drugs that can be combined with them, and to prevent GvHD, which would allow the use of allogeneic T-cells.

Chimeric Antigen Receptor (CARs)

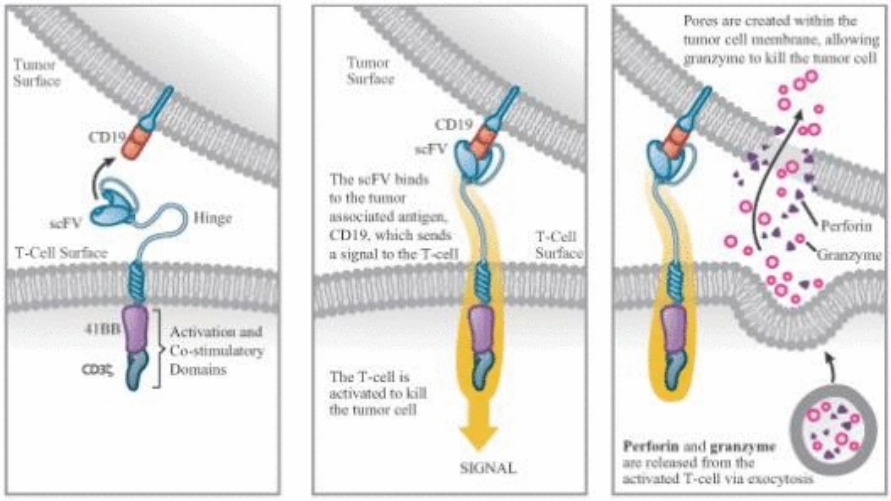
CARs are engineered molecules that, when present at the surface of T-cells, enable them to recognize specific proteins or antigens that are present on the surface of other cells. These receptors are typically used to graft the specificity of an antibody derived from a single cell, or a monoclonal antibody, onto a T-cell and provide it with a specific targeting mechanism to seek, identify, interact with and destroy the tumor cells bearing a selected antigen associated with that tumor also known as tumor-associated antigen, or TAA and tumor-specific antigens, or TSA. The expression of some genes, or combinations of genes, can be associated with certain classes of cancers. It is sometimes possible to identify TAAs that are expressed at various levels by tumor cells from a given cancer type. These TAAs may also be normally expressed by other tissues at different stages of development.

T-cells with CARs are referred to as CAR T-cells. Whereas natural T-cell receptors, or TCRs, only recognize antigens bound to an HLA molecule at a cell's surface, a CAR is able to directly recognize antigens that are present at the targeted cell's surface. It is believed that upon cell-to-cell contact between a CAR T-cell and an antigen-bearing targeted cell, antigen recognition by the CAR "activates" the CAR T-cell, triggering it to multiply, attack and kill its target through the release of "hole-forming" proteins, known as perforins, and "degradation enzymes," known as granzymes, that enter the targeted cell through the perforin-formed holes and carry out the killing. The activation of a T-cell through a CAR results in a target-associated "kill and amplify" chain reaction that eradicates the tumor.

CARs are constructed by assembling components, or domains, from different proteins, including:

- In the extracellular space, one or more target binding domains, coming from ligands, such as antibodies or receptors, that can recognize their targets on the outside of the T-cell;
- A hinge that helps position the target binding domains relative to their targets;
- Trans-membrane domains that anchor the CAR at the T-cell's surface relative to the T-cells; and
- A set of activating or silencing domains, which are located within the T-cell's interior, that deliver appropriate signals to the T-cells leading to T-cell activation or repression according to the T-cell environment. Such signals may induce tumor cell killing, cytokine secretion and CAR T-cell multiplication.

The following diagram shows the mechanism by which a CAR T-cell is believed to attack a tumor cell:



Recent immuno-oncology advancements have supported the potential to cure certain cancers by harnessing the body's immune system to fight cancer cells. For example:

- Interim results from a Phase II multicenter trial sponsored by Novartis in children and young adults with relapsed /refractory B-ALL infused with CAR based therapy were presented at the 58th ASH meeting in San Diego. Among 29 patients reaching 28 days of treatment, 83% achieved complete remission.
- KITE's ZUMA-1 interim results at three months, presented at the 58th ASH meeting in San Diego, showed 76 percent of patients (39 out of 51 patients) with Diffuse Large B-Cell Lymphoma (DLBCL) achieved objective response and 47 percent (24 out of 51 patients) complete remissions (CR). This represents a 6-fold higher CR rate in patients treated with CAR based therapy compared to historical outcomes. In addition, in patients with transformed follicular lymphoma (TFL) or primary mediastinal B-cell lymphoma (PMBCL), response rates were 91 percent (10 of 11 patients) with 73 percent (8 out of 11 patients) displaying complete remission.
- The Fred Hutchinson Cancer Research Center has published data for 30 adult patients with B-ALL treated with a CAR based therapy. Of these, 29 patients were evaluable for response. Following treatment, 27 out of 29 patients (93%) achieved MRD negative CR by flow cytometry and 25 out of 29 (86%) MRD negative CR by all methods.

Based on these and other advancements, immuno-oncology has become a new frontier for treatment, and we believe it is one of the most promising areas of development within oncology.

Limitations of Current Autologous Treatments

Many of the CAR T-cell immunotherapy treatments currently under development are created through an autologous approach in which the patient's own T-cells are engineered to fight cancer cells. Part of our scientific basis for pursuing allogeneic approaches rests in the recognized limitations of autologous approaches, including:

- Autologous treatments must be specifically designed for each patient due to significant patient-to-patient variability in the quality of the T-cell;
- Autologous treatments can bear high costs due to the necessity of designing a bespoke treatment for each patient and the effort consumed in modifying and growing each patient's T-cells; and
- At this time, autologous treatments cannot be mass produced, may involve significant production time, and require patients be treated at select advanced facilities.

Although some autologous approaches to CAR T-cell have recently demonstrated encouraging clinical data, we believe our allogeneic approach provides developmental benefits.

Our Gene-Editing Approach to Allogeneic CAR T-cell Therapy

The most fundamental challenge of genome engineering is the need to specifically and efficiently target a precise DNA sequence within a complex genome. Our founder and CEO, Dr. André Choulika, was one of the pioneers and first researchers in nuclease-based genome engineering in the early 1990s and has been integral in the development and advancement of gene-editing tools.

Our proprietary gene-editing platform relies on our capacity to custom design DNA-sequence specific cutting enzymes, or nucleases, for any chosen gene we need to modify and our capability to introduce such custom-made nucleases into the living cells we want to engineer. Our platform relies on precisely chosen protein families that can specifically recognize unique DNA sequences and can be tailored to target such sequences in any chosen gene or genetic region.

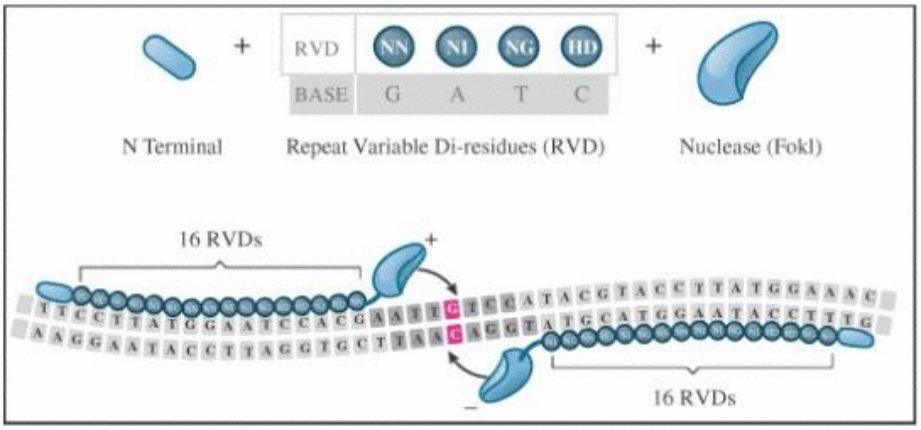
We are currently developing an allogeneic CAR T-cell therapy approach based on our technology platform that combines single or multi-chain CARs, TALEN and PulseAgile to address the opportunities for improvement discussed above. Our approach aims to deliver an off-the-shelf product with the following benefits:

- *Market Access*. Enable products to be shipped globally, thereby reducing deployment obstacles and providing accessibility to a broad patient population;
- *Cost-effectiveness*. Streamlined manufacturing process has the potential to reduce costs;
- *Novel Features*. Develop products with specific safety and control properties;
- *Compatibility*. Develop products taking into consideration the current standards of cancer care; and
- *Consistency*. Qualify and develop cancer products that are designed for optimal dosage, while reducing batch-to-batch variability.

TALEN—Proprietary Gene-editing Technology

The flagship nuclease structure we use for gene editing is based on a class of proteins derived from transcription activator-like effectors, or TALE. TALEN products are designed by fusing the DNA-cutting domain of a nuclease to TALE domains, which can be tailored to specifically recognize a unique DNA sequence. These fusion proteins serve as readily targetable "DNA scissors" for genome engineering applications that enable us to perform targeted genome modifications such as sequence insertion, deletion, repair and replacement in living cells.

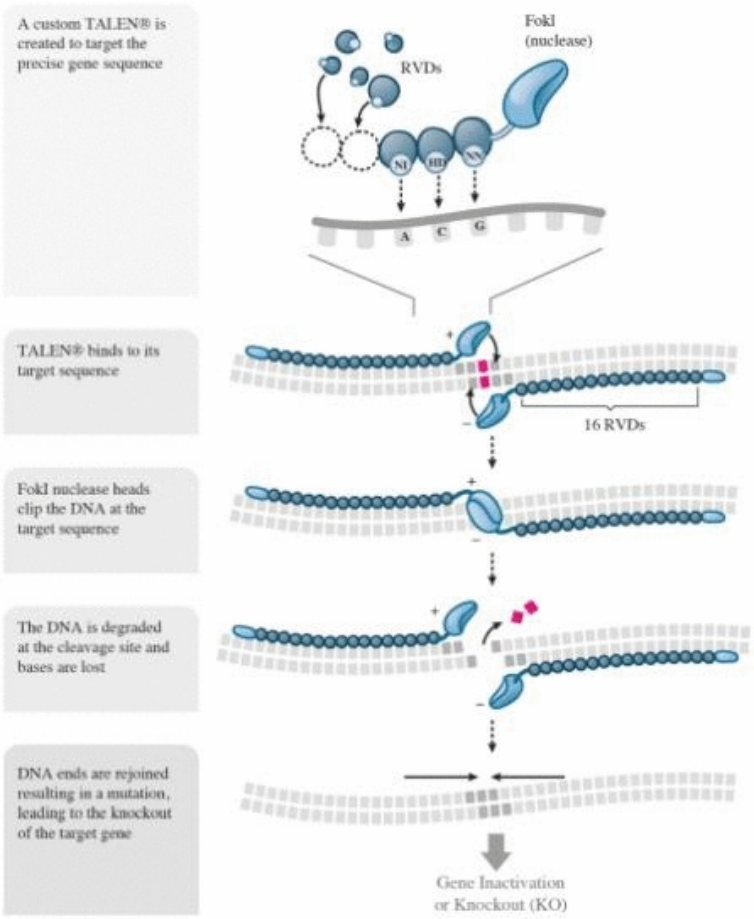
The following diagram shows the structure of a TALEN. The DNA binding domain of TALEN is composed of DNA binding units (repeat variable di-residues or RVDs) that each individually recognize a single base pair, and that are assembled to collectively recognize a DNA sequence. The specificity of this RVD single base pair recognition is mediated by two of the amino-acids in the RVD (NN, NI, NG, or HD), the RVDs that directly interact with the base of the DNA.



We believe the key benefits of TALEN technology are:

- *Precision*. It is possible to design a TALEN that will cleave at any selected region in any gene, giving us the ability to achieve the desired genetic outcome with any gene in any living species.
- *Specificity and Selectivity*. TALEN may be designed to limit its DNA cleavage to the desired sequence and to reduce the risk of cutting elsewhere in the genome. This parameter is essential, especially for therapeutic applications, because unwanted genomic modifications potentially could lead to harmful effects for the patient. In addition, gene editing requires only a transient presence of TALEN, thus preserving the integrity and functionality of the T-cell's genome.
- *Efficiency*. A large percentage of cells treated by the nuclease bear the desired genomic modification after treatment is completed. In our routine gene-editing processes, around 70% of the T-cells treated by TALEN to inactivate one gene copy bear the desired genomic modification. We believe TALEN's high efficiency will be important to the cost-effectiveness of a manufacturing process involving the generation of gene-edited T-cells.

The following diagram shows the mechanism by which TALEN inactivates, or knocks out, a gene:



We are able to assemble long arrays of modular domains with predictable specificity for a chosen sequence of DNA unique within a genome. When a TALEN is present, its TALE domains recognize its target DNA sequence and thereby direct the enzyme to the proper chromosomal location. Once bound to its target DNA sequence, the DNA cleaving-domain of the TALEN induces a DNA break at the targeted location to induce permanent DNA modifications. We believe TALEN stands out among nucleases as exceptionally precise, accurate and efficient to perform gene inactivation.

Other Types of Gene Editing Technologies

We have developed a strong expertise and capacity in meganuclease technologies, which involve enzymes capable of recognizing very large unique DNA sequences. In addition, using the flexibility of the TALE domain, we have developed new classes of custom-designed nucleases, such as compact TALEN and mega-TALE nucleases that combine meganucleases and TALEN technology. Compact-TALEN is built with a single TALE molecule fused to a fragment of a chosen meganuclease that carries limited DNA sequence recognition functionality but fully functional DNA-cleaving activity. These chimeric proteins are smaller in size than classical TALEN, which can facilitate their delivery to cells. In contrast, mega-TALEs use a full-size meganuclease to enhance their DNA sequence recognition capacities, while demonstrating enhanced precision. In addition, we have discovered a new class of nuclease that we named BurrH nucleases, also based on arrays of single DNA-base recognizing modular domains.

PulseAgile—Electroporation Technology

In order to perform gene editing, we use our proprietary PulseAgile electroporation technology to introduce nucleases inside the target T-cell where they can access the cell's DNA. Electroporation allows messenger RNA, or mRNA, molecules coding for the nuclease to enter into the cell, where it is translated into the nuclease protein that can cut into the cell's DNA. The mRNA molecules are rapidly degraded by the cell, which means that the nuclease is only expressed for a short time.

PulseAgile electroporation uses a unique electrical field wave-form that, in combination with a proprietary buffer solution, enables molecules, such as nucleases, to enter efficiently into the cell while maintaining a high percentage of viable cells. PulseAgile technology is particularly effective due to the shape of the electrical field that includes high voltage peaks, which are optimized to create transient holes in the cell membrane, followed by lower voltage pulses that help mRNA (for example TALEN-encoding mRNA) migrate into the cells. In addition, PulseAgile is optimized to preserve high cell viability and thus suited for large-scale manufacturing.

Next-Generation Products Based on Multi-chain CAR

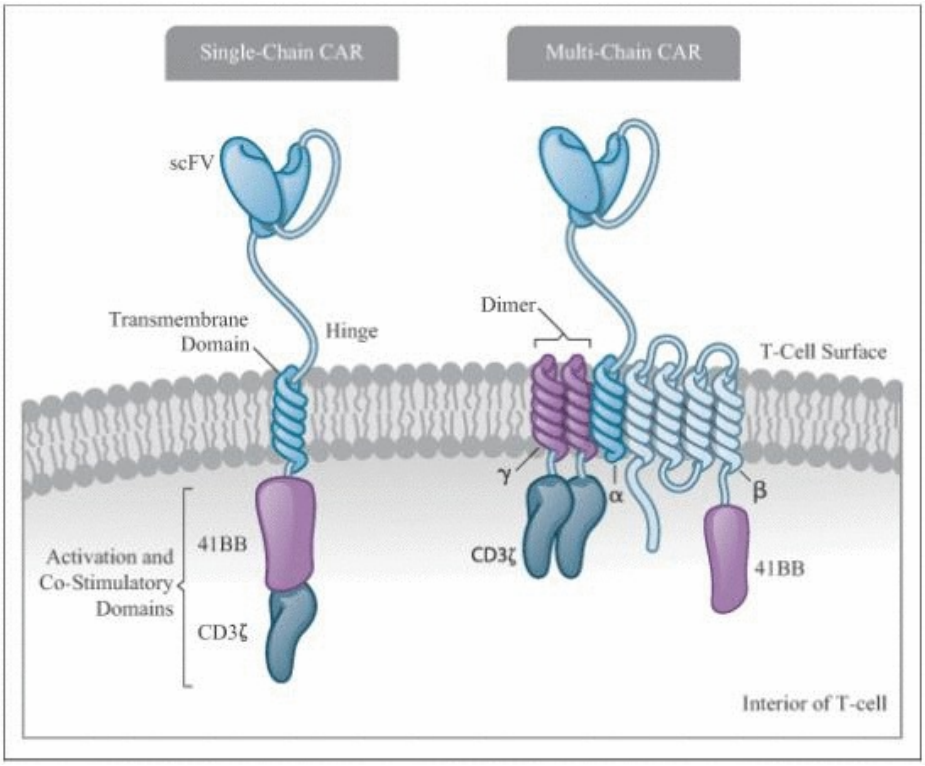
Historically, CAR components have been assembled into a linear CAR molecule, known as a "single-chain" CAR. We have developed another architecture, which we call "multi-chain" CAR, that is currently based on the structure of the high-affinity IgE receptor, which is normally absent in T-cells. The multi-chain CAR is composed of several membrane-bound proteins that naturally assemble at the cell's surface and, as described below, have several benefits.

CAR architectures generally utilize a single polypeptide chain, which requires multiple appending of domains to enable a configuration that provides both the T-cell activation and co-stimulation needed for optimal T-cell responses. Typically, the target-binding domain of a CAR consists of a single-chain variable fragment of an antibody comprising variable domains of large polypeptide subunits, or heavy chains, and small polypeptide subunits, or light chains, joined by a short linker peptide. This structure allows the expression of the CAR as a single-chain protein. One limitation of single-chain CAR architecture is the small number of features that it is able to add to a cell. When such protein domains are not located close to the transmembrane structure, they tend to be less stable or active, which limits the number of domains that can be added.

We have developed a novel multi-subunit CAR architecture that overcomes these structural issues and expands the functional possibilities that can be brought to a T-cell. Our multi-chain CAR is currently based on the architecture of a specific high affinity IgE receptor, that is normally absent from T-cells. This architecture offers the potential for inclusion of multiple intra-cellular signaling domains, optimally located at their natural distance from the membrane. In other words, our multi-chain CAR offers additional positions close to the cell membrane so that domains can be more flexibly located relative to the cell's transmembrane structure. This also facilitates the potential implementation of multiple recognition domains, possibly allowing the recognition of not only a single antigen, but also of patterns of multiple antigen expression. This novel multi-subunit architecture would allow the construction of CARs with both improved activity and specificity and thus with an expanded range of applications.

CARs, whether single or multi-chain, are means to redirect T-cell activity toward cells bearing selected antigens. Our platform allows us to design CARs and to optimize their design depending on where and how their target is expressed on the surface of cancer cells.

The following diagram shows the distinction between single-chain CARs and multi-chain CARs:



Nuclease Technology and T-cells: The Design Process

Our T-cell gene-editing process involves two engineering rounds:

Step 1: Gene Editing to add Genes, such as a CAR

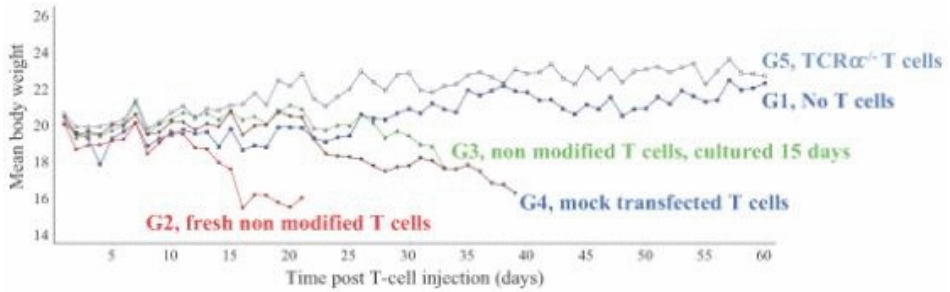
In the first round, genetic material is added to the T-cell's genome using a viral vector—a benign modified virus that cannot replicate autonomously but can efficiently deliver such genetic material into a cell with which it is in contact. In particular, we use replication-deficient viral vectors allowing targeted integration. The genetic material added includes a gene-coding for a CAR, which becomes a new receptor at the T-cell's surface that allows it to recognize and bind to a target molecule that is present at the surface of other cells. At this stage, we can also add additional genes to these cells that confer specific properties. For example, we add suicide genes, which code for proteins that can make T-cells susceptible to certain drugs and enable us to deplete our engineered T-cells at our discretion by administering a drug to the patient. This system can also be integrated within the CAR itself.

Step 2: Gene Editing to Inactivate Genes, such as the TCRα, PD-1, CD52

In the second round, we use our PulseAgile electroporation technology to introduce specific TALEN mRNA into the T-cells to inactivate a number of genes that are naturally present in the genome of these T-cells.

TCRs at the surface of T-cells allow them to recognize cells that express foreign, non-self, antigens (for example, cells infected by a virus or cells coming from another individual). Non-modified allogeneic T-cells bear functional TCRs and, if injected into a patient, can potentially recognize non-self on that patient's tissues and start to attack them. For this reason, all of our UCART product candidates undergo the inactivation of a gene coding for TCRα, a key component of the natural antigen receptor of T-cells, to suppress their alloreactivity. The engineered T-cells lack functional TCRs and are no longer capable of recognizing foreign antigens. As a result, when injected into a patient, the engineered T-cell would not recognize the tissues of the host patient as foreign and thus would avoid attacking the patient's tissues. This could avoid the GvHD that can sometimes be observed when allogeneic TCR-positive T-cells are infused into some patients.

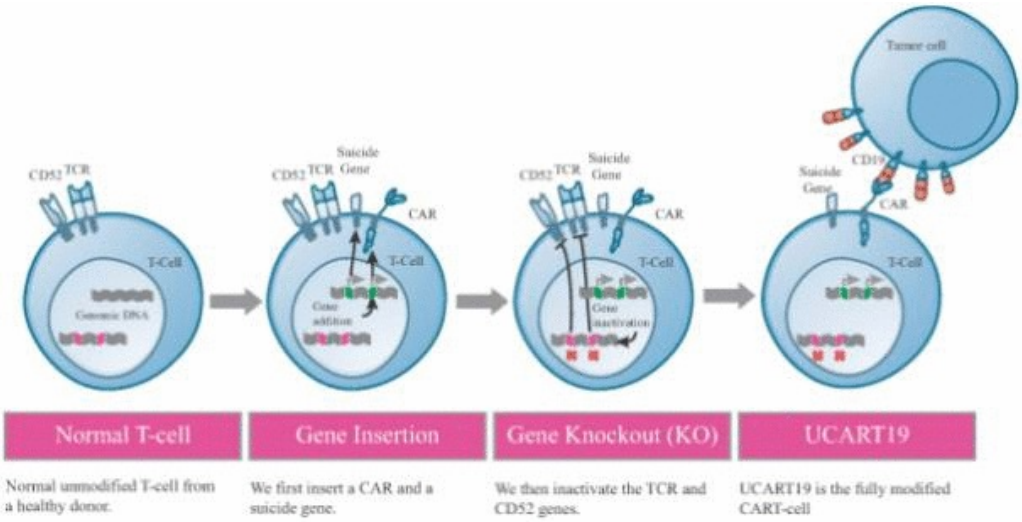
The figure below depicts the suppression of alloreactivity in T-cells engineered to lack functional TCRs. The figure summarizes experiments in which we injected mice with T-cells engineered for the inactivation of TCRα while injecting other mice with non-engineered T-cells with functional TCRs. We then measured the effects of such injections on mean body weight, which serves as a proxy for the impact of GvHD.



Once modified, the T-cells of our UCART products are amplified. The desired TCR-alpha deleted are then purified from the cells that may still bear a TCR, and are finally frozen. We perform a battery of specialized testing techniques and various quality assurance and quality control assays to further validate cellular functional integrity following gene editing.

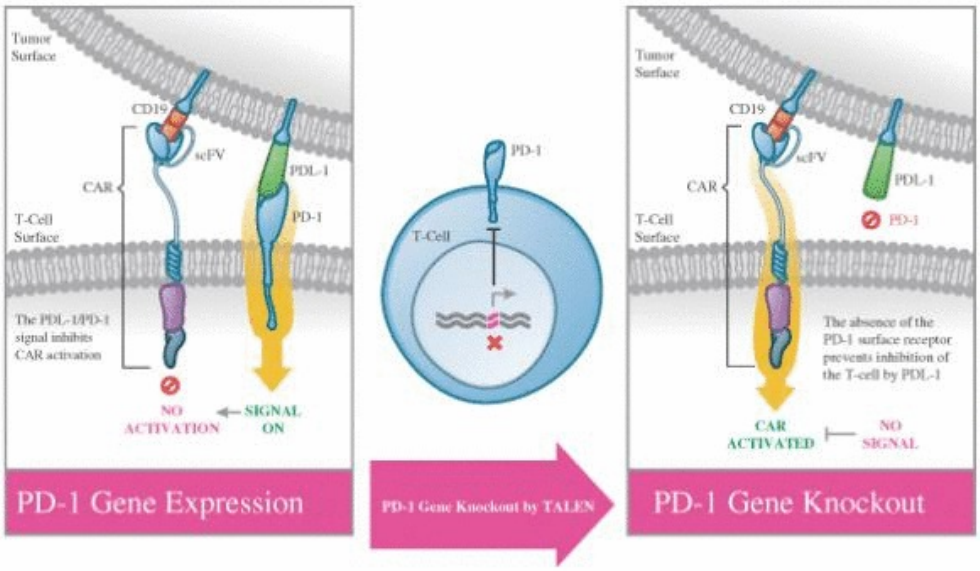
The lack of a TCR at the surface of our UCART product candidates is a key feature that allows them to be used as allogeneic off-the-shelf products. Other genes can also be inactivated in this round to confer additional specific attributes to the T-cells. They can be made resistant, and therefore compatible, with specific medical regimens used during the course of cancer treatments. For example, we inactivate the CD52 gene, which codes for the target of alemtuzumab, a monoclonal antibody sometimes used in CLL patients, that would otherwise destroy our engineered T-cells. Likewise, we believe we can inactivate the deoxycytidine kinase (dCK) or glucocorticoid receptor (GR) genes in order to make our T-cells respectively resistant to purine nucleotide analogs (e.g., fludarabine, clofarabine or cytarabine) or to corticoids that are used for several types of cancer patients.

The following diagram shows the key stages in our engineering of UCART19:



Our engineered T-cell could also be made insensitive to inhibition signals, which diminishes immune system activity, that may be present within the tumor microenvironment and that usually block T-cell attacks. For example, we inactivate the PD-1 gene in our engineered T-cells so that they would no longer be subject to checkpoint regulator inhibition by tumors expressing PDL-1, a common anti-immune defense mechanism found in cancer.

The following diagram shows the inactivation of the PD-1 gene to suppress checkpoint inhibition in the T-cell:



Using our ability to add and to inactivate genes, our platform has the flexibility to deliver smart T-cells designed for specific indications and purposes.

Key Benefits of our UCART Approach

We believe our CAR T approach and manufacturing process has the potential to provide the following benefits:

- *Market Access*. Enable products to be shipped globally, thereby reducing deployment obstacles.

  Our UCART product candidates are intended to enable universal market access driven by an allogeneic approach. Current autologous treatments require dedicated infrastructure, which could limit their availability to only a few select sites. Because our UCART product candidates are designed to be frozen and available off-the-shelf, they could be shipped globally at any time and administered immediately to patients when needed, including in local clinics.

- *Cost-effectiveness*. Streamlined manufacturing process has the potential to reduce costs.

  Our manufacturing process is a benefit to our UCART product candidate line that could contribute to the design of a reasonably priced product. Our manufacturing process produces UCART product candidates from healthy, selected, screened and tested donor T-cells. Moreover, because our process is powered by our nucleases and our proprietary PulseAgile electroporation systems, we expect to be able to inactivate genes in a highly efficient manner that avoids harming T-cells during processing, which could allow us to manufacture quality UCART products at high yields. This could enable us to manufacture in bulk, and we expect that T-cells from one healthy donor, and one manufacturing run of UCART, could be used to create hundreds of doses of product. These efficiencies could allow us to reduce costs to patients and produce competitive gross profit margins.

- *Novel Features*. Develop products with specific safety and control properties.

  We aim to engineer T-cells for specific clinical results that enhance safety and provide greater control over cellular activity. For example, our research includes disabling T-cells from attacking a patient's healthy tissues, designing T-cells to be compatible with standard oncology treatments, enabling our engineered T-cells to surpass key immune checkpoint regulators that can protect tumors from the immune system, and building into our products a suicide gene that directs the natural clearance of allogeneic T-cells with the addition of a drug.

- *Compatibility*. Develop products taking into consideration the current standards of cancer care.

  Our research also aims at allowing T-cells to resist and be compatible with compounds that cancer patients are exposed to, including standard oncology treatments, such as specific monoclonal antibody therapies, corticoids, or other relevant chemotherapies. We are pursuing treatment options that would allow patients to be treated with our engineered T-cells after or during treatment with traditional approaches that would impair T-cell function or viability.

- *Consistency*. Qualify and develop cancer products that are designed for optimal dosage, while reducing batch-to-batch variability.

  Our frozen, off-the-shelf UCART product candidates are intended to be produced pursuant to cGMP and are extensively controlled. Like other pharmaceutical products, we expect that their quality will be controlled to ensure consistency over time and from batch to batch. This is a significant difference from autologous approaches currently reported to be in clinical development. In these autologous settings, where the donor of T-cells is the very patient who will receive the CAR-bearing cells, a specific batch of T-cells must be made for each patient and in some cases, sufficient T cells may not be available from the patient to create the autologous product.

How can we turn a procedure into a large scale, widely available drug?

Autologous CAR-T cell approaches are therapeutic procedures conducted for each patient, which involve the engineering of T-cells by addition of a transgene coding for a chimeric antigen receptor into the patient's own T cells. Our UCART approach goes one step further in engineering and also in moving the CAR concept from a patient-by-patient therapeutic procedure to an off-the-shelf widely available pharmaceutical compound.

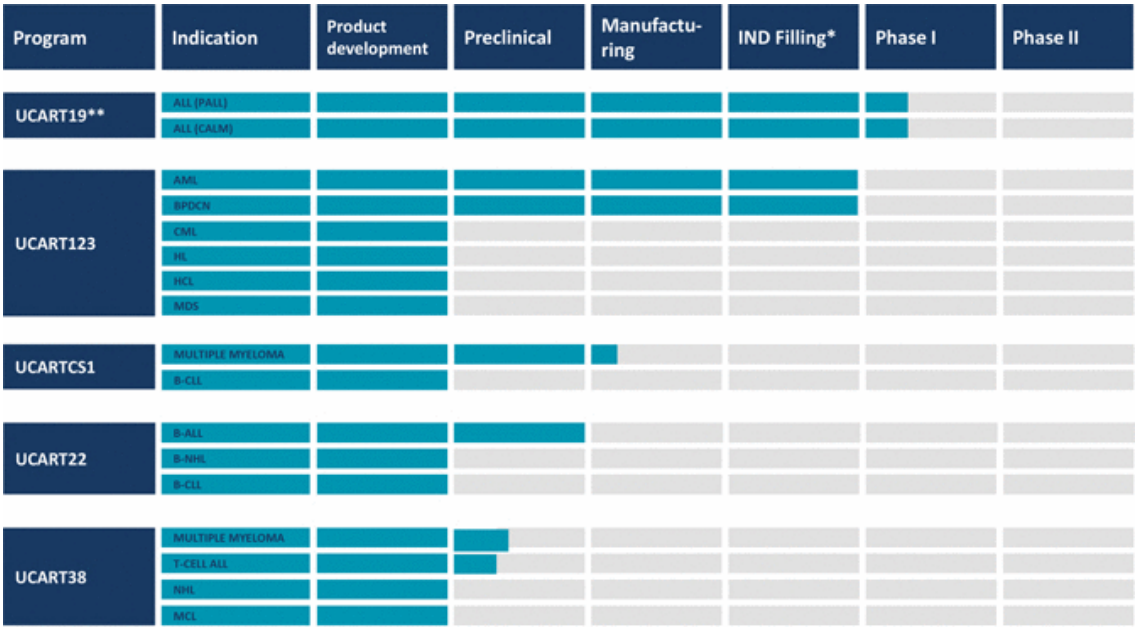
The manufacturing process of our allogeneic CAR T-cell product line, Universal CARTs or UCARTs, yields frozen, off-the-shelf, allogeneic, engineered CAR T-cells. UCARTs are meant to be readily available CAR T-cells for a large patient population. The specificity of those allogeneic therapies is that T-cells from healthy donors are genetically edited with our proprietary technology, TALEN®, to seek and destroy cancer cells. TALEN®-based gene editing (knock-out of the TCR-alpha gene and, for UCART19, of the CD52 gene) is designed to suppress T-cell alloreactivity (and, for UCART19, to confer resistance to alemtuzumab) to the T-cells.

Our UCARTs are designed and manufactured through a common platform that relies on defined unit operations and technologies combined into a single process adapted to each individual UCART. The process is gradually developed from small to larger scales, incorporating elements that are eventually used in GMP conditions. On October 28, 2015, we announced that we completed a series of three production runs of UCART19 confirming the transfer of Cellectis' manufacturing process into clinical grade, GMP conditions. This important milestone showed that UCARTs can be manufactured in GMP conditions and demonstrated the industrial production of UCART19, as well as the capacity of Cellectis' pipeline of UCART product candidates to be manufactured for clinical investigations. Since then, UCART19 manufacturing of clinical supplies has been conducted by CELLforCURE to support the two clinical trials opened with UCART19 in the United Kingdom. On November 15, 2016, we announced that we completed a series of production runs of UCART123 at CELLforCURE, our CMO, to support the UCART123 Clinical Trials for which we filed an IND, the FDA approval of which was announced on February 6, 2017.

UCART Pipeline

We are developing a series of product candidates for advanced malignancies.

Our lead immuno-oncology product candidates, which we refer to as UCARTs, are all allogeneic CAR T-cells engineered to be used for treating any patient with a particular cancer type. Each UCART product candidate targets a selected antigen expressed on tumor cells and bears specific engineered attributes, such as compatibility with specific medical regimens that cancer patients may undergo. UCART is the first therapeutic product line that we are developing with our gene-editing platform to address unmet medical needs in oncology. We are focusing our initial internal pipeline in the hematologic malignancies space, targeting diseases with high unmet needs such as acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), multiple myeloma (MM) and different types of lymphomas. In December 2016, we filed an IND for our lead product candidate, UCART123 in AML and in BPDCN and in February 2017, we received FDA approval to commence the UCART123 Clinical Studies. All of our other product candidates are currently in the pre-clinical proof-of-concept phase, and the following chart highlights some of these product candidates:



* or European equivalent
** UCART19 is exclusively licensed to Servier and under a joint clinical development agreement between Servier and Pfizer

Our wholly-controlled product candidates UCARTCS1, UCART38 and UCART22 are in various stages of early development. UCART123, UCARTCS1, UCART38 and UCART22 are engineered T-cell product candidates that bear CARs that seek to kill cells expressing targets CD123, CS1 (also known as SLAMF7), CD38 and CD22, respectively, which are found in other hematologic tumors, such as acute myeloid leukemia, or AML, and multiple myeloma, or MM, as well as acute lymphoblastic leukemia, or ALL.

UCART19 for Acute Lymphoblastic Leukemia

UCART19 is an allogeneic, off-the-shelf product candidate designed to exhibit high efficacy in fighting hematological malignancies bearing the B-lymphocyte antigen CD19, or CD19. In November 2015, Servier acquired the exclusive rights to UCART19 from Cellectis. Following further agreements, Servier and Pfizer began collaborating on a joint clinical development program for UCART19, and Pfizer has acquired exclusive rights from Servier to develop and commercialize UCART19 in the United States.

Targeted Indications

Adult and Pediatric Acute Lymphoblastic Leukemia

ALL is a heterogeneous hematologic disease characterized by the proliferation of immature lymphoid cells in the bone marrow, peripheral blood, and other organs. The proliferation and accumulation of blast cells in the marrow results in suppression of hematopoiesis and, thereafter, anemia, thrombocytopenia, and neutropenia. Extramedullary accumulations of lymphoblasts may occur in various sites, especially the meninges, gonads, thymus, liver, spleen, or lymph nodes. The age-adjusted incidence rate of ALL in the United States is 1.77 per 100,000 individuals per year, with approximately 6250 new cases and 1450 deaths estimated in 2015. The median age at diagnosis for ALL is 15 years with 57,2%% of patients diagnosed at younger than 20 years of age. In contrast, 26,8% of cases are diagnosed at 45 years or older and only approximately 11% of patients are diagnosed at 65 years or older. ALL represents 75% to 80% of acute leukemia among children, making it the most common form of childhood leukemia; by contrast, ALL represents approximately 20% of all leukemia among adults. The cure rates and survival outcomes for patients with ALL have improved dramatically over the past several decades, primarily among children. Improvements are largely owed to advances in the understanding of the molecular genetics and pathogenesis of the disease, the incorporation of risk-adapted therapy, and the advent of new targeted agents. Data from the Surveillance, Epidemiology, and End Results (SEER) database have shown a 5-year overall survival (OS) of 86% to 89% for children. Adults have the poorest 5-year OS rate of 24.1% for patients between the

ages of 40 and 59 years and an even lower rate of 17.7% for patients between the ages of 60 and 69 years. Despite great progress in the development of curative therapies, ALL remains a leading cause of pediatric cancer-related mortality for patients presenting with a relapsed or refractory disease. New therapies are needed to overcome chemotherapy resistance and reduce non-specific treatment associated side effects.

Product Features

UCART19 is an allogeneic T-cell product intended for the treatment of CD19-expressing hematologic malignancies, which develop in ALL and CLL.

UCART19 is designed to become active, proliferate, secrete cytokines and kill CD19-bearing B-cell malignancies upon contact with such cells, following administration to patients. Activation of UCART19 is driven by contact between its anti-CD19 CAR and the CD19 protein on the surface of tumor cells.

UCART19 cells bear a CAR targeting the CD19 antigen that drives their capacity to kill CD19-bearing cells. Moreover, as all UCART product candidates, UCART19 lacks the TCR responsible for recognition of non-self antigens by the T-cells, which allows use of healthy donor T-cells to produce UCART19, with reduced potential for GvHD. In addition, some UCART19 cells lack CD52, a protein expressed on the cell surface that makes T-cells sensitive to alemtuzumab, a drug often used to treat CLL patients. This feature should allow for improved engraftment of the cells in conjunction with a potential alemtuzumab treatment.

UCART19 activation could potentially lead to eradication of CD19-expressing cancer cells through T-cell mediated killing of such cancer cells and potentially pro-inflammatory immune system production as well as CAR T-cell amplification.

Pre-clinical and Clinical Findings

UCART19 has been evaluated both in vitro and in animal studies, with promising results.

In vitro studies demonstrated killing of human CD19-bearing cells by UCART19. Animal studies were conducted in mice injected both with UCART19 and human CD19-bearing tumor cells. UCART19 was tested for its potential to induce GvHD. As expected, mice receiving unmodified T-cells from a human donor showed GvHD, while mice receiving the UCART19 cells that lack the TCR showed no sign of GvHD. In these experiments, all mice receiving tumor cells but no T-cells showed strong tumor progression. In most of the mice that received the tumor, it was eradicated within 13 days after receiving UCART19 cells, and partial responses were observed in the remaining mice. In addition, our studies also show that UCART19 cells were resistant to alemtuzumab in mice.

We believe our promising pre-clinical results, coupled with the preliminary reported for the UCART19 Clinical Studies, are positive indicators that the UCART19 product candidate may successfully continue its development.

Development Status

In 2016, Servier commenced the UCART19 Clinical Studies—a Phase I clinical study in pediatric acute lymphoblastic leukemia (ALL), the PALL study, and a Phase I clinical study in adult patients with ALL, the CALM study, each of which was approved by the MHRA. The UCART19 Clinical Studies are currently enrolling patients.

In November 2015, when we exclusively licensed the rights to UCART19 to Servier, Servier also announced that it had granted Pfizer the exclusive rights for the development and the commercialization of UCART19 in United States. During a meeting at the National Institutes of Health's Recombinant DNA Advisory Committee (or "RAC") held on December 14, 2016, Servier and Pfizer presented early clinical data on UCART19, including data with respect to three patients who received UCART19 outside of the UCART19 Clinical Studies on a compassionate use basis and preliminary data of four patients treated with UCART19 under the UCART19 Clinical Studies, and obtained unanimous approval for the CALM protocol to be started in United States. In March 2017, Servier, in collaboration with Pfizer, obtained FDA approval to extend Phase I of the CALM study in United States.

UCART123 for Acute Myeloid Leukemia (AML) and Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN)

UCART123 is an allogeneic engineered T-cell product designed for the treatment of hematologic malignancies expressing the interleukin-3 low affinity receptor, or CD123, and is currently being developed for the treatment of Acute Myeloid Leukemia (AML) and Blastic Plasmacytoid Dentric Cell Neoplasm (BPDCN).

Targeted Indications

Acute Myeloid Leukemia (AML)

Acute myeloid leukemia (AML) is a form of cancer that is characterized by infiltration of the bone marrow, blood, and other tissues by proliferative, clonal, abnormally and/or poorly differentiated cells of the hematopoietic system called blast cells. These cells interfere with normal hematopoiesis, thus contributing to the bone marrow failure which is the most common underlying cause of death. AML is the most common type of acute leukemia in adults and has an annual overall incidence of 3.8 cases per 100,000 in the US and Europe. Although it can occur in children and adults, AML is primarily a disease of the elderly, with an incidence of 15 cases per 100,000 for those over 60 and a median age of patients with AML of 67 years. While complete response rates can be as high as 80% in patients undergoing initial induction cytotoxic chemotherapy, the majority of AML patients will ultimately be diagnosed with relapsed or refractory disease with a poor prognosis. The outcome in older patients who are unable to receive intensive chemotherapy without unacceptable side effects remains dismal, with a median survival of only 5 to 10 months. CD 123 is highly expressed on acute myeloid leukemia (AML) leukemic stem cells and blast cells, as well as in other hematologic malignancies, and constitutes an attractive target for AML.

Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN)

Blastic plasmacytoid dendritic cell neoplasm (BPDCN) is a rare and aggressive hematological neoplasm classified among AML in the 2008 World Health Organization (WHO) classification of hematologic malignancies, and reclassified under myeloid neoplasms, acute leukemia in the 2016 WHO classification. BPDCN is a rare myeloid disease characterized by the clonal proliferation of precursors of plasmacytoid dendritic cells. There are no formal studies on the incidence of BPDCN in the general population. The few available data reported indicate that its overall incidence is extremely low, accounting for 0.44% of all hematologic malignancies and 0.7% of cutaneous lymphomas. Moreover, the leukemic form of disease is a rare phenomenon, representing fewer than 1% of cases of acute leukemia. The disease may occur at any age, but most patients are elderly men who present with skin lesions and/or involved lymph nodes, spleen, and bone marrow. Given its rarity and only recent recognition as a distinct clinico-pathological entity, no standardized therapeutic approach has been established for BPDCN and the optimal therapy remains to be defined. Although transient responses are seen to combination chemotherapy regimens used to treat acute leukemia or lymphoma, most patients relapse with drug-resistant disease with a median overall survival rate of 9 to 13 months, irrespective of the initial presentation of the disease.

Product Features

UCART123 is an allogeneic T-cell product candidate intended for the treatment of CD123-expressing hematologic malignancies.

UCART123 is designed to become active, proliferate, secrete cytokines and kill CD123 expressing cells. UCART123 bears a CAR targeting the CD123 antigen, providing specificity for CD123 expressing cells. In addition, as with all UCART products, UCART123 lacks the TCR and is intended to be used in an allogeneic context. UCART123 activity could potentially lead to eradication of CD123-expressing cancer cells through T-cell mediated killing, pro-inflammatory cytokine production as well as CAR T-cell amplification.

Pre-clinical Findings

UCART123 is being evaluated both in vitro and in animal studies, with promising results.

In vitro studies demonstrated efficient killing of human CD123-bearing cell lines by UCART123. In addition, UCART123 has also demonstrated efficient killing of human CD123-expressing cells derived from AML and BPDCN patients. Animal studies were conducted in mice injected both with UCART123 and human CD123-bearing tumor cells, and have shown anti-tumor activity in an immunodeficient mouse model. In addition, in another animal model, limited toxicity against normal, healthy cells, has been observed.

UCART123 was also tested for its potential to induce GvHD. Mice receiving unmodified T-cells from a human donor showed GvHD, while mice receiving the UCART123 cells that lack the TCR showed no sign of GvHD. Pre-clinical and translational activities on UCART123 in AML and BPDCN were performed in collaboration with Weill Cornell and MD Anderson Cancer Center, respectively.

Development Status

In December 2016, we filed an IND for UCART123, requesting approval to initiate the UCART123 Clinical Studies, a Phase I clinical study on UCART123 in AML, and a Phase I clinical study in BPDCN. In February 2017, we received FDA approval to commence the UCART123 Clinical Studies. Subject to approval of the pending IRBs and the successful negotiation of clinical trial agreements, the UCART123 Phase I clinical study in AML will be conducted at Weill Cornell and the UCART123 Phase I in clinical study BPDCN will be conducted at MD Anderson Cancer Center.

UCARTCS1 for Multiple Myeloma (MM)

UCARTCS1 is an allogeneic engineered T-cell product candidate designed for the treatment of CS1-expressing hematologic malignancies which is being developed in multiple myeloma (MM).

Targeted Indication Multiple Myeloma

Multiple myeloma (MM) is a clonal plasma cell malignant neoplasm that is characterized by the neoplastic proliferation of a single clone of plasma cells producing a monoclonal immunoglobulin. This clone of plasma cells proliferates in the bone marrow and often results in extensive skeletal destruction with osteolytic lesions, osteopenia, and/or pathologic fractures. Additional disease-related complications include hypercalcemia, renal insufficiency, anemia, and infections. MM accounts for approximately 10% of hematologic malignant disorders. The annual incidence, age-adjusted to the US population, is 4.3 per 100,000, resulting in over 20,000 new patients in the United States each year. The median age at onset is 66 years, and only 2% of patients are younger than 40 years of age at diagnosis. Nine drugs have been approved over the past fifteen years for the treatment of MM, substantially expanding the number of treatment regimens available for patients in all stages of the disease. In the last decade, survival of multiple myeloma (MM) patients has markedly improved with a median survival of approximately 5 to 7 years but with major variation depending on host factors, stage of the disease, cytogenetic abnormalities, and response to therapy. However, despite this progress, patients with disease refractory to both immunomodulatory drugs (IMiDs) and proteasome inhibitors have a median overall survival (OS) of only 9 months.

Product Features

UCARTCS1 is an allogeneic T-cell drug candidate intended for the treatment of CS1 (also as known as SLAMF7)-expressing hematologic malignancies, in particular MM. UCARTCS1 is designed to become active, proliferate, secrete cytokines and kill CS1 expressing cells. As CS1 is expressed on the cell surface of CD8 T-cells, CS1 will be inactivated in T-cells prior to transduction with a viral vector encoding an anti-CS1 CAR. The inactivation of CS1 may improve the production and activity of UCARTCS1 by preserving the CD8 T cell population. In addition, as with all UCART products, UCARTCS1 lacks the TCR and is intended to be used in an allogeneic context.

Pre-clinical Findings

In vitro studies demonstrated efficient killing of human CS1-bearing cell lines by UCARTCS1. Furthermore, while non-gene-edited T-cells expressing an anti-CS1 CAR display limited cytolytic activity in vitro against MM cell lines and result in a progressive loss of CD8 T-cells, CS1-gene-edited CAR cells (UCARTCS1) display significantly increased cytotoxic activity, with the percentage of CD8 T-cells remaining unaffected. Experiments in an orthotopic MM mouse model showed that UCARTCS1 was able to mediate an *in vivo* anti-tumoral activity. Further in vitro and in vivo studies are ongoing to further investigate the safety and the activity of UCARTCS1.

Development Status

UCARTCS1 is at the pre-clinical stage of development. We expect pre-clinical and translational activities for UCARTCS1 in MM to be performed in collaboration with the MD Anderson Cancer Center.

We have initiated the manufacturing process transfer to CELLforCURE, our third-party manufacturing contractor, for clinical supplies of UCARTCS1. We intend to start manufacturing of clinical grade UCARTCS1 at large scale in accordance with GMP in 2017 for use in conducting clinical trials.

UCART22 for Acute Lymphoblastic Leukemia (ALL)

UCART22 is an allogeneic engineered T-cell product candidate designed for the treatment of Acute Lymphoblastic Leukemia.

See “Item 4.B.—Business Overview—UCART Pipeline—UCART19 for Acute Lymphoblastic Leukemia—Targeted Indications—Adult and Pediatric Acute Lymphoblastic Leukemia” for more information on ALL.

Product Features

UCART22 is an allogeneic engineered T-cell product candidate intended for the treatment of CD22-expressing hematologic malignancies. UCART22 is designed to become active, proliferate, secrete cytokines and kill CD22 expressing cells (i.e. either CD22 positive tumor cells or non-malignant CD22 positive B lineage cells). UCART22 bears a CAR targeting the CD22 antigen, providing specificity for CD22 expressing cells. In addition, as with all UCART products, UCART22 lacks the TCR and is intended to be used in an allogeneic context.

UCART22 activity could potentially lead to eradication of CD22-expressing cancer cells through T-cell mediated killing, pro-inflammatory cytokine production as well as CAR T-cell amplification.

Pre-clinical findings

In vitro studies demonstrated efficient killing of human CD22-bearing cell lines by UCART22. Animal studies were conducted in mice injected both with UCART22 and human CD22-bearing tumor cells, and have shown anti-tumor activity in an immunodeficient mouse model. Further *in vitro* and *in vivo* studies are ongoing to further investigate the safety and the activity of UCART22.

Development Status

UCART22 is at the pre-clinical stage of development. We expect the pre-clinical and translational activities on UCART22 in ALL to be performed in collaboration with the MD Anderson Cancer Center.

UCART38 for T-cell Acute Lymphoblastic Leukemia (T-ALL) and Multiple Myeloma (MM)

UCART38 is an allogeneic engineered T-cell product candidate designed for the treatment of CD38-expressing hematologic malignancies which develop in T-cell acute lymphoblastic leukemia (T-ALL) and in multiple myeloma (MM).

Targeted Indications:

T-cell Acute Lymphoblastic Leukemia (T-ALL)

T-cell acute lymphoblastic leukemia (T-ALL) is an aggressive malignant neoplasm of the bone marrow. It accounts for approximately 20% of all cases of ALL and is somewhat more common in adults than children, although the incidence diminishes with older age. Its clinical presentation can include hyperleukocytosis with extramedullary involvement of lymph nodes and other organs, including frequent central nervous system infiltration and the presence of a mediastinal mass, arising from the thymus. The diagnosis and treatment of T-ALL remains a challenge with its uncommon and aggressive presentation.

Multiple Myeloma (MM)

See “Item 4.B—Business Overview—UCART Pipeline—UCARTCS1 for Multiple Myeloma (MM)—Targeted Indication Multiple Myeloma” for more information on Multiple Myeloma.

Other CD38-positive potentially targeted indications

Other types of lymphoproliferative diseases, especially Non-Hodgkin Lymphomas, of B or T origin are also expressing CD38, and could potentially be targeted.

Product Features

UCART38 is an allogeneic T-cell drug candidate intended for the treatment of CD38-expressing hematologic malignancies. UCART38 is designed to become active, proliferate, secrete cytokines and kill CD38 expressing cells. As CD38 is expressed on the cell surface of T-cells, CD38 will be inactivated in T-cells prior to transduction with a viral vector encoding an anti-CD38 CAR. The inactivation of CD38 may improve the production and activity of UCART38 by preserving T-cell population. In addition, as with all UCART products, UCART38 lacks the TCR and is intended to be used in an allogeneic context.

UCART38 activity could potentially lead to eradication of CD38-expressing cancer cells through T-cell mediated killing, pro-inflammatory cytokine production as well as CAR T-cell amplification.

Pre-clinical findings

In vitro studies demonstrated efficient killing of human CD38-bearing cell lines by UCART38. In addition, experiments in immunodeficient mice using human CD19+ tumor cells show that CD38 disrupted T-cells expressing an anti-CD19 CAR are able to mediate an *in vivo* anti-tumor activity similar to unmodified T-cells expressing an anti-CD19 CAR. These results suggest that CD38 inactivation has no major impact on the in vivo anti-tumor activity of T-cells. Further in vitro and in vivo studies are ongoing to further investigate the safety and the activity of UCART38.

Development Status

UCART38 is at the pre-clinical stage of development. We intend to have pre-clinical and translational activities on UCART38 in T-cell ALL to be performed in collaboration with the MD Anderson Cancer Center.

Our Strategic Alliances

We have signed collaboration agreements with Pfizer and Servier, which we believe validate our research and approach to CAR-T. Our strategic alliances include potential milestone payments to us of up to $3.9 billion and royalties on future sales.

Research Collaboration and License Agreement with Pfizer

In June 2014, we entered into a Research Collaboration and License Agreement with Pfizer pursuant to which we collaborate to conduct discovery and pre-clinical development activities to generate CAR T-cells directed at Pfizer- and Cellectis-selected targets in the field of human oncology. We granted Pfizer an exclusive, worldwide, royalty-bearing, sublicensable license, on a target-by-target basis, under certain of our intellectual property to make, use, sell, import, and otherwise commercialize products directed at the Pfizer-selected targets in the field of human oncology.

Under the agreement, we are obligated to use commercially reasonable efforts to develop, for each Cellectis-selected target, at least one product candidate. Pfizer granted us a non-exclusive, worldwide, royalty-free license, with sublicensing rights under certain conditions, under certain of its intellectual property to conduct research, and to make, use, sell, import and otherwise commercialize products directed at Cellectis-selected targets.

Pursuant to the agreement, Pfizer made an upfront, non-refundable $80.0 million payment to us, concurrent with Pfizer's €25.8 million equity investment in our company. In addition, the strategic alliance provides for payments of up to $185.0 million per product that is directed against a Pfizer-selected target, with aggregate potential pre-clinical, clinical and commercial milestone payments totaling up to $2.8 billion. We are also eligible to receive from Pfizer tiered royalties on annual net sales of any products that are commercialized by Pfizer that contain or incorporate certain of our intellectual property at rates in the high single-digit percentages.

Except as required of us by our collaboration agreement with Servier, until the earlier of (1) the completion or termination of a four-year term or (2) the filing by Cellectis of an IND for certain targets to which we retain rights, we and our affiliates may not grant rights under certain of our intellectual property and intellectual property developed in the course of the collaboration to develop or commercialize CAR T-cells in the field of human oncology, other than certain specified non-commercial collaborations.

Unless earlier terminated in accordance with the agreement, our agreement with Pfizer will expire on a product-by-product and country-by-country basis, until the later of (1) the expiration of the last to expire of the licensed patents covering such product; (2) the loss of regulatory exclusivity afforded such product in such country, and (3) the tenth anniversary of the date of the first commercial sale of such product in such country; however, in no event shall the term extend, with respect to a particular licensed product, past the twentieth anniversary of the first commercial sale for such product. At any time after the first anniversary of the effective date of the agreement, Pfizer will have the right to terminate the agreement at will upon 60 days' prior written notice, either in its entirety or on a target-by-target basis. Either party may terminate the agreement, in its entirety or on a target-by-target basis, upon 90 days' prior written notice in the event of the other party's uncured material breach. The agreement may also be terminated upon written notice by Pfizer at any time in the event that we become bankrupt or insolvent.

Research, Product Development, Option, License and Commercialization Agreement with Servier

In February 2014, we entered into a Research, Product Development, Option, License and Commercialization Agreement with Servier. Pursuant to this agreement, we are responsible for the research and development up to and including the Phase I clinical trial of candidate products directed against five targets, including the UCART19 product candidate. Pursuant to the agreement, we granted Servier the right to exercise an exclusive option to obtain an exclusive, worldwide license, on a product

candidate-by-product candidate basis, with respect to each product candidate selected by Servier and developed under the agreement. Upon Servier's exercise of each option, we shall grant Servier an exclusive, worldwide, royalty-bearing, sublicensable license under certain of our patents and know-how covering the respective product candidate to develop, manufacture and commercialize such product in the field of anti-tumor adoptive immunotherapy, and Servier will assume responsibility for the further clinical development, manufacture and commercialization of such product. During the term of the agreement, we are prohibited from researching, developing, or commercializing any product directed against a target that is used for the same purpose as it is used with a product candidate developed under the agreement.

Pursuant to the agreement, Servier made an upfront payment of €7.55 million and, upon its exercise of each license option provided for in the agreement, Servier will pay us a lump sum license fee.

In November 2015, we entered into an amendment to our initial collaboration agreement with Servier, which allowed for an early exercise of Servier's option with respect to UCART19 and other product candidates. Pursuant to this amendment, Servier has exercised its option to acquire the exclusive worldwide rights to further develop and commercialize UCART19. In connection with the entry into the amendment to the collaboration agreement, Servier made an upfront payment of €35.6 million ($38.5 million), excluding taxes.

As of December 31, 2016, we are eligible to receive from Servier aggregate additional payments of up to €887 million ($966.0 million), comprising payments upon the exercise of options granted to Servier under the agreement and payments upon the occurrence of certain specified development and commercial milestones. Pursuant to the agreement, we are also eligible to receive tiered royalties ranging in the high single-digit percentages based on annual net sales of commercialized products.

Unless earlier terminated, the agreement will expire upon the expiration of the last to expire of the patents covering a product licensed pursuant to the agreement. Either party may terminate the agreement for the other party's uncured material breach upon 90 days' prior written notice to the breaching party, or 30 days' notice if such breach relates to a payment obligation. The parties may also terminate the agreement by mutual consent. The agreement immediately and automatically terminates upon the expiration of Servier's last license option in the event Servier has not exercised any option to license in accordance with the agreement prior to such expiration. Servier has the right, at its sole discretion, to terminate the agreement in its entirety or with respect to specific products, upon three months' prior written notice to us. Servier may also terminate the agreement at any time for product-related safety reasons. Either party may terminate the agreement in the event of the other party's bankruptcy or insolvency. In the event that Servier does not exercise its option to license a product candidate, we may independently pursue all activities related to such product candidate and/or license such product candidate and the associated intellectual property to a third party. For such purpose, Servier granted us a non-exclusive, sublicensable license under any such Servier-controlled intellectual property for which we will pay tiered royalties on annual net revenues at rates ranging in the low single-digit percentages.

Collaboration with Cornell University and MD Anderson Cancer Center

In 2015, we entered into alliances with Cornell University and the MD Anderson Cancer Center to accelerate the development of our lead candidate products.

Alliance with Cornell University

On June 2, 2015, Cornell University and Cellectis entered into a strategic research alliance to accelerate the development of a targeted immunotherapy for patients with acute myeloid leukemia (AML). Under our alliance with Cornell University and Cellectis will conduct research and develop clinical strategies with the objective of implementing and conducting one or more clinical trials at Weill Cornell on UCART123 and potentially other product candidates in AML. Cellectis is responsible for funding the research programs, and Cornell University and Cellectis will work together to develop and implement improvements to the research plan for the programs. The objectives of the collaboration are to demonstrate functionalities and specificity of UCART123 in vitro and in vivo, define the pre-clinical package required for a clinical trial application, prepare the clinical trial protocol and the regulatory and other study-specific documents, and discovery research for the identification of novel targets in AML patients potentially enabling the development of additional CARs for AML.

In connection with the alliance, Cellectis is responsible for generating and manufacturing UCART123 and performing in vitro and in vivo pre-clinical activities on tumor cell lines and in animal models. Cornell University is responsible for evaluating UCART123 activity against primary AML samples and in animal models, as well as evaluating toxicity against HSCs in animal models. Cornell University will also work on the development and implementation of correlative studies. In addition, Cornell University and Cellectis will collaborate on the preparation of clinical trial protocols. Finally, Cellectis and Cornell University are working on target discovery in the AML area, in order to identify new potential targets for AML and generate new potential candidate products for AML patients.

With respect to our proposed clinical study on AML with UCART123, a submission for IRB approval is pending at Weill Cornell and we are negotiating a clinical trial agreement.

Alliance with The MD Anderson Cancer Center

On September 1, 2015, Cellectis and the MD Anderson Cancer Center entered into a research and development alliance aimed at bringing novel cellular immunotherapies to patients suffering from different types of liquid tumors, particularly multiple myeloma (MM), acute lymphoblastic leukemia (ALL), T-cell acute lymphoblastic leukemia (T-ALL) and blastic plasmacytoid dendritic cell neoplasm (BPDCN). Under this strategic alliance, the MD Anderson Cancer Center and Cellectis have agreed to collaboratively conduct several pre-clinical studies on candidate products: UCART123 in BPDCN, UCARTCS1 for multiple myeloma, UCART38 for T-ALL and UCART22 for ALL. Cellectis has agreed to provide funding and other support for these studies. The objective of the studies is to build on complementary expertise from the MD Anderson Cancer Center and Cellectis for the development of the product candidates. The MD Anderson Cancer Center and Cellectis will work together to develop and implement improvements to the research plan for the programs under joint direction of the MD Anderson Cancer Center and Cellectis' investigators. The objective of the studies is to demonstrate the functionalities and specificity of the UCART candidate products listed above, define the pre-clinical package required for clinical trial applications, prepare a clinical trial protocol and the regulatory documents required for interactions with FDA and the clinical trial applications. Pursuant to the alliance, Cellectis is responsible for generation and manufacturing of the UCART candidate products and some of the in vitro and in vivo pre-clinical work. The MD Anderson Cancer Center is responsible for evaluation of the candidate products against primary patient samples and for some activities to be performed in animal models. The alliance also includes the possibility for Cellectis and the MD Anderson Cancer Center to collaborate on one or more early phase clinical studies on the same product candidates.

With respect to our proposed clinical study on BPDCN with UCART123, a submission for IRB approval is pending at the MD Anderson Cancer Center and we are negotiating a clinical trial agreement.

Raw Materials

We are dependent on specialized third parties, who are subject to stringent manufacturing requirements and regulations, for the supply of various critical and biological materials—such as cells, cytokines, vectors, nucleic acids, antibodies—that are necessary to produce our product candidates. We source these raw and starting materials on a purchase order basis and do not systematically have long-term supply contracts in place. However, we believe that competitive pricing is achieved because there are a number of potential long-term replacements to each of our suppliers. Generally, the prices of the principal biological raw and starting materials that we purchase are stable. To the extent that we are exposed to price fluctuations, we generally do not expect, in the near term, to be able to pass on cost increases because of the early development stage of our product candidates.

Applications of Our Technology in Agricultural Biotechnology

Calyxt, Inc., or Calyxt, was established in 2010 and currently focuses on the development and commercialization of new crops and plant-derived products. As the global population continues to increase, so too does the global demand for food. The current U.S. market size of major crops such as soybean, wheat and potato, as measured at the grower level, is in excess of $40 billion, $9 billion and $3 billion, respectively. By leveraging the transformative potential of gene editing, we aim to create food products with consumer health benefits, adaptations for climate change or nutritional enhancements that address the needs of a growing population. Further, we believe we can create crops that withstand the challenges of a changing climate and are more productive with fewer inputs. We believe we have the unique opportunity to develop products at a much lower cost than current transgenic plants and to do so within a shorter timeline.

Gene Editing in Agricultural Biotechnology

The underlying process of targeted plant gene editing using nucleases is conceptually no different than the process we apply to human cells. We seek to create a sequence-specific DNA break in a gene-of-interest and allow the cell's natural repair machinery to create a stable change at that location in the genome. The resulting changes can precisely alter certain genes to remove potentially harmful proteins or to confer specific traits.

Plant breeders have been crossbreeding varieties and selecting advantageous traits for thousands of years. The aim of targeted gene editing is to simply speed up that process by incorporating changes into elite germplasm known from within current genes and natural variability within those crops, from wild ancestors or from other species. This produces the best possible attributes faster and more cheaply. This gene-editing approach is more predictable, more reliable, and more effective than current techniques. Calyxt is applying our plant gene-editing platform to a broad range of horticultural and agronomic plant species. Calyxt expresses nucleases in cells of target plants using proprietary transformation technologies that allow precise gene editing, while avoiding the presence of foreign DNA in the final product. Following the completion of this gene-editing step, the modified plant cell is re-grown into a fully functional plant and multiplied. The creation of these new varieties is already applicable to a wide range of crop species.

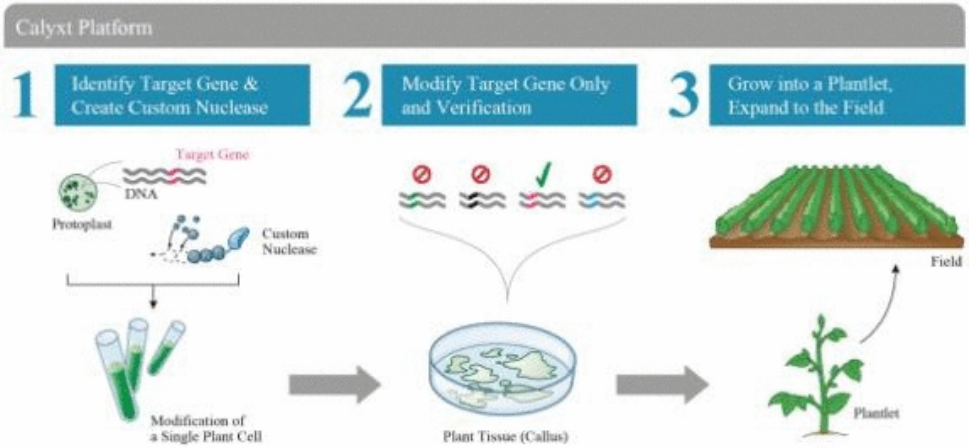
Market Dynamics

Following 20 years of industry consolidation, the current agricultural biotechnology market is dominated by a small number of large companies, such as Bayer AG, DuPont Pioneer, Groupe Limagrain Holding SA, Monsanto Co., Syngenta AG and The Dow Chemical Co. The small number of companies is also due in part to the high costs associated with product development and regulatory approval, which limit the capacity of small players to grow. Published data from industry sources indicate that the development of biotech plants takes 13 years and costs an average of $136 million, of which about $35 million are spent in regulatory science and regulatory affairs. In addition to these features, the development of transgenic crops is dependent on a set of technologies controlled by major companies. This creates a barrier for new small companies or startup companies willing to develop new crops.

TALEN Technology Platform in Agricultural Biotechnology

We aim to create food products with consumer health benefits by leveraging our plant- genome engineering platform and the transformative potential of gene editing. We edit genes naturally present in the plant genome through temporary expression of TALEN products to knock out or precisely edit genes. This process creates engineered plants that bear mutations in endogenous genes, but lack foreign genes. Our goal is to quickly develop a large number of traits in key crops, obtain regulatory clearance and field validation data, and become a new leader in the agricultural biotechnology landscape.

We believe we have the unique opportunity to develop products at a much lower cost than currently developed transgenic plants and to do so within a shorter timeline.



Based on the USDA letters dated August 28, 2014, May 5, 2015, May 20, 2015, February 11, 2016, and September 15, 2016, confirming that certain of Calyxt's potato, soybean and wheat products fall outside of the scope of regulation, we seek to enter the U.S. agricultural biotechnology market by using our proprietary TALEN technology. We believe TALEN technology will enable us to expedite the trait development process to 6-10 years and significantly lower the cost associated with development. In addition, our gene-editing approach results in transgene-free food products. We believe this will result in simpler, shorter and cheaper regulatory pathway because our products may avoid the significant expenses and long process associated with plant deregulation. We thus believe Calyxt will have the ability to commercialize its products quickly without incurring major regulatory costs or going through time-consuming deregulation processes.

By leveraging our plant-engineering platform and the transformative potential of gene editing, we aim to create food products with consumer health benefits and crops with improved agronomic traits. We are developing products in a range of commodity crops, including soybean, potato, canola and wheat. In addition, we believe our processes can be adjusted to virtually any crop.

Calyxt Agricultural Biotechnology Products

Our current agricultural biotechnology product candidates are depicted in the following table, which assumes that the same regulatory rationale would apply to all these product candidates:

Product	Trait	Discovery	Phase I	Phase II	Phase III	Commercialization
Soybean	High oleic					
	High oleic/low linolenic oil					
	Modified Protein content					
Potato	Cold storable					
	Reduced browning					
Canola	Improved oil composition					
Wheat	High fiber					
	Low gluten					
	Disease Resistant					
Alfalfa	Improved quality					

Calyxt product development currently consists of five phases:

- the discovery phase consisting of the identification of the genes of interest;
- the Phase I consisting of the gene editing using TALEN®; the creation of the gene edited plant; and the production of the initial gene edited seeds;
- the Phase II consisting of the trait validation and ingredient functionality in greenhouse and multi-location field trials;
- the Phase III consisting of the first commercial scale pilot production, food ingredient application development, establishment of the supply chain, and the building of inventory for commercialization; and
- the commercialization phase.

We may choose to partner on selected programs with third parties that have developed elite germplasm when such varieties are not readily available.

Our current main product candidates are:

High Oleic Soybean

In past decades, the food industry has been using partial hydrogenation to enhance oxidative stability of soybean oil. This process, however, creates trans fat, which has been demonstrated to raise low-density lipoprotein, or LDL, cholesterol levels and contribute to cardiovascular diseases. The discovery that dietary trans fat is unhealthy led to a FDA ruling in 2003 to require mandatory labeling of trans fat in 2006, with a full ban in 2018. Since FDA's 2003 ruling, commodity soybean oil has been quickly losing market shares to other vegetable oils such as palm oil and canola oil.

Calyxt develops a new soybean variety that produces oils with a fatty acid profile that contains 80% oleic acid and 20% less saturated fatty acids compared to commodity soybean oil. The high level of oleic acid in our soybean oil enhances oxidative stability more than threefold when compared to commodity soybean oil. This eliminates the need for partial hydrogenation, and thus does not produce trans fat during oil production. Furthermore, our high oleic soybean oil offers additional potential benefits including reduced saturated fats, a threefold increase in fry-life, reduced polymerization and neutral taste.

Created by TALEN gene editing technology, our improved soybean variety does not contain transgenes and any foreign DNA. In mid-2015, we received a USDA opinion letter rendering our high oleic variety with a non-regulated status under the Plant Protection Act. In November 2015, we announced the completion of the second year of multi-location field trials in Minnesota and South Dakota of Calyxt's high oleic soybean variety.

In 2016, 45,000 bushels of soybean seeds and grain were produced, and supply chain partnerships were established. We are currently completing our commercialization plan for the high oleic soybean and anticipate beginning commercial sales in 2018.

Powdery Mildew Resistant Wheat

In 2015, 225 million hectares of wheat were harvested worldwide resulting in more than 735 million metric tons of production, making wheat the third most-produced cereal in the world. Like many cereal crops, wheat is susceptible to a number of fungal diseases. One in particular, powdery mildew, which is caused by the fungal pathogen *Blumeria graminis* f. sp. *tritici*, is particularly devastating. Yield losses associated with heavy powdery mildew infestations can be as high as 40%, with grain quality also being negatively affected.

Pursuant to an agreement with Plant Bioscience Limited and Institute of Genetics and Development Biology Chinese Academy of Sciences (IGBD), Calyxt holds an exclusive option to obtain an exclusive license on traits that are newly developed by IGBD, including a trait providing for resistance to powdery mildew. This trait would not only improve yield potential but would also reduce the amount of chemical fungicide applications normally used to combat this disease.

We intend to conduct the first field trial to assess agronomic and trait performance of the powdery mildew resistance trait line in 2017.

Cold Storable Potato

During the cold storage of potatoes, starch is converted into reducing sugars through a process known as "cold-induced sweetening." Once these cold-stored potatoes are cooked at temperatures above 250°F, the free amino acids and reducing sugars interact to form browning and acrylamide. The National Toxicology Program has reported that acrylamide is "reasonably anticipated to be a human carcinogen." The International Agency for Research on Cancer similarly considers acrylamide to be a "probable human carcinogen" based on studies in laboratory animals.

Companies operating in the potato market lose a portion of raw material potatoes that must be stored. This loss, which is estimated to be approximately 20%, results from a combination of sprouting and browning, both of which can be avoided by colder storage. However, cold storage traditionally has been limited by the cold-induced sweetening that results from this type of storage. A cold storable potato, like the one developed by Calyxt, can address sprouting and browning as well as the traditional storage limitations.

We have developed a potato that can be cold stored but will produce significantly less acrylamide during cooking than current potato varieties. The new potato variety is currently in field trial evaluation.

Reduced Browning Potato

Blackspot bruising occurs on physical impact, or following other damage, to potato tubers and can cause major losses to the commercial potato processor when producing chips and French fries. Mechanical damage initiates enzymatic browning, resulting in symptoms include production of black, brown and red pigments. In the United States, bruising causes up to 0.9% of potatoes to be rejected by potato processors. Using our proprietary TALEN gene editing technology, we are developing a new potato variety having decreased enzymatic browning. Reduced browning will help to minimize crop rejection and waste in processing lines due to automatic discarding of blackened fries and chips, and thus provides benefits for growers and processors.

Herbicide-Tolerance Wheat

Wheat is constantly faced with yield-robbing weeds that can result in lower yield and higher dockage costs at elevator. Without an effective control, weeds can lower wheat yield by up to 20-25%. Herbicide tolerance (HT) traits offer farmers a vital tool in managing weeds effectively during crop production. In the United States, more than 90% of corn and soybean crops contain at least one HT trait. In contrast, no broadacre GMO HT trait has been developed for wheat largely due to transgene (GMO) concerns from the wheat industry. We are developing new wheat varieties with HT traits using TALEN gene editing technology. The new varieties will not contain transgene or any foreign DNA, and will have the potential to increase grower revenue.

High Fiber Wheat

The average American consumes between 10-15 grams of fiber daily, only half of the recommended value of fiber that U.S. Department of Health's dietary guidelines recommend. In the past years, health and wellness bread products are growing over 12% per year, as 35% of shoppers are now seeking high fiber claims. We are developing new wheat varieties that contain three (3) times more dietary fiber than enriched white flour. This would allow average Americans to reach their daily value of fiber without changing their intake habits. These new wheat varieties will not contain any transgenes and foreign DNA. The high fiber wheat food product has the potential to lower the rate of glucose entry into circulation, and to decrease the risk of diet-related noninfectious chronic diseases, such as heart disease, colon cancer, and diabetes.

Low Gluten Wheat

In 2016, wheat was the second-most produced cereal grain globally. A key component of wheat is gluten. Gluten gives elasticity to dough, helping it rise and keep its shape and often gives texture to the final product. However, gluten found in wheat can also be responsible for adverse immune system reactions. People sensitive to gluten generally feel better on a diet with less gluten. We are working to remove the components of gluten responsible for that harmful immune reaction. The low gluten wheat program is currently in phase I of development.

Intellectual Property

We seek to protect and enhance proprietary technology, inventions, and improvements that are commercially important to the development of our business by seeking, maintaining, and defending patent rights, whether developed internally or licensed from third parties. We will also seek to rely on regulatory protection afforded through orphan drug designations, data exclusivity, market exclusivity and patent term extensions where available.

To achieve this objective, we maintain a strategic focus on identifying and licensing key patents that provide protection and serve as an optimal platform to enhance our intellectual property and technology base.

Historical Perspectives

Cellectis was founded in early 2000. In June 2000, Institut Pasteur provided us with exclusive rights to its gene-editing patent portfolio. This patent portfolio includes patents relating to homologous recombination and rare-cutting endonucleases (also named meganucleases), respectively, for genetic engineering in living cells.

Since 2002, we have filed a large number of patent applications, many now issued as patents, for custom-made meganucleases, and uses thereof, that specifically target a desired genetic sequence in a genome. In 2014, we entered into a cross-licensing agreement with Precision Biosciences, Inc., or Precision, in settlement of patent litigation and patent proceedings related to this technology. Pursuant to this cross-license, we licensed our patents and patent applications in this area to Precision, and Precision licensed its relevant patents and patent applications to us.

In 2010, we acquired a portfolio of patents and patent applications relating to electroporation methods and devices. In addition, in 2014, we entered into a series of agreements with Life Technologies Corporation (now Thermo Fisher Scientific Inc.) pursuant to which we received a non-exclusive sublicense under certain patents and patent applications related to the research and therapeutic uses of TALEN and we granted certain rights to Life Technologies under our TALEN technology. In 2011, we entered into an exclusive license agreement with the Regents of the University of Minnesota (UMN) pursuant to which we in-licensed one patent family related to a new generation of customized rare-cutting endonucleases, in connection with which we have registered the trademark TALEN in certain jurisdictions outside of the United States. This patent portfolio comprises five patents in the United States and one European patent, which is under opposition before the European Patent Office.

Since 2012, we have filed about 50 new patent applications related to the CAR T-cell technology. Included in this patent portfolio are patent applications relating to manufacturing allogeneic immune cells and to CAR design, including multi-subunit CARs and conditional expression CARs. In addition, we have filed a number of patent applications related to new TALEN structures (for example, compact TALEN, methylation TALEN) and alternatives to the TALEN structure (BurrH, CRISPR-Cas9).

In October 2014 and March 2014, we exclusively in-licensed two patent portfolios from Ohio State Innovation Foundation and University College London, respectively. The Ohio State Innovation Foundation patent portfolio includes an international patent application relating to CARs directed to cancer marker CS1. The University College London patent portfolio includes patent applications relating to a polypeptide expressing the suicide gene RQR8, and uses thereof.

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.

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, 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, 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.

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 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.

Material Exclusive Licenses Granted to Cellectis

Licenses from Institut Pasteur

In 2000, we entered into three license agreements with L'Institut Pasteur, or Pasteur, pursuant to which we in-licensed a substantial portion of Pasteur's gene-editing patent portfolio. The details of these three license agreements are provided below.

In June 2000, we entered into an agreement with Pasteur, later amended in 2002, 2003, 2008, and 2013 (collectively, the "First June 2000 Agreement"), pursuant to which we were granted an exclusive, worldwide, royalty-bearing, sublicenseable license under certain patents and know-how owned by Pasteur, L'Université Pierre et Marie Curie, L'Institut Curie, and Le Centre National de Recherche Scientifique relating to certain meganucleases to use, manufacture, and sell products and to practice processes covered by such patents. The exclusivity of the license grant under the First June 2000 Agreement is subject to certain exploitation rights previously granted to third parties under the licensed patents for (i) the production of a specified enzyme, (ii) the use of a specified plasmid, and (iii) internal research.

In June 2000, we also entered into an agreement with Pasteur, later amended in 2003 (collectively, the "Second June 2000 Agreement"), acting on its own behalf and on the Boston Children Hospital's behalf, pursuant to which it granted to us an exclusive, worldwide, royalty-bearing, sublicenseable license under certain patents and know-how owned by Pasteur and the Boston Children's Hospital relating to certain chimeric endonucleases for chromosomal gene editing by homologous recombination in cells to use, manufacture, and sell products and to practice processes covered by such patents. The license granted under the Second June 2000 Agreement is non-exclusive, however, with respect to the licensed processes applied to human gene therapy. In the event that Pasteur has the possibility to grant exploitation rights for applications to human gene therapy, it must immediately inform us, and we may amend our agreement with Pasteur to obtain such exploitation rights. One of the licensed patents is under third party ex-parte reexamination.

The exclusivity of each of the licenses granted under the First June 2000 Agreement and the Second June 2000 Agreement is further contingent upon our continued diligence in designing, developing, and obtaining the required regulatory authorizations necessary to sell the respective licensed products and processes.

In October 2000, we entered into an agreement with Pasteur, later amended in 2003, 2004, 2005, and 2007 (collectively, the "October Agreement"), pursuant to which we obtained an exclusive, worldwide, royalty-bearing, sublicenseable license under certain patents and know-how owned by Pasteur relating to a method of homologous recombination to make, use, and sell products and to implement processes covered by such patents. The exclusivity of the license granted under the October Agreement is subject to a license granted to a third party under the licensed patents in the domain of genes that encode for Erythropoietin.

We may only grant sub-licenses under our Pasteur agreements with Pasteur's prior approval, which is deemed to have been given if Pasteur does not object to a proposed sub-license within a specified period of time from notice of the proposed sublicense and which may only be withheld for serious cause.

Pursuant to the terms of each of the First June 2000 Agreement and the Second June 2000 Agreement, we made cash payments to Pasteur in an aggregate amount of 600,000 French Francs for each agreement with respect to the entry into the agreement and the reimbursement of license fees. Pursuant to the terms of the October Agreement, we made cash payments to Pasteur in the aggregate amount of 500,000 French Francs with respect to the entry into the agreement and the reimbursement of license fees and 250,000 Euros in connection with the execution of amendments. Under each of the First June 2000 Agreement and the Second June 2000 Agreement, we are also required to pay Pasteur an ongoing royalty fee equal to a low- to mid-single digit percentage of our net income with respect to licensed products under the respective agreement. With respect to sublicenses granted under the First June 2000 Agreement and the Second June 2000 Agreement, we are also required to pay Pasteur a percentage of all payments received under such sublicenses, subject in certain cases to minimum payment amounts based on net revenues of the applicable sublicensee. Under the October Agreement, we are also required to pay Pasteur an ongoing royalty fee equal to a low-single digit percentage of our net income with respect to licensed products under the October Agreement. With respect to sublicenses granted under the October Agreement, we are required to pay Pasteur a tiered percentage of all compensation received by us during the applicable year under the sublicense agreement, subject in certain cases to minimum payment amounts based on net revenues of the applicable sublicensee.

The terms of each of our agreements with Pasteur will expire upon the expiration of the last-to-expire of the respective patents licensed to us pursuant to the applicable agreement. The last to expire patent under the First June 2000 Agreement has expired on February 2, 2016, and we expect the last to expire patent under the Second June 2000 Agreement to expire on February 3, 2020 and the last to expire patent under the October Agreement to expire on April 3, 2020. We and Pasteur may each terminate any of our agreements with Pasteur in the event of the other party's breach of an obligation under the applicable agreement, which remains uncured for 90 days following receipt of notice of such breach from the terminating party. Pasteur may immediately terminate such agreements if we challenge or contest the validity of any of the licensed patents under the respective agreement before a court or patents office. In addition, we and Pasteur may terminate any of the agreements, upon 60 days' prior notice, in connection with certain insolvency-related judicial proceedings instituted against the other party. Further, we have the right to terminate any of these agreements for any reason immediately upon notice to Pasteur.

License from Regents of the University of Minnesota

In January 2011, we entered into an exclusive license agreement with Regents of the University of Minnesota, or UMN. Pursuant to this agreement, as amended in 2012, 2014, and 2015 we and our affiliates were granted an exclusive, worldwide, royalty-bearing, sublicenseable license, under certain patents and patent applications owned by UMN, to make, use, sell, import, and otherwise dispose of products covered by the licensed patents, for all fields of use. These licensed patents relate to TALEN molecules and their use in gene editing. One of these licensed patents is under opposition proceeding in Europe. Pursuant to the agreement, we are required to achieve certain specified research- and sales-related milestones.

Pursuant to the terms of the agreement, we paid UMN an upfront license fee in the amount of $250,000 upon the effective date of the license agreement. We are also required to pay to UMN low-single digit percentage royalties on net sales of licensed products, and are subject to minimum annual royalties of $30,000 per year and an annual fee of $150,000 per year in the agricutural field due to UMN. We are also required to pay UMN a percentage of all revenues received by us under sublicenses. We are also required to pay UMN milestone payments up to a total of $290,000 in the aggregate upon the occurrence of specified events and to pay certain patent-related expenses incurred under the agreement for prosecuting and maintaining the licensed patents. If we undergo a change of control and wish to assign our rights and duties under the agreement, we will be required to pay UMN an additional transfer fee.

The license agreement will expire upon the expiration of the last to expire valid claim of the licensed patents. UMN may terminate the agreement upon advance written notice in the event of our insolvency or bankruptcy, and immediately upon written notice in the event that we challenge the validity or enforceability of any licensed patent in a court or other applicable authority. We and UMN may terminate the agreement by written notice in the event of the other party's breach that has not been cured within a specified number of days after receiving notice of such breach.

License from Ohio State Innovation Foundation

In October 2014, we entered into an exclusive license agreement with Ohio State Innovation Foundation. Pursuant to this agreement, we were granted an exclusive, worldwide, royalty-bearing, sublicenseable license under certain patents and patent applications owned by Ohio State Innovation Foundation to use, make, distribute, sell, lease, loan or import products or process covered by the licensed patents, for any and all activities relating to cancer immunotherapy. The licensed portfolio includes an international patent application relating to CAR directed to cancer marker CS1. Pursuant to the agreement, we must use diligence and commercially reasonable efforts to commercialize licensed products or processes, including achieving certain milestone events by specified deadlines, subject to our ability to extend such deadlines upon payment of certain fees.

Pursuant to the terms of the agreement, we paid Ohio State Innovation Foundation an upfront license fee in the amount of $100,000. We are required to pay an annual license maintenance fee of $20,000 from 2015 onward until our first sale of a licensed product. We are also required to pay to Ohio State Innovation Foundation low single-digit percentage royalties on net sales of licensed products and licensed processes by us and are subject to minimum annual royalties due to Ohio State Innovation Foundation of $100,000. We are also required to pay Ohio State Innovation Foundation a percentage of royalties paid to us by sublicensees. We are also required to pay Ohio State Innovation Foundation milestone payments up to a total of $1,950,000 in the aggregate upon the occurrence of certain development-related events prior to deadlines specified in the agreement.

Unless earlier terminated, the license agreement will expire upon the expiration of the last to expire valid claim of the licensed patents, which we expect will be on May 2, 2034. We may terminate the agreement at our option by giving 90 days' written notice. Ohio State Innovation Foundation may immediately terminate the agreement, any part of the licensed patent rights or the agreement's exclusivity if we fail to make required payments under the agreement and such breach continues for sixty days

after delivery of written notice from Ohio State Innovation Foundation or if we breach any other provision of the agreement and fail to cure such breach within 60 days after delivery of written notice from Ohio State Innovation Foundation. Ohio State Innovation Foundation may also terminate the agreement if we or our affiliate initiates any proceeding or action challenging the validity, enforceability or scope of any of the patent rights or assists a third party in such a proceeding or action. The agreement automatically terminates if we file for bankruptcy or become bankrupt or insolvent, our board of directors elects to liquidate our assets or dissolve our business, we cease business operations, we make an assignment for the benefit of creditors or if we are otherwise placed in the hands of a receiver, assignee or trustee, whether by our voluntary act or otherwise.

Other Exclusive Licenses Granted to Cellectis

With respect to our plant sciences business, we have filed nine patent applications in connection with new soybean, tobacco and potato traits. These new traits have been obtained mainly by using TALEN, which is protected by the UMN and the Cellectis TALEN patent portfolios.

License Agreements from Regents of the University of Minnesota

In December 2014, Calyxt entered into an exclusive license with the Regents of the University of Minnesota, or UMN, pursuant to which Calyxt was granted an exclusive, worldwide, sublicensable license under a specified patent application owned by UMN relating to the use of the CRISPR-Cas9 technology to make use, and commercialize products covered by the licensed patents in any field of use. Pursuant to the terms of the agreement, Calyxt must use commercially reasonable efforts to commercialize the licensed technology and to manufacture, offer to sell, and sell licensed products as soon as practicable and to maximize sales. Calyxt must also achieve certain sales- and patent-related milestones.

Pursuant to the terms of the agreement, Calyxt paid UMN an upfront license fee payment in the amount of $130,000 in connection with entering into the agreement. Calyxt is also required to pay UMN a tiered annual fee that increases from $20,000 to $225,000 based on the occurrence of certain specified events, including the grant of a sublicense to a third party, as well as patent-related expenses incurred under the agreement in prosecuting and maintaining the licensed patents. Calyxt is also required to pay UMN a percentage of all revenues received by it under sublicenses. If Calyxt undergoes a change of control and wishes to assign all of its rights and duties under the agreement, Calyxt will have to pay UMN a specified transfer fee.

Unless earlier terminated, the agreement will continue in effect until no licensed patent is active and until no licensed patent application is pending, which we expect will be on March 24, 2034. UMN may terminate the agreement for Calyxt's uncured breach of the agreement upon 90 days' prior written notice, or 60 days' prior written notice if the breach relates to Calyxt's payment obligations under the agreement. UMN may also terminate the agreement, upon 10 days' prior written notice, if Calyxt files for bankruptcy or becomes insolvent. UMN may also immediately terminate the agreement if Calyxt or its agents or representatives commences or maintains an action in any court or before any governmental agency asserting or alleging the invalidity or unenforceability of the licensed patent rights. Calyxt may terminate the agreement for UMN's uncured breach of the agreement upon 90 days' prior written notice. Calyxt may also terminate the agreement at any time upon 60 days' prior written notice.

In January 2015, Calyxt entered into a second exclusive license with UMN, pursuant to which Calyxt was granted an exclusive, worldwide, sublicensable license under specified patent applications owned by UMN relating to gene targeting technology. Pursuant to the terms of the agreement, Calyxt must use commercially reasonable efforts to commercialize the licensed technology and to manufacture, offer to sell, and sell licensed products as soon as practicable and to maximize sales. Calyxt must also achieve certain sales- and patent-related milestones.

Pursuant to the terms of this second agreement, Calyxt paid UMN an upfront fee in the amount of $20,000 in connection with entering into the agreement. Calyxt is also required to pay UMN a tiered annual fee that increases from $5,000 to $25,000 based on the occurrence of certain specified events, as well as patent-related expenses incurred under the agreement in prosecuting and maintaining the licensed patents. Calyxt is also required to pay UMN an upfront fee upon granting of a sublicense and a percentage of all revenues received by it under such sublicenses. If Calyxt undergoes a change of control and wishes to assign all of its rights and duties under the agreement, Calyxt will have to pay UMN a specified transfer fee.

Unless earlier terminated, this second agreement will continue in effect until no licensed patent is active and until no licensed patent application is pending, which we expect will be June 19, 2033. UMN may terminate the agreement for Calyxt's uncured breach of the agreement upon 90 days' prior written notice, or 60 days' prior written notice if the breach relates to Calyxt's payment obligations under the agreement. UMN may also terminate the agreement, upon 10 days' prior written notice, if Calyxt files for bankruptcy or becomes insolvent. UMN may also immediately terminate the agreement if Calyxt or its agents or representatives commences or maintains an action in any court or before any governmental agency asserting or alleging the invalidity or unenforceability of the licensed patent rights. Calyxt may terminate the agreement for UMN's uncured breach of the agreement upon 90 days' prior written notice. Calyxt may also terminate the agreement at any time upon 60 days' prior written notice.

Other Exclusive License Granted to Calyxt

In December 2015, Calyxt entered into a Research Funding and License Option Agreement with Plant Bioscience Limited, or PBL, and Institute of Genetics and Development Biology Chinese Academy of Sciences, or IGDB, pursuant to which Calyxt commits to financially support development of new traits by IGBD, including without limitation a trait providing resistance to powdery mildew. Pursuant to this agreement, Calyxt has an option to obtain an exclusive license on such new traits and such option is exercisable at any time. More recently, in February 2017, Calyxt entered into a Technology Framework Agreement with PBL in which Calyxt received an option to obtain an exclusive license to additional new crop traits.

Our Intellectual Property Strategy

We believe our current layered patent estate, together with our efforts to develop and patent next generation technologies, provides us with substantial intellectual property protection. However, the area of patent and other intellectual property rights in biotechnology is an evolving one with many risks and uncertainties.

Our strategy is also to develop and obtain additional intellectual property covering innovative manufacturing processes and methods for genetically engineering T-cells expressing new constructs and for genetically engineering plants expressing new traits. To support this effort, we have established expertise and development capabilities focused in the areas of pre-clinical research and development, manufacturing and manufacturing process scale-up, quality control, quality assurance, regulatory affairs and clinical trial design and implementation. Thus, we expect to file additional patent applications to expand this layer of our intellectual property estate.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the date of filing of the first non-provisional application to which priority is claimed. 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. The term of a patent that covers an FDA-approved drug may also be eligible for a patent term restoration of up to five years under the Hatch-Waxman Act, which is designed to compensate for the patent term lost during the FDA regulatory review process. The length of the patent term restoration is calculated based on the length of time the drug is under regulatory review. A patent term restoration under the Hatch-Waxman Act cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be restored. Moreover, a patent can only be restored once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved drug. When possible, depending upon the length of clinical trials and other factors involved in the filing of a BLA, we expect to apply for patent term extensions for patents covering our product candidates and their methods of use.

Our commercial success may depend in part on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents; preserve the confidentiality of our trade secrets; and operate without infringing the valid enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell or importing our products may depend on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our commercial products and methods of manufacturing the same.

We may rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Competition

The biotechnology and pharmaceutical industries put significant resources toward developing novel and proprietary therapies for the treatment of cancer, which often incorporate novel technologies and incorporate valuable intellectual property. We compete with companies in the immunotherapy space, as well as companies developing novel targeted therapies for cancer. In addition, our products will compete with existing standards of care for the diseases that our product candidates target. We anticipate that we will face intense and increasing competition from many different sources, including new and established biotechnology and pharmaceutical companies, academic research institutions, governmental agencies and public and private research institutions.

Our competitors include:

- Gene-editing space: CRISPR Therapeutics, Inc., Editas Medicine, Inc., Intellia Therapeutics, Inc., Caribou Biosciences, Precision BioSciences, Inc. and Sangamo BioSciences, Inc.
- CAR space: Bellicum Pharmaceuticals, Inc., Juno Therapeutics, Inc., Celgene Corporation (in collaboration with bluebird bio, Inc.), Ziopharm Oncology (in collaboration with Intrexon, Inc.), Kite Pharma, Inc. (in collaboration with Amgen), Novartis AG and Johnson & Johnson (in collaboration with Transposagen), and Autolus Limited.
- Cell-therapy space: Adaptimmune Ltd, Lion Biotechnologies, Inc., Unum Therapeutics, Inc., NantKwest, Inc., Celyad S.A., Atara Biotherapeutics, Inc., and Immunocore Ltd.
- Agricultural biotechnology space:
    - Companies developing plants with enhanced properties: Arcadia Biosciences, Inc., Chromatin Inc., Cibus Global, Ltd., Evogene Ltd., Danzinger Innovation Ltd., Keygene N.V. and Precision PlantSciences, Inc.
    - Major seed/agrochemical companies: BASF SE, Bayer AG, DuPont Pioneer, Groupe Limagrain Holding SA, Monsanto Co., Syngenta AG, Takii & Company, LTD, The Dow Chemical Co. and The J.R. Simplot Co.

Due to the promising therapeutic effect of T-cell therapies in clinical exploratory trials, we anticipate substantial direct competition from other existing and new competitors developing these therapies. In particular, we expect to compete with therapies with tumor infiltrating lymphocytes, or TILs, that are naturally occurring tumor-reactive T-cells harvested, propagated *ex vivo* and re-infused into patients. We also expect to compete with therapies using genetically engineered T-cells, rendered reactive against tumor-associated antigens prior to their administration to patients. However, we believe that most of our competitors are currently focused on autologous therapies, and we believe that we are the most advanced company developing the allogeneic CAR-T cell approach. In addition, we differentiate ourselves by using our gene-editing capabilities to add specific features to our T-cell products, such as cancer drug resistance or resistance to checkpoint inhibition.

We also face competition from non-cell based treatments offered by companies such as Amgen Inc., AstraZeneca plc, Bristol-Myers Squibb Company, Incyte Corporation, Merck & Co., Inc., and F. Hoffman-La Roche AG. Immunotherapy is further being pursued by several biotech companies as well as by large-cap pharmaceuticals. Many of our current or potential competitors, either alone or with their collaboration partners, have significantly greater financial resources and expertise in research and development, manufacturing, pre-clinical testing, conducting clinical trials, and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market or make our development more complicated. The key competitive factors affecting the success of all of our programs are likely to be their efficacy, safety, and convenience.

Government Regulation and Product Approval

Government Regulation of Biological Products

We are subject to extensive regulation. We expect our cell product candidates to be regulated as biologics. Governmental authorities, including the FDA and comparable regulatory authorities in other countries, regulate the design, development, production / manufacturing, testing, safety, efficacy, labeling, storage, record-keeping, advertising, promotion and marketing of pharmaceutical products, including biologics. Non-compliance with applicable requirements can result in fines and other judicially imposed sanctions, including product seizures, import restrictions, injunctive actions and criminal prosecutions of both companies and individuals. In addition, administrative remedies can involve requests to recall violative products; the refusal of the government to enter into supply contracts; or the refusal to approve pending product approval applications until manufacturing or other alleged deficiencies are brought into compliance. The FDA and similar authorities around the world also have the authority to cause the withdrawal of approval of a marketed product, to impose labeling restrictions or to require that we redo some non-clinical and/or clinical studies.

The FDA categorizes human cell- or tissue-based products as either minimally manipulated or more than minimally manipulated, and has determined that more than minimally manipulated products require clinical trials to demonstrate product safety and efficacy and the submission of a BLA for marketing authorization.

Our product candidates must be approved by the FDA before they may be legally marketed in the United States and by the appropriate foreign regulatory agencies before they may be legally marketed in foreign countries. Generally, our activities in foreign countries will be subject to regulation that is similar in nature and scope as that imposed in the United States, although there can be important differences. Additionally, some significant aspects of regulation in Europe are addressed in a centralized way, but country-specific regulation remains essential in many respects. The process for obtaining regulatory marketing approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

Ethical, social and legal concerns about gene therapy, gene modifications, genetic testing and genetic research could result in additional regulations restricting or prohibiting the processes we may use. Federal and state agencies, congressional committees and foreign governments have expressed interest in further regulating biotechnology. More restrictive regulations or claims that our products are unsafe or pose a hazard could prevent us from commercializing any products in one or more jurisdictions. New government requirements may be established that could delay or prevent regulatory approval of our product candidates under development. It is impossible to predict whether legislative changes will be enacted, regulations, policies or guidance changed, or interpretations by agencies or courts changed, or what the impact of such changes, if any, may be.

Set forth below is a description of the process of obtaining U.S. government approval for biological product development. Similar processes apply in other jurisdictions.

U.S. Biological Product Development

In the United States, the FDA regulates biologics under the Federal Food, Drug, and Cosmetic Act, or FDCA, and the Public Health Service Act, or PHSA, and their implementing regulations. Biologics are also subject to other federal, state and local statutes and regulations. The process required by the FDA before biologic product candidates may be marketed in the United States and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, untitled or warning letters, product recall requests or withdrawals from the market, labeling restrictions, non-clinical and/or clinical studies to be performed again, product seizures, total or partial suspension of production or distribution injunctions, import restrictions, fines, refusals of government contracts, restitution, disgorgement, or civil or criminal penalties for both companies and individuals. Any agency or judicial enforcement action could have a material adverse effect on us.

Our biological product candidates must be approved by the FDA through the Biologics License Application, or BLA, process before they may be legally marketed in the United States. The process required by the FDA before a biologic may be marketed in the United States generally involves the following:

- completion of extensive nonclinical, sometimes referred to as pre-clinical laboratory tests, pre-clinical animal studies and formulation studies in accordance with applicable regulations, including the FDA's GLP regulations;
- production and testing of clinical products according to the current Good Manufacturing Practices (cGMP) and possible FDA product specific requirements

- submission to the FDA of an IND, which must become effective before clinical trials may begin and must be updated at least annually;
- performance of adequate and well-controlled clinical trials in accordance with applicable IND and other clinical trial-related regulations, sometimes referred to as Good Clinical Practices, or GCPs, to establish the safety and efficacy of the proposed product candidate for each proposed indication;
- submission to the FDA of a BLA;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities where the active pharmaceutical ingredient, or API, and finished product are manufactured to assess compliance with the IND/BLA and FDA's cGMP requirements to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality, purity and potency;
- FDA review and approval of the BLA prior to any commercial marketing or sale of the product in the United States.

The data required to support a BLA is generated in three distinct development stages: manufacturing, pre-clinical and clinical. The manufacturing development stage generally involves laboratory evaluations of drug chemistry and biology properties, formulation and stability, the pre-clinical stage generally involves studies to evaluate pharmacology and toxicity in animals, which support subsequent clinical testing. The conduct of the manufacturing and pre-clinical studies must comply with federal regulations, including GMPs and GLPs.

Where a trial involving the deliberate transfer of (1) recombinant DNA or (2) DNA or RNA derived from recombinant DNA into one or more human research participants (including recombinant DNA molecules, and/or organisms and viruses containing recombinant DNA molecules) (a gene therapy trial) is conducted at, or sponsored by, institutions receiving NIH funding for recombinant DNA research, a protocol and related documentation is submitted to and the trial is registered with the NIH Office of Biotechnology Activities, or OBA, prior to the submission of an IND to the FDA. This is done pursuant to the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules, or NIH Guidelines. Compliance with the NIH Guidelines is mandatory for investigators at institutions receiving NIH funds for research involving recombinant DNA, however many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them. The NIH is responsible for convening the RAC, a federal advisory committee, which discusses protocols that raise novel or particularly important scientific, safety or ethical considerations at one of its quarterly public meetings. The OBA will notify the FDA of the RAC's decision regarding the necessity for full public review of a gene therapy protocol. RAC proceedings and reports are posted to the OBA web site and may be accessed by the public.

The sponsor must submit the results of the pre-clinical studies, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of an IND before any clinical testing may proceed. An IND is a request for authorization from the FDA to administer an investigational drug product to humans. The IND must become effective before clinical trials may begin. The IND is automatically approved 30 days after receipt by the FDA, unless during that time the FDA raises concerns or questions regarding the proposed clinical trials. In such a case, the FDA may place the IND on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. With gene therapy protocols, if the FDA allows the IND to proceed, and the RAC decides that full public review of the protocol is warranted but did not take place before the IND review is complete, the FDA will request at the completion of its IND review that sponsors delay initiation of the protocol until after completion of the RAC review process. The FDA may also impose clinical holds on a product candidate at any time before or during clinical trials due to safety concerns or non-compliance. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that could cause the trial to be suspended or terminated.

Before the IND becomes active, the Clinical Protocol will also need to be approved by the relevant Institutional Review Boards (IRBs) and Institutional Biosafety Committees (IBCs), which are the cornerstone of institutional oversight of recombinant DNA clinical research.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety and assess efficacy. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Further, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed.

All gene therapy experiments and clinical trials are also subject to review and oversight by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research conducted at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment.

There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries. Sponsors of clinical trials of FDA-regulated products, including biologics, are required to register and disclose certain clinical trial information, which is publicly available at www.clinicaltrials.gov. Information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed until the new product or new indication being studied has been approved.

Human clinical trials are typically conducted in three sequential phases. However, these phases may overlap or be combined:

- *Phase I.* The biological product candidate is initially introduced into healthy human subjects and tested for safety. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, if pre-clinical testing warrants, the initial human testing may be conducted in patients with the condition of interest.
- *Phase II.* The biological product candidate is evaluated in a limited patient population with the condition of interest to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.
- *Phase III.* Clinical trials are undertaken to further evaluate dosage, clinical efficacy, potency and safety in an expanded patient population with the condition of interest at geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk to benefit ratio of the product and provide an adequate basis for approval, including appropriate product labeling.

Post-approval clinical trials, sometimes referred to as “Phase 4” clinical trials, may be conducted after initial marketing approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up. The FDA recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by ten years of annual queries, either in person or by questionnaire, of study subjects.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA, the NIH, IRB and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or *in vitro* testing that suggest a significant risk for human patients, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor’s initial receipt of the information.

Phase I, Phase II and Phase III clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor or its data safety monitoring board may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk, including risks inferred from other unrelated immunotherapy trials. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB’s requirements or if the biological product has been associated with unexpected serious harm to patients.

Human immunotherapy products and gene therapy products are a new category of therapeutics. Because this is a relatively new and expanding area of novel therapeutic interventions, there can be no assurance as to the length of the trial period, the number of patients the FDA will require to be enrolled in the trials in order to establish the safety, efficacy, purity and potency of immunotherapy products, or that the data generated in these trials will be acceptable to the FDA to support marketing approval.

Concurrently with clinical trials, companies usually complete additional animal studies and must also develop additional information about the biological and physical characteristics of the biological product as well as finalize a process for production and testing the product in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents with use of biological products, the PHSA emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing

quality batches of the product candidate and, among other things, the sponsor must develop and validate methods for testing the identity, strength, quality, potency and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

U.S. Review and Approval Processes for Biological Product Candidates

After the completion of clinical trials, non-clinical and manufacturing activities of a biological product candidate, FDA approval of a BLA must be obtained before commercial marketing of the biological product. The BLA must include results of product development, laboratory and animal studies, human trials, information on the manufacture and composition of the product, proposed labeling and other relevant information. The approval processes require substantial time and effort and there can be no assurance that the FDA will accept the BLA for filing and, even if filed, that any approval will be granted on a timely basis, if at all.

Under the Prescription Drug User Fee Act, or PDUFA, as amended, each BLA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. PDUFA also imposes an annual product fee for biological products and an annual establishment fee on facilities used to manufacture prescription biological products. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the agency accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review of the BLA. The FDA reviews the BLA to determine, among other things, whether the proposed product is safe and potent, or effective, for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with cGMP regulations to assure and preserve the product's identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biological products or biological products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. During the biological product approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy, or REMS, is necessary to assure the safe use of the biological product candidate. A REMS may be imposed to ensure safe use of the drug, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS. The FDA will not approve a BLA without a REMS, if required.

Before approving a BLA, the FDA will inspect the facilities at which the product candidate is manufactured. The FDA will not approve the product candidate unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. For cell based immunotherapy products, the FDA also will not approve the product if the manufacturer is not in compliance with the current good tissue practice, or GTP requirements, to the extent applicable. These requirements are set out in FDA regulations and guidance documents and govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue based products, or HCT/Ps, which are human cells or tissue intended for use in implantation, transplantation, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing. Additionally, before approving a BLA, the FDA may inspect one or more clinical sites to assure that the clinical trials were conducted in compliance with IND trial requirements and GCP requirements. To assure cGMP, GTP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production, and quality control.

Notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the BLA does not satisfy its regulatory criteria for approval and deny approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data. If the agency decides not to approve the BLA in its submitted form, the FDA will issue a complete response letter that describes all of the specific deficiencies in the BLA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the application.

If a product candidate receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product.

Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a REMS, or otherwise limit the scope of any approval. In addition, the FDA may require post marketing clinical trials, sometimes referred to as Phase 4 clinical trials, or additional studies like safety studies, designed to further assess a biological product's safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized.

In addition, unless a waiver is granted, under the Pediatric Research Equity Act, or PREA, a BLA or supplement to a BLA must contain data to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The Food and Drug Administration Safety and Innovation Act, or FDASIA, requires that a sponsor who is planning to submit a marketing application for a drug or biological product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, within sixty days after an end-of-Phase II meeting or as may be agreed between the sponsor and FDA. The initial PSP must include, among other things, an outline of the pediatric study or studies that the sponsor plans to conduct, including to the extent practicable study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from nonclinical studies, early phase clinical trials, and/or other clinical development programs. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, PREA does not apply to any product for an indication for which orphan designation has been granted. However, if only one indication for a product has orphan designation, a pediatric assessment may still be required for any applications to market that same product for the non-orphan indication(s).

One of the performance goals agreed to by the FDA under the PDUFA is to review 90% of standard BLAs in 10 months and 90% of priority BLAs in six months, whereupon a review decision is to be made. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs and its review goals are subject to change from time to time. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the BLA sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

Orphan Drug Designation

Under the Orphan Drug Act, a sponsor may request and the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or if it affects more than 200,000 individuals in the United States and there is no reasonable expectation that the cost of developing and making available in the United States drug or biologic for this type of disease or condition will be recovered from sales in the United States for that product. Orphan drug designation must be requested before submitting a BLA. After the FDA grants orphan drug designation, the generic and trade name, if any, of the drug or biologic and the rare disease or condition for which orphan-drug designation was granted are disclosed publicly by the FDA. The orphan drug designation does not convey any advantage during, or shorten the duration of, the regulatory review or approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same drug or biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the BLA application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. Orphan exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval of the same drug or biologic as defined by the FDA or if our product candidate is determined to be contained within the competitor's product for the same indication or disease. In addition, exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

The criteria for designating an "orphan medicinal product" in the EU are similar to those in the United States. Such designation can be requested in the case of products that are intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition and either (a) such condition affects no more than five in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from orphan status, would unlikely generate sufficient return in the EU to justify the necessary investment. Moreover, in order to obtain orphan designation it is necessary to demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the EU, or if such a method exists, the product will be of significant benefit to those affected by the condition.

In the EU, orphan medicinal products are eligible for financial incentives as well as specific regulatory assistance and scientific advice. Products receiving orphan status in the EU can receive ten years of market exclusivity, during which time no similar medicinal product for the same indication may be placed on the market. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies. No extension to any supplementary protection certificate can be granted on the basis of pediatric studies for orphan indications.

However, the 10-year market exclusivity may be reduced to six years in certain circumstances, including for example if, at the end of the fifth year, it is established that the product is sufficiently profitable not to justify maintenance of market exclusivity.

There can be no assurance that we will receive orphan drug designation for any product candidates in the United States, in the EU or in any other market. There can be no assurance that an Orphan exclusivity from a competitor could not block the approval of one of our products for a certain period of time, in the United States, in the EU or in any other market.

Expedited Development and Review Programs

The FDA has a Fast Track program that is intended to expedite or facilitate the process for reviewing new drugs and biological products that meet certain criteria. Specifically, new products are eligible for Fast Track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request the FDA to designate the drug or biologic as a Fast Track product candidate at any time during the clinical development of the product candidate. Unique to a Fast Track product, the FDA may consider the review of sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA.

Any product candidate, submitted to the FDA for approval, including a product with a Fast Track designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. A product candidate is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new product candidate designated for priority review in an effort to facilitate the review, and aims to review such applications within six months as opposed to ten months for standard review. Additionally, a product candidate may be eligible for accelerated approval. Product candidates studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval which means that they may be approved on the basis of adequate and well-controlled clinical trials establishing that the product candidate has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on the basis of an effect on a clinical endpoint other than irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug or biological product candidate receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast Track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Breakthrough Therapy Designation

Under the provisions of the Food and Drug Administration Safety and Innovation Act, or FDASIA, enacted in 2012, the FDA established a Breakthrough Therapy Designation which is intended to expedite the development and review of products that treat serious or life-threatening conditions. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates

that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the features of Fast Track designation, as well as more intensive FDA interaction and guidance. The Breakthrough Therapy Designation is a distinct status from both accelerated approval and priority review, but these can also be granted to the same product candidate if the relevant criteria are met.

The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy. All requests for breakthrough therapy designation will be reviewed within 60 days of receipt, and FDA will either grant or deny the request.

Where applicable, we plan to request Fast Track and/or Breakthrough Therapy Designation for our product candidates. Even if we receive one of these designations for our product candidates, the FDA may later decide that our product candidates no longer meets the conditions for qualification. In addition, these designations may not provide us with a material commercial advantage.

Post-Approval Requirements

Maintaining compliance with applicable federal, state, and local statutes and regulations requires the expenditure of substantial time and financial resources. Rigorous and extensive FDA regulation of biological products continues after approval, particularly with respect to cGMP and pharmacovigilance requirements as well as post marketing commitments. Any products for which we receive FDA approval will be subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse experiences with the product, providing the FDA with updated safety and efficacy information, product sampling and distribution requirements, and complying with FDA promotion and advertising requirements, which include, among others, standards for direct-to-consumer advertising, restrictions on promoting products for uses or in patient populations that are not described in the product's approved uses (known as off-label use), limitations on industry-sponsored scientific and educational activities, and requirements for promotional activities involving the internet. Although physicians may prescribe legally available products for off-label use that they deem to be appropriate in their professional medical judgment, manufacturers may not market or promote such off-label uses.

Other post-approval requirements applicable to biological products include reporting of cGMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record-keeping requirements, reporting of adverse effects, reporting updated safety and efficacy information, and complying with electronic record and signature requirements. After a BLA is approved, the product may also be subject to official lot release. In this case, as part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot. The FDA also may perform certain confirmatory tests on lots of some products before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products.

In addition, we and any third-party manufacturers of our products will be required to comply with applicable requirements in the cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products in accordance with cGMP regulations. cGMP regulations require among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Manufacturers and other entities involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and certain state agencies, and are subject to periodic announced and unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved BLA, including, among other things, recall or withdrawal of the product from the market. In addition, changes to the manufacturing process are strictly regulated, and depending on the significance of the change, may require prior FDA approval before being implemented. Other types of changes to the approved product, such as adding new indications and claims, are also subject to further FDA review and approval.

The FDA also may require post-marketing studies, known as Phase 4 studies, and surveillance to monitor the effects of an approved product. Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement, warning letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

U.S. Patent Term Restoration and Marketing Exclusivity

The Biologics Price Competition and Innovation Act, or BPCIA, amended the PHSA to authorize the FDA to approve similar versions of innovative biologics, commonly known as biosimilars. A competitor seeking approval of a biosimilar must file an application to establish its molecule as highly similar to an approved innovator biologic, among other requirements. The BPCIA, however, bars the FDA from approving biosimilar applications for 12 years after an innovator biological product receives initial marketing approval. This 12-year period of data exclusivity may be extended by six months, for a total of 12.5 years, if the FDA requests that the innovator company conduct pediatric clinical investigations of the product.

The first biological product submitted under the abbreviated approval pathway that is determined to be interchangeable with the reference product has exclusivity against other biologics submitting applications under the abbreviated approval pathway for the lesser of (1) one year after the first commercial marketing, (2) 18 months after approval if there is no legal challenge, (3) 18 months after the resolution in the applicant's favor of a lawsuit challenging the biologic's patents if an application has been submitted, or (4) 42 months after the application has been approved if a lawsuit is ongoing within the 42-month period.

Depending upon the timing, duration and specifics of the FDA approval of the use of our product candidates, some of our U.S. patents, if granted, may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Act. The Hatch-Waxman Act permits a patent restoration term of up to five years, as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of a BLA plus the time between the submission date of a BLA and the approval of that application. Only one patent applicable to an approved product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future as applicable, we may apply for restoration of patent term for one of our currently owned or licensed patents seeking restored patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant BLA.

Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which attaches to and runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial.

Other U.S. Healthcare Laws and Compliance Requirements

In the United States, our activities are subject to regulation by various federal, state and local authorities in addition to the FDA, including but not limited to, the Centers for Medicare and Medicaid Services, or CMS, other divisions of the U.S. Department of Health and Human Services (e.g., the Office of Inspector General), the U.S. Department of Justice, or DOJ, and individual U.S. Attorney offices within the DOJ, and state and local governments. For example, sales, marketing and scientific/educational grant programs must comply with the anti-fraud and abuse provisions of the Social Security Act, the false claims laws, the privacy provisions of the Health Insurance Portability and Accountability Act, or HIPAA, and similar state laws, each as amended.

The federal Anti-Kickback Statute prohibits, among other things, any person or entity, from knowingly and willfully offering, paying, soliciting or receiving any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term remuneration has been interpreted broadly to include anything of value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. The exceptions and safe harbors are drawn narrowly and practices that involve remuneration that may be alleged to be intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Our practices may not in all cases meet all of the criteria for protection under a statutory exception or regulatory safe harbor.

Additionally, the intent standard under the Anti-Kickback Statute was amended by the ACA to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the ACA codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act (discussed below).

The civil monetary penalties statute imposes penalties against any person or entity who, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

The federal False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to, or approval by, the federal government or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes "any request or demand" for money or property presented to the U.S. government. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies' marketing of the product for unapproved, and thus non-reimbursable, uses.

HIPAA created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud or to obtain, by means of false or fraudulent pretenses, representations or promises, any money or property owned by, or under the control or custody of, any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up by trick, scheme or device, a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Also, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

We may also be subject to data privacy and security regulations by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, imposes requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to business associates independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions.

In addition, state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Additionally, the federal Physician Payments Sunshine Act, enacted as part of the ACA, and its implementing regulations, require certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report information related to certain payments or other transfers of value made or distributed to physicians and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually certain ownership and investment interests held by physicians and their immediate family members.

In order to distribute products commercially, we will need to comply with state laws that require the registration of manufacturers and wholesale distributors of drug and biological products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and tracing product as it moves through the distribution chain. Several states have enacted legislation requiring pharmaceutical and biotechnology companies to establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales representatives, as well as to prohibit pharmacies and other healthcare entities from providing certain physician prescribing data to pharmaceutical and biotechnology companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are also potentially subject to federal and state consumer protection and unfair competition laws.

If our operations are found to be in violation of any of the federal and state healthcare laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including without limitation, civil, criminal and/or administrative penalties, damages, fines, disgorgement, exclusion from participation in government programs, such as Medicare and Medicaid, injunctions, private "*qui tam*" actions brought by individual whistleblowers in the name of the government, or refusal to allow us to enter into government contracts, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Coverage, Pricing and Reimbursement

Sales of our products will depend, in part, on the extent to which our products, if approved, will be covered and reimbursed by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing reimbursements for medical products and services. The process for determining whether a third-party payor will provide coverage for a drug product typically is separate from the process for setting the price of a drug product or for establishing the reimbursement rate that a payor will pay for the drug product once coverage is approved. Third-party payors may limit coverage to specific drug products on an approved list, also known as a formulary, which might not include all of the approved drugs for a particular indication.

In order to secure coverage and reimbursement for any product candidate that might be approved for sale, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product candidate, in addition to the costs required to obtain FDA or other comparable regulatory approvals. Whether or not we conduct such studies, our product candidates may not be considered medically necessary or cost-effective. A third-party payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Even if coverage is obtained from third party payors, reimbursement may not be sufficient to enable us to maintain price levels high enough to realize an appropriate return on our investment in product development.

The containment of healthcare costs has become a priority of federal, state and foreign governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Similar policies and laws have been adopted by many EU Member States. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our product candidate or a decision by a third-party payor to not cover our product candidate could reduce physician usage of the product candidate and have a material adverse effect on our sales, results of operations and financial condition.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its Member States to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A Member State may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. For example, in France, effective access to the market assumes that our future products will be supported by the hospital (through an agreement for local communities) or reimbursed by social security. The price of medications is negotiated with the Economic Committee for Health Products, or CEPS. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our product candidates. Historically, products launched in the EU do not follow price structures of the United States and generally tend to be significantly lower.

Healthcare Reform and Subsequent Legislation

In March 2010, President Obama enacted the ACA, which has the potential to substantially change healthcare financing and delivery by both governmental and private insurers, and significantly impact the pharmaceutical and biotechnology industry. The ACA will impact existing government healthcare programs and will result in the development of new programs.

Among the ACA's provisions of importance to the pharmaceutical and biotechnology industries, in addition to those otherwise described above, are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;

- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively and a cap on the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

We anticipate that, absent to further legislative changes, the ACA will result in additional downward pressure on coverage and the price that we receive for any approved product in the United States, and could seriously harm our business. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our product candidates, if approved. In addition, it is possible that there will be further legislation or regulation that could change parts of the ACA that affect public and private healthcare coverage. Those changes could harm our business, financial condition, and results of operations.

Other legislative changes have been proposed and adopted in the United States since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of 2% per fiscal year, which started in April 2013. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, also reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. We expect that additional federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, and in turn could significantly reduce the projected value of certain development projects and reduce our profitability.

Additional Regulation

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservancy and Recovery Act and the Toxic Substances Control Act, affect our business. These and other laws govern our use, handling and disposal of various biological, chemical and radioactive substances used in, and wastes generated by, our operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. We believe that we are in material compliance with applicable environmental laws and that continued compliance therewith will not have a material adverse effect on our business. We cannot predict, however, how changes in these laws may affect our future operations.

European Union Drug Development

In the EU, our future product candidates may also be subject to extensive regulatory requirements. As in the United States, medicinal products can only be marketed if a marketing authorization from the competent regulatory agencies has been obtained.

Similar to the United States, the various phases of pre-clinical and clinical research in the European Union are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the EU clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the EU, the EU Member States have transposed and applied the provisions of the Directive differently. This has led to significant variations in the Member State regimes. To improve the current system, a new Regulation No. 536/2014 on clinical trials on medicinal product candidates for human use, which will repeal Directive 2001/20/EC, was adopted on April 16, 2014 and published in the European Official Journal on May 27, 2014. The new Regulation aims at harmonizing and streamlining the clinical trials authorization process,

simplifying adverse event reporting procedures, improving the supervision of clinical trials, and increasing their transparency. The new Regulation entered into force on June 16, 2014 and was set to apply not earlier than May 28, 2016. Based on announcements of the European Medicines Agency, it is now expected that the mentioned Regulation will not enter into force before October 2018. Until then the Clinical Trials Directive 2001/20/EC will continue to apply. In addition, the transitional provisions of the new Regulation offer, under certain conditions, the clinical trial sponsors the possibility to choose between the requirements of the Directive and the Regulation for a limited amount of time.

Under the current regime, before a clinical trial can be initiated it must be approved in each of the EU Member States where the trial is to be conducted by two distinct sets of bodies: the National Competent Authority, or NCA, and one or more Ethics Committees, or ECs. Under the current regime all suspected unexpected serious adverse reactions, or SUSARs, to the investigational product that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred as well as in the European safety database, EudraVigilance.

European Union Drug Review and Approval

In the EU, medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA. The same rules also apply in the EFTA Member States (Norway, Iceland and Liechtenstein). There are two types of marketing authorizations:

The Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use, or CHMP, of the European Medicines Agency, or EMA, and which is valid throughout the entire territory of the EU. The Centralized Procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products, and medicinal products containing a new active substance indicated for the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and viral diseases. The Centralized Procedure is also mandatory for so-called Advance Therapy Medicinal Products (or ATMPs). ATMPs comprise gene therapy, somatic cell and tissue engineered products. In this regard, on May 28, 2014, the EMA issued a recommendation that Cellectis' UCART19 be considered a gene therapy product under Regulation (EC) No 1394/2007 on ATMPs. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU. Under the Centralized Procedure, the CHMP serves as the scientific committee that renders opinions about the safety, efficacy and quality of human products on behalf of the EMA. The CHMP is composed of experts nominated by each Member State's national drug authority, with one of them appointed to act as Rapporteur for the co-ordination of the evaluation with the possible assistance of a further member of the Committee acting as a Co-Rapporteur. The CHMP has 210 days to adopt an opinion as to whether a marketing authorization should be granted. The process usually takes longer as additional information is requested, which triggers clock-stops in the procedural timelines. Based on the CHMP's opinion the European Commission will adopt a decision on the granting of the marketing authorization. In case of ATMPs, the EMA's Committee for Advanced Therapies, a multidisciplinary committee of experts on ATMPs, will prepare a draft opinion which will be submitted to the CHMP before the latter adopts its final opinion.

Under the above described procedure, before granting the MA, the EMA makes an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

In the EU, new products authorized for marketing (i.e., reference products) qualify for eight years of data exclusivity and an additional two years of market exclusivity upon marketing authorization. The data exclusivity period prevents generic applicants from relying on the pre-clinical and clinical trial data contained in the dossier of the reference product when applying for a generic marketing authorization in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic applicant from commercializing its product in the EU until ten years have elapsed from the initial authorization of the reference product in the EU. The ten-year market exclusivity period can be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

The EU also provides opportunities for market exclusivity. For example, products receiving orphan designation in the EU can receive ten years of market exclusivity, during which time no similar medicinal product for the same indication may be placed on the market. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies. No extension to any supplementary protection certificate can be granted on the basis of pediatric studies for orphan indications.

The criteria for designating an "orphan medicinal product" in the EU are similar in principle to those in the United States. Under Article 3 of Regulation (EC) 141/2000, a medicinal product may be designated as orphan if (1) it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; (2) either (a) such condition affects no more than five in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from

orphan status, would not generate sufficient return in the EU to justify investment; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the EU, or if such a method exists, the product will be of significant benefit to those affected by the condition, as defined in Regulation (EC) 847/2000. Orphan medicinal products are eligible for financial incentives such as reduction of fees or fee waivers and are, upon grant of a marketing authorization, entitled to ten years of market exclusivity for the approved therapeutic indication. The application for orphan drug designation must be submitted before the application for marketing authorization. The applicant will receive a fee reduction for the marketing authorization application if the orphan drug designation has been granted, but not if the designation is still pending at the time the marketing authorization is submitted. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

The 10-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation, for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. Additionally, marketing authorization may be granted to a similar product for the same indication at any time if:

- The second applicant can establish that its product, although similar, is safer, more effective or otherwise clinically superior;
- The applicant consents to a second orphan medicinal product application; or
- The applicant cannot supply enough orphan medicinal product.

Food Oversight Responsibilities Between USDA and FDA, Including Transgenic or Genetically Modified Organisms

In the United States, the FDA and the USDA Food Safety Inspection Service, or FSIS, are primarily responsible for overseeing food regulation and safety, although as many as fifteen federal agencies also play a role in U.S. food regulation, including several other agencies within USDA.

FSIS is responsible for ensuring the safety, wholesomeness, and correct packaging and labeling of the nation's commercial supply of meat, poultry, egg products, and catfish. The agency's main authorizing statutes are the Poultry Products Inspection Act, Federal Meat Inspection Act, Agricultural Marketing Act, and the Egg Products Inspection Act. To carry out its mission, FSIS deploys almost 8,000 inspection program personnel to the more than 6,000 establishments around the country to ensure food manufactures are following the proper procedures to reduce the risks of food borne illnesses such as *Salmonella, Escherichia coli, Listeria monocytogenes*, and *Campylobacter*.

USDA has regulatory jurisdiction over transgenic crops through the Animal and Plant Health Inspection Service, or APHIS. Under the Plant Protection Act, USDA requires anyone who wishes to import, transport interstate, or plant a "regulated article" to apply for a permit or notify APHIS that the introduction will be made. Regulated articles are defined as "any organism which has been altered or produced through genetic engineering . . . which USDA determines is a plant pest or has reason to believe is a plant pest." The petition process can be a multi-year process that varies based on a number of factors, including APHIS' familiarity with similar products, the type and scope of the environmental review conducted, and the number and types of public comments received. APHIS conducts a comprehensive science-based review of the petition to assess, among other things, plant pest risk, environmental considerations pursuant to the National Environmental Policy Act of 1969, or NEPA, and any potential impact on endangered species. If, upon the completion of the review, APHIS grants the petition, the product is no longer deemed a "regulated article" and the petitioner may commercialize the product, subject to any conditions set forth in the decision. If APHIS does not determine the product to be non-regulated, the product may be subject to extensive regulation, including permitting requirements for import, handling, interstate movement, and release into the environment, and inspections.

We have submitted a petition for a determination of "nonregulated status" to the APHIS for our potato product candidate and our No Trans Fat (High Oleic) Soybean product candidates. APHIS has granted the petition for our potato product candidate and has not yet made a determination on our soybean product candidate. There can be no guarantee of the timing or success in obtaining nonregulated status from APHIS for our other crops or that the governing regulations will not change. Government regulations, regulatory systems, and the politics that influence them vary widely among jurisdictions and change often.

As part of its National Organic Program, USDA also regulates GMOs, or genetically modified ("GM") foods, to the extent that food manufacturers can use the "USDA Organic" label on their products. The use of genetic engineering, or GMOs, is prohibited in USDA organic products. According to USDA, this means, for example, that an organic farmer cannot plant GMO seeds, an organic cow cannot eat GMO alfalfa or corn, and an organic soup producer cannot put any GM ingredients into its soup. To label products with the USDA organic seal, farmers and food processors must show they are not using GMOs and that they are protecting their products from contact with GMOs (along with other prohibited substances) from farm to table.

FDA has jurisdiction to regulate more than 80 percent of the U.S. food supply. It derives its regulatory power from the Federal Food, Drug, and Cosmetic Act ("FDCA"), which has been amended over time by several subsequent laws. FDA's oversight of food safety and security is primarily carried out by its Center for Food Safety and Applied Nutrition ("CFSAN"). To execute its responsibilities, FDA has a team of 900 investigators and 450 analysts in the foods program who conduct inspections and collect and analyze product samples. FDA typically does not perform pre-market inspection for foods. FDA also regulates ingredients, packaging, and labeling of foods, including nutrition and health claims and the nutrition facts panel. Foods are typically not subject to premarket review and approval requirements, with limited exceptions.

For its part, FDA regulates foods made with GMOs under its 1992 "Statement of Policy: Foods Derived from New Plant Varieties." Under this policy, FDA regulates foods derived from GM plant varieties consistent with the framework for non-GM foods. In most cases, foods derived from GM plant varieties are not subject to premarket review and approval. In some cases, however, such foods will be considered to contain "food additives" that require premarket review and approval. FDA offers a voluntary consultation process to determine whether foods derived from GM plant varieties will be subject to these more stringent regulatory requirements.

FDA does not currently require manufacturers to label foods made with GMOs as such, but permits voluntary labeling pursuant to a guidance document finalized in November 2015. The topic of GMO use and labeling has been of significant public interest; as political forces continue to work, and there can be no guaranty that it will not change in the future. Additionally, three states have passed, and nearly half of U.S. states have considered, mandatory GMO labeling laws to date.

Other Regulatory Matters

French Pharmaceutical Company Status

To date, we do not have the status of pharmaceutical establishment, and therefore, cannot either manufacture the product candidates we develop or directly consider their marketing. Obtaining the pharmaceutical establishment license, either as distributor, operator, importer or as manufacturer, requires the submission of a request file specific to each of the mentioned qualifications with the *Agence nationale de sécurité du médicament et des produits de santé* (ANSM), which only grants it after review of this file and evaluation, usually after verification that the company has adequate premises, the necessary personnel and an adapted structure with satisfactory procedures for carrying out the proposed pharmaceutical activities.

We currently entrust CMOs with the manufacturing of clinical batches and intend to continue relying on CMOs for the production of the first commercial batches. We may consider internalizing production once our first product candidate is approved by regulatory authorities.

Legal Proceedings

From time to time, we may be involved in various claims and legal proceedings relating to claims arising out of our operations. We are not currently a party to any legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

C. Organizational Structure

In 2014 and as of January 1, 2015, we had the following wholly owned subsidiaries (state or country of incorporation): Cellectis, Inc. (United States, Delaware), Calyxt, Inc. (United States, Delaware), Cellectis Bioresearch S.A.S. (France), Cellectis Bioresearch, Inc. (United States, Delaware) and Ectycell, S.A.S. (France).

During the year ended December 31, 2014, we completed the following internal reorganization:

- Ectycell was merged with and into Cellectis Bioresearch, S.A.S., with Cellectis Bioresearch S.A.S. surviving in August 2015 with retroactive effect as at January 1, 2015 for French tax purposes;
- Cellectis Bioresearch S.A.S. was merged with and into Cellectis S.A with Cellectis S.A. surviving in December 2015 with retroactive effect as at January 1, 2015 for French tax purposes;
- Cellectis Bioresearch, Inc. was merged into Cellectis, Inc. in September 2015.

As at December 31, 2015 and 2016, the consolidated companies consist of Cellectis S.A, Cellectis, Inc. and Calyxt, Inc.

D. Property, Plants and Equipment

We lease:

- a 3,064 square-meter facility in Paris for administrative and research and development activities. The lease commenced on April 1, 2011 and has a 10-year initial term expiring on April 1, 2021.
- a 12,052 square-foot facility in New York, New York for administrative and research and development activities, which commenced on March 30, 2015 and has a 66-month initial term expiring on September 30, 2020.
- a 17,485 square-foot facility in New Brighton, Minnesota, which commenced on October 15, 2012 and expires on October 14, 2017.

In March 2016, Calyxt acquired an 10-acres parcels in Roseville (MN). A headhouse and a greenhouse were built on the Roseville property and they have been in operations since September 2016.

In addition, in March 2016, we entered into a lease agreement for a 26,928 square-foot facility in Montvale, New Jersey. As of December 31, 2016, this facility is not operational.

ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following Operating and Financial Review and Prospects should be read in conjunction with our audited consolidated financial statements and related notes included elsewhere in this Annual Report. In addition to historical consolidated financial information, this discussion also contains forward-looking statements, based on current expectations and related to future events and our future financial performance, that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including but not limited to those set forth under "Risk Factors" and elsewhere in this Annual Report.

Overview

We are a pioneering gene-editing company, employing our core proprietary technologies to develop best-in-class products in the emerging field of immuno-oncology. Our product candidates, based on gene-edited T-cells that express chimeric antigen receptors, or CARs, seek to harness the power of the immune system to target and eradicate cancers. We believe that CAR-based immunotherapy is one of the most promising areas of cancer research, representing a new paradigm for cancer treatment. We are designing next-generation immunotherapies that are based on gene-edited CAR T-cells. Our gene-editing technologies allow us to create allogeneic CAR T-cells, meaning they are derived from healthy donors rather than the patients themselves. We believe that the allogeneic production of CAR T-cells will allow us to develop cost-effective, "off-the-shelf" products and are capable of being stored and distributed worldwide. Our gene-editing expertise also enables us to develop product candidates that feature additional safety and efficacy attributes, including control properties designed to prevent them from attacking healthy tissues, to enable them to tolerate standard oncology treatments, and to equip them to resist mechanisms that inhibit immune-system activity. In addition to our focus on immuno-oncology, we are exploring the use of our gene-editing technologies in other therapeutic applications, as well as to develop healthier food products for a growing population.

We currently conduct our operations through two business segments, Therapeutics and Plants. Our Therapeutics segment is focused on the development of products in the field of immuno-oncology and of novel products outside immuno-oncology to treat other human diseases. Our Plants segment focuses on applying our gene-editing technologies to develop new generation plant products in the field of agricultural biotechnology through its own efforts or through alliances with other companies in the agricultural market.

Since our inception in early 2000, we have devoted substantially all of our financial resources to research and development efforts. Our current research and development focuses primarily on our CAR T-cell immunotherapy product candidates, including preparing to conduct clinical studies of our product candidates, providing general and administrative support for these operations and protecting our intellectual property. In addition, by leveraging our plant-engineering platform and the transformative potential of gene editing, we aim to create food products with consumer health benefits, adaptations for climate change or nutritional enhancements that address the needs of a growing population. We do not have any products approved for sale and have not generated any revenues from immunotherapy or agricultural biotechnology product sales.

In February 2014, we entered into an alliance with Servier for the development of UCART19 and other product candidates directed at four additional molecular targets. In November 2015, we entered into an amendment to our initial collaboration agreement with Servier, which allowed for an early exercise of Servier's option with respect to UCART19 and other product candidates. Pursuant to this amendment, Servier has exercised its option to acquire the exclusive worldwide rights to further develop and commercialize UCART19. In addition, Pfizer and Servier have announced that they have entered into an exclusive global license and collaboration agreement under which Pfizer has obtained from Servier exclusive rights to develop and commercialize UCART19 in the United States. In connection with the entry into the amendment to the collaboration agreement, Servier made an upfront payment of €35.6 million ($38.5 million), excluding taxes. As of December 31, 2016, Cellectis was eligible to receive up to €887 million ($967 million) in potential option exercise fees, development, clinical and sales milestones, in addition to royalties on sales and research and development costs reimbursements. During the quarter ended June 30, 2016, collaboration revenue was recognized in relation to the achievement of two milestones under our collaboration agreement with Servier with respect to UCART19 and pursuant to this collaboration agreement to provide Servier with raw materials and batches of UCART19 products. These two milestone payments were received from Servier during the third quarter 2016.

Our alliance with Pfizer, which commenced in June 2014, addresses the development of other CAR T-cell immunotherapies in the field of oncology. This strategic alliance is potentially worth up to $2.9 billion in payments by Pfizer to us, including an $80 million upfront payment and $2.8 billion in potential clinical and commercial milestone payments. In addition, we invoice research and development costs assigned to our projects in common with Pfizer. Pfizer also purchased 10% of our then-outstanding equity in connection with this collaboration for €25.8 million. We believe that both of these strategic transactions position us to compete in the promising field of immuno-oncology and add additional clinical and financial resources to our programs.

We have also entered into research and development alliances with each of Cornell University and the MD Anderson Cancer Center. Pursuant to these strategic alliances, we will collaborate with these two centers to accelerate the development of our lead product candidates UCART123, UCARTCS1, UCART22 and UCART38 in AML, BPDCN, multiple myeloma, B-cell and T-ALL. Under these agreements, we fund the research activities performed at Cornell University and the MD Anderson Cancer Center.

Our cash consumption is driven by our internal operational activities, as well as our outsourced activities, including the manufacturing activities of the requisite raw materials for the manufacturing of UCART123 and UCARTCS1, the GMP manufacturing of UCART123 at CELLforCURE and the technology transfer of UCARTCS1 process to CELLforCURE. In addition, we incurred significant annual payment and royalty expenses related to our in-licensing agreements with different parties including Institut Pasteur and University of Minnesota.

In addition to our cash generated by operations (including payments under our strategic alliances), we have funded our operations primarily through private and public offerings of our equity securities, grant revenues, payments received under intellectual property licenses, and reimbursements of research tax credits. Our ordinary shares have traded on the Alternext market of Euronext in Paris since February 7, 2007. From January 1, 2013 through December 31, 2014, we received €61.0 million through sales of equity and €73.7 million in payments made to us under our collaboration agreements with Pfizer and Servier. In March 2015, we completed our U.S. initial public offering of 5,500,000 American Depositary Shares on the Nasdaq Global Market for gross proceeds of $228.2 million. In 2015 and 2016, we received respectively €46.9 million and €24.7 million in payments pursuant to the Pfizer and Servier collaborations.

Financial Operations Overview

We have incurred net losses in nearly each year since our inception. Substantially all of our net losses resulted from costs incurred in connection with our development programs and from selling, general and administrative expenses associated with our operations. As we continue our intensive research and development programs, we expect to continue to incur significant expenses and may again incur operating losses in future periods. We anticipate that such expenses will increase substantially if and as we:

- continue to advance the research and development of our current and future immuno-oncology product candidates;
- continue, through Calyxt, to advance the research and development of our current and future agricultural product candidates;
- initiate additional clinical studies for, or additional pre-clinical development of, our immuno-oncology product candidates;
- conduct and multiply, though Calyxt, additional field trials of our agricultural product candidates;
- further develop and refine the manufacturing process for our immuno-oncology product candidates;
- change or add additional manufacturers or suppliers of biological materials;
- seek regulatory and marketing approvals for our product candidates, if any, that successfully complete development;

- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- seek to identify and validate additional product candidates;
- acquire or in-license other product candidates, technologies, germplasm or other biological material;
- make milestone or other payments under any in-license agreements;
- maintain, protect and expand our intellectual property portfolio;
- secure manufacturing arrangements for commercial production;
- seek to attract and retain new and existing skilled personnel;
- create additional infrastructure to support our operations as a public company; and
- experience any delays or encounter issues with any of the above.

We do not expect to generate material revenues from sales of our product candidates unless and until we successfully complete development of, and obtain marketing approval for, one or more of our product candidates, which we expect will take a number of years and is subject to significant uncertainty. Accordingly, we anticipate that we will need to raise additional capital prior to completing clinical development of any of our product candidates. Until such time that we can generate substantial revenues from sales of our product candidates, if ever, we expect to finance our operating activities through a combination of milestone payments received pursuant to our strategic alliances, equity offerings, debt financings, government or other third-party funding and collaborations, and licensing arrangements. However, we may be unable to raise additional funds or enter into such arrangements when needed on favorable terms, or at all, which would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our development programs or commercialization efforts or grant to others rights to develop or market product candidates that we would otherwise prefer to develop and market ourselves. Failure to receive additional funding could cause us to cease operations, in part or in full.

Historically, we also operated a Tools and Services segment, whose purpose was to develop and to sell genome engineering tools, engineered cells lines and services to biological research laboratories. The operations of the Tools and Services segment were primarily conducted through the activities of our subsidiaries Cellectis Bioresearch, Ectycell, Cellectis Bioresearch Inc. and Cellectis AB. In light of our current strategic goals, our board of directors decided to initiate a plan to wind down the Tools and Services segment, and, beginning in 2013, we gradually reduced the operations conducted in this segment. Other than the run-off of legacy contracts, following the divestiture of Cellectis AB in August 2014, the Tools and Services segment does not have any operations. In connection with our discontinuation of operations in the Tools and Services segment, we approved redundancy plans, which resulted in the termination of 45 employees throughout 2014.

Our consolidated financial statements for 2014, 2015 and 2016 have been prepared in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB.

Financial Operations Overview

Revenues and Other Income

Revenues

We currently derive all our revenues from payments pursuant to our collaboration agreements with Pfizer and Servier, patent licensing arrangements and royalties on licensed technologies. Our collaboration agreements provide for non-refundable upfront payments that we received upon execution of the relevant agreement, milestone payments that we are entitled to receive when the triggering event has occurred, research and development cost reimbursements that are recognized over the period of these services and royalty payments. The triggering event for a milestone payment may be the receipt of favorable scientific results, regulatory approval, or marketing of products developed pursuant to the agreement. Royalties are based on sales of licensed products or technologies. They are recognized in accordance with the terms of the licensing agreement when sales can be determined reliably and there is reasonable assurance that the receivables from outstanding royalties will be collected.

Our ability to generate product revenues and become profitable depends upon our and our collaborators' ability to successfully develop and commercialize products. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce our operations.

In addition, from the beginning of 2014, we gradually reduced the operations of our Tools and Services segment. Following the divestiture of Cellectis AB at the end of August 2014, we no longer receive significant revenues from the sale of services and research development contracts.

Other Income

Government Grants

Due to the innovative nature of our product candidate development programs, we have benefited from a certain number of sources of assistance from the French government or local public authorities, intended to finance our research and development efforts or the recruitment of specific personnel. Government grants that offset expenses that we incur for those research programs are recognized as other income in the period in which the expenses that are reimbursable pursuant to the grant have been incurred.

Research Tax Credit

The main research tax credit that we benefit from is the *Crédit d'Impôt Recherche*, or CIR, which is granted to companies by the French tax authorities in order to encourage them to conduct technical and scientific research. Companies demonstrating that they have research expenditures that meet the required CIR criteria receive a tax credit that may be used for the payment of their income tax due on the fiscal year in which the expenditures were incurred and during the next three fiscal years. If taxes due are not sufficient to cover the full amount of the tax credit at the end of the three-year period, the difference is repaid to us in cash by the French tax authorities. We also satisfy certain criteria that qualify us as a small/middle size company and permit us to request immediate payment of the CIR. The expenditures taken into account for the calculation of the CIR only involve research expenses.

The main characteristics of the CIR are the following:

- the CIR results in a cash inflow to us from the tax authorities;
- a company's corporate income tax liability does not limit the amount of the CIR; and
- the CIR is not included in the determination of the corporate income tax.

We have concluded that the CIR meets the definition of a government grant as defined in IAS 20, *Accounting for Government Grants and Disclosure of Government Assistance*, and that the classification as other income within operating loss in our statement of operations is appropriate.

Operating Expenses and Other Operating Income (Expenses)

Our operating expenses and other operating income (expenses) consist primarily of royalty expenses, research and development expenses and selling, general and administrative expenses.

Royalty Expenses

We have entered into several license agreements to obtain access to technology that we use in our product development efforts. Royalty expenses consist of in-licensing costs, which reflect royalties we pay to use rights granted to us. Depending on the contractual provisions, royalty expenses are either proportional to revenues generated by using the patents or fixed annual royalties or conditioned by milestones.

Research and Development Expenses

We engage in substantial research and development efforts to develop innovative CAR T-cell immunotherapy and agricultural product candidates.

Research and development expense consists primarily of:

- personnel costs, including salaries, related benefits and share-based compensation, for our employees engaged in scientific research and development functions;
- cost of third-party contractors such as contract research organizations, or CROs, and academic institutions involved in pre-clinical or clinical trials that we may conduct, or third-party contractors involved in field trials;
- purchases and manufacturing of biological materials, real-estate leasing costs as well as conferences and travel costs; and

- certain other expenses, such as expenses for use of laboratories and facilities for our research and development activities.

We classify personnel and other costs related to information technology, human resources, business development, legal, intellectual property and general management in R&D expense based on the time that employees spent contributing to R&D activities versus general and administrative activities.

Our research and development efforts are focused on our existing product candidates, including the advancement of our UCART123 product candidate, for which we received FDA approval in February 2017 and are currently seeking IRB approvals, and the development of our UCARTCS1 product candidate. We use our employee and infrastructure resources across multiple research and development programs directed toward developing our cell-based platform and for identifying and developing product candidates. We manage certain activities such as pre-clinical and clinical research and manufacture of product candidates through our partner institutions or other third-party vendors. Due to the number of ongoing projects and our ability to use resources across several projects, we do not record or maintain information regarding the costs incurred for our research and development programs on a program-specific basis.

Our research and development efforts are central to our business and account for a significant portion of our operating expenses. We expect that our research and development costs will increase in the foreseeable future as we implement our new clinical trials, manufacture pre-commercial clinical trial and pre-clinical study materials, expand our research and development and process development efforts, seek regulatory approvals for our product candidates that successfully complete clinical trials, access and develop additional technologies, and hire additional personnel to support our research and development efforts. This is because product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of development, primarily due to the increased size and duration of later-stage clinical trials. Likewise, in our plant products business, we expect our research and development expenses to increase over the next several years as we develop new agricultural product candidates and advance them through field trials toward commercial proof of concept.

We cannot determine with certainty the duration and completion costs of our future clinical trials of our product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates, or those of our collaborators, that might obtain regulatory approval. We also cannot determine with certainty the duration and completion costs of our future field trials of our agricultural product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our agricultural product candidates that might obtain regulatory approval. We may never succeed in achieving regulatory approval for any product candidates. The duration, costs and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress and expense of our ongoing as well as any additional pre-clinical studies, clinical trials and other research and development activities;
- clinical trial and early-stage results;
- the terms and timing of regulatory approvals;
- the expense of filing, prosecuting, defending and enforcing patent claims and other intellectual property rights;
- the ability to market, commercialize and achieve market acceptance for any product candidate that we may develop in the future; and
- the scope, rate of progress and expense of our ongoing as well as any additional studies for our agricultural product candidates, field trials and other research and development activities.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of employee-related expenses for executive, business development, intellectual property, finance, legal and human resource functions. Administrative expenses also include facility-related costs and service fees, other professional services and recruiting fees.

We classify personnel and other costs related to information technology, human resources, business development, legal, intellectual property and general management in R&D expense based on the time that employees spent contributing to R&D activities versus general and administrative activities.

We anticipate that our selling, general and administrative expenses will increase in the future as we increase our headcount to support the expected growth in our research and development activities and the potential commercialization of our product candidates. We also expect to continue to incur significant expenses associated with being a public company in the United States, including costs related to audit, legal, regulatory and tax-related services associated with maintaining compliance with U.S. exchange listing and SEC requirements, director and officer insurance premiums, and investor relations costs.

Financial Gain (Loss)

Financial result mainly consists of interest income related to our savings accounts and bank deposits, exchange gains and loss associated with transactions in foreign currencies and fair value of our financial assets and derivative instruments. Significant transactions in foreign currencies are translated into euros at the exchange rates effective at the transaction dates, while the average rate for the previous month is used for non-significant transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated into euros using the exchange rate effective at that date. The resulting exchange gains or losses are recorded in the consolidated statements of income as financial revenue or expense. Financial gain (loss) reflects the net impact of financial revenues and financial expenses.

Critical Accounting Policies and Estimates

Some of the accounting methods and policies used in preparing our financial statements under IFRS are based on complex and subjective assessments by our management or on estimates based on past experience and assumptions deemed realistic and reasonable based on the circumstances concerned. The actual value of our assets, liabilities and shareholders' equity and of our losses could differ from the value derived from these estimates if conditions changed and these changes had an impact on the assumptions adopted. We believe that the most significant management judgments and assumptions in the preparation of our financial statements are named below. For further details, see Notes to our consolidated financial statements.

- Revenue Recognition: Collaboration Agreements and Licenses, Sales of Products and Services (Note 3.1).
- Research Tax Credit (Note 3.1)
- Share-Based Compensation (Note 15)

A. Operating Results

The following table sets forth our selected consolidated statement of income data:

	Year Ended December 31,		
	2014	2015	2016
		(€ in thousands)	
Revenues and other income			
Revenues	21,627	50,346	40,491
Other income	4,826	6,039	10,516
Total revenues and other income	**26,453**	**56,385**	**51,007**
Operating expenses			
Royalty expenses	(3,035)	(2,475)	(1,605)
Research and development expenses	(14,407)	(52,410)	(70,899)
Selling, general and administrative expenses	(13,114)	(27,238)	(39,230)
Other operating income	—	1,060	345
Other operating expenses	(1,142)	(3,246)	(434)
Total operating expenses	**(31,698)**	**(84,309)**	**(111,824)**
Operating income (loss)	**(5,245)**	**(27,924)**	**(60,818)**
Financial revenues	7,622	9,240	6,459
Financial expenses	(527)	(1,690)	(6,417)
Financial gain (loss)	**7,095**	**7,550**	**42**
Income tax	—	—	—
Income (loss) from continuing operations	1,850	(20,373)	(60,776)
Loss from discontinued operations	(2,822)	—	—
Net income (loss)	**(972)**	**(20,373)**	**(60,776)**
Attributable to shareholders of Cellectis	20	(20,544)	(60,776)
Attributable to non-controlling interests	(992)	171	—

Years Ended December 31, 2014, 2015 and 2016

Revenues.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Collaboration agreements	11,879	48,288	37,856	306.5%	(21.6)%
Other	9,748	2,058	2,635	(78.9)%	28.0%
Revenues	**21,627**	**50,346**	**40,491**	**132.8%**	**(19.6)%**

This decrease in revenue of €9.9 million, or 19.6% between the years ended December 31, 2015 and 2016 is mainly due (i) to the decrease of €10.4 million in collaboration revenues notably due to revenue recorded in 2015 in relation to the early exercise by Servier of its option to acquire the exclusive worldwide rights to further develop and commercialize UCART19 (€18.8 million) partially offset by the revenue from an agreement to provide Servier with raw materials and additional batches of UCART19 products and the achievement of two milestones in 2016 (totaling €11.9 million) and (ii) to the increase of €0.5 million in licenses fees.

The increase in revenues of €28.7 million, or 132.8%, between the years ended December 31, 2014 and 2015 primarily reflects increased revenues of €36.4 million in 2015 under our collaboration agreements with Servier and Pfizer, including revenue of €18.8 million in connection with the amendment to our collaboration agreement with Servier, which was signed on November 18, 2015. This increase in revenues was partially offset by a €5.3 million decrease in revenue from licenses, a €1.3 million decrease in revenue from research and development services and a €1.1 million decrease in revenues from sales of products and services.

Other income.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Research tax credit	3,330	5,039	9,071	51.3%	80.0%
Other income	1,496	1,000	1,445	(33.2)%	44.5%
Other income	**4,826**	**6,039**	**10,516**	**25.1%**	**74.1%**

The increase in other income of €4.5 million, or 74.1%, between the years ended December 31, 2015 and 2016 reflects an increase of €4.0 million in research tax credit, and an increase of €0.4 million in research subsidies, resulting from settlements after termination of research programs.

The increase in other income of €1.2 million, or 25.1%, between the years ended December 31, 2014 and 2015, primarily reflects increases of €1.7 million in research tax credit income, which was offset by a decrease of €0.5 million in income from research subsidies.

Royalty expenses.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Royalty expenses	(3,035)	(2,475)	(1,605)	(18.5)%	(35.1)%

The decrease in royalty expenses of €0.9 million, or 35.1%, between the years ended December 31, 2015 and 2016 primarily reflects lower expense to existing partners.

The decrease in royalty expenses of €0.5 million between the years ended December 31, 2014 and 2015, also reflects lower payments to existing partners.

Research and development expenses.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Personnel expenses	(6,392)	(35,455)	(44,263)	454.7%	24.8%
Purchases, external expenses and other	(8,015)	(16,955)	(26,636)	111.5%	57.1%
Research and development expenses	**(14,407)**	**(52,410)**	**(70,899)**	**263.8%**	**35.3%**

During the years ended December 31, 2015 and 2016, research and development expenses increased by €18.5 million or 35.3%. Personnel expenses increased by € 8.8 million from €35.5 million in 2015 to €44.3 million in 2016, notably due to a €1.6 million increase in wages and salaries, and a €11.5 million increase in non-cash stock based compensation expense, partly offset by a €4.3 million decrease in social charges on stock option and free shares grants. Purchases and external expenses increased by €9.8 million from €15.2 million in 2015 to €25.0 million in 2016, mainly due to increased expenses related to UCART123 and other product candidates' development, including payments to third parties, purchases of biological materials and expenses associated with the use of laboratories and other facilities. Expenses in 2016 also include costs related to preparation of UCART123 clinical trials. Other expenses relate to continuing leasing and other commitments and decreased by € 0.1 million.

During the years ended December 31, 2014 and 2015, the increase in research and development expenses of €38.0 million, or 263.8%, reflects (i) increased expenditures in 2015 for the development of UCART programs toward their entry into Phase I clinical trials, (ii) expenses in 2015 related to the opening of our facility in New York, (iii) non-cash stock-based compensation expense of €0.2 million in 2014 and €18.5 million in 2015 and (iv) social charges on stock-options and free share grants of €0.1 million in 2014 and €7.7 million in 2015. Personnel expenses included in research and development expenses increased by €29.1 million from €6.4 million for the year ended December 31, 2014 to €35.5 million for the year ended December 31, 2015, mainly due to increased non-cash stock-based compensation expense. In addition, purchases and external expenses increased by €8.5 million, from €6.8 million for the year ended December 31, 2014 to €15.3 million for the year ended December 31, 2015, due to increased expenses related to innovation and platform development, including payments to third-parties participating in product development, purchases of biological raw materials and expenses associated with the use of laboratories and other facilities. Other expenses, which relate to continuing leasing and other commitments, increased from €1.2 million to €1.7 million during the years ended December 31, 2014 and 2015, respectively.

Selling, general and administrative expenses.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Personnel expenses	(5,483)	(19,588)	(30,293)	257.2%	54.7%
Purchases, external expenses and other	(7,631)	(7,650)	(8,937)	0.3%	16.8%
Selling, general and administrative expenses	(13,114)	(27,238)	(39,230)	107.7%	44.0%

During the years ended December 31, 2015 and 2016, the increase in selling, general and administrative expenses of €12.0 million, or 44.0% primarily reflects (i) an increase of €10.7 million in personnel expenses from €19.6 million to €30.3 million, attributable to a €0.9 million increase in wages and salaries, and an increase of €11.4 million of non-cash stock-based compensation expense, partly offset by a decrease of €1.6 million of social charges on stock options and free share grants, and (ii) an increase of €1.9 million in purchases and external expenses. Other expenses relate to taxes, various depreciation and amortization and other commitments and decreased by € 0.6 million, due to lower business taxes and lower provisions.

During the years ended December 31, 2014 and 2015, the increase in selling, general and administrative expenses of €14.1 million, or 107.7%, primarily reflects an increase of €14.1 million in personnel expenses, from €5.5 million to €19.6 million, attributable, among other things, to (i) €11.6 million of non-cash stock-based compensation expense in 2015 from €0.3 million in 2014, and to (ii) €4.5 million of social charges on stock options and free share grants from €0.1 million in 2014. In addition, purchases and external expenses increased by €0.7 million from €5.4 million in 2014 to €6.1 million in 2015, primarily with respect to professional costs associated with our U.S. IPO on the Nasdaq Stock Exchange in March 2015. Other expenses decreased from €2.2 million for 2014 to €1.5 million for 2015, a decrease reflecting a grant provision that was booked in 2014.

Other operating income.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Other operating income	—	1,060	345	0.0%	(67.5)%

The decrease in other operating income between the years ended December 31, 2015 and 2016 amounted to €0.7 million, or 67.7%. Other operating income for the year ended December 31, 2016 included (i) a one-off tax reimbursement, (ii) the reversal of lease incentive deferrals and (iii) reversals of reserves for personnel and commercial litigation.

During the year ended December 31, 2015, we recorded €1.1 million in other operating income, which included income from (i) the reversal of a subsidy provision, (ii) the reversal of lease incentives deferrals, and (iii) a gain from a settlement with a supplier.

During the years ended December 31, 2014 and 2015, we recorded €0.5 million in expenses and €0.2 million in net income, respectively, with respect to our redundancy plan. The €0.2 million of net income recorded in 2015 resulted from the reversal of unutilized redundancy plan reserves. *Other operating expenses.*

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Other operating expenses	(1,142)	(3,246)	(434)	184.2%	(86.6)%

The decrease in other operating expenses of €2.8 million, or 86.6%, between the years ended December 31, 2015 and 2016 mainly reflects settlements signed in 2015.

The increase in other operating expenses of €2.1 million, or 184.2%, between the years ended December 31, 2014 and 2015 is mainly due to settlements and increases in various reserves.

Financial revenues.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Financial revenues	7,622	9,240	6,459	21.2%	(30.1)%

The decrease in financial revenues of €2.8 million, or 30.1%, between the years ended December 31, 2015 and 2016, was mainly attributable to the decrease of foreign exchange gain for the period ended December 31, 2016, which resulted from the translation of our U.S. Dollar-denominated cash and cash equivalent into Euro at the closing rate for the period, generating an €4.4 million gain compared to a €8.2 million gain in 2015. Additionally, interest income increased from €1.0 million in 2015 to €1.5 million in 2016.

The increase in financial revenues of €1.6 million, or 21.3%, between the years ended December 31, 2014 and 2015 was mainly attributable to the significant foreign exchange gain for the period ended December 31, 2015, which resulted from the translation of our U.S. Dollar-denominated cash and cash equivalent into Euro at the closing rate for the period, generating an €8.2 million gain compared to a €7.1 million gain in 2014. Additionally, interest income increased from €0.3 million in 2014 to €1.0 million in 2015.

Financial expenses.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Financial expenses	(527)	(1,690)	(6,417)	220.7%	279.6%

The change in financial expenses of €4.7 million, or 279.6%, between the years ended December 31, 2015 and 2016, was mainly attributable to a €2.1 million increase in foreign exchange loss (from €1.7 million in 2015 to a €3.8 million loss in 2016), a €2.5 million increase in fair value adjustments expense of which €1.6 million reflects a change in the fair value of foreign exchange derivatives, and a €0.9 million decrease in current financial assets.

During the years ended December 31, 2014 and 2015, the increase in financial expenses of €1.2 million, or 220.7%, was mainly attributable to a foreign exchange loss of €1.5 million in 2015.

Income / loss from continuing operations.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Income (loss) from continuing operations	1,850	(20,373)	(60,776)	(1,201.3)%	198.3%

The change in net income (loss) from continuing operations of €40.4 million between the year ended December 31, 2015 and 2016 was mainly due to (i) a €22.9 million increase in non-cash stock-based compensation expense, (ii) a € 11.9 million increase in purchases and external expenses, (iii) a €2.6 million increase in wages, (iv) a €5.4 million decrease in revenues and other income, (ii) the €7.5 million decrease in financial result, partially offset by €5.9 decrease in social charges on stock options and free share grants. The remaining difference is mainly due to the decrease in other operating expenses.

The change in net income (loss) from continuing operations of €22.2 million between the years ended December 31, 2014 and 2015 was primarily related to a €30.1 million increase in non-cash stock-based compensation expense and a €12.2 million increase in social charges on stock options and free share grants, partially offset by an increase of €29.9 million in revenues and other income.

Loss from discontinued operations.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Loss from discontinued operations	(2,822)	0	0	(100.0)%	0.0%

The loss from discontinued operations for the year ended December 31, 2014 was primarily generated by Cellectis AB, which had been sold the same year.

Gain/Loss attributable to non-controlling interests.

	Year Ended December 31,			% change	
	2014	2015	2016	2015 vs 2014	2016 vs 2015
Attributable to non-controlling interests	(992)	171	—	(117.2)%	(100.0)%

During the years ended December 31, 2014 and 2015, we recorded €1.0 million in loss attributable to non-controlling interests and €0.2 million in gain attributable to non-controlling interests, respectively. Non-controlling interests for 2015 include 25% of the income of Cellectis Bioresearch and its subsidiaries until our repurchase from "*Caisse des Dépôts et Consignations*" on May 18, 2015 of its shares, which represented the entirety of this non-controlling interest.

Segment Results

Information related to each of our reportable segments is set out below. Segment revenues and Other income, Research and development expenses, Selling, general and administrative expenses, and Royalties and other operating income and expenses, and Adjusted net income (loss) attributable to shareholders of Cellectis (which does not include non-cash stock-based expense) are used by the CODM to measure performance. The CODM does not review any asset or liability information by segment or by region.

Adjusted Net Income (Loss) attributable to shareholders of Cellectis is not a measure calculated in accordance with IFRS. Because Adjusted Net Income (Loss) attributable to shareholders of Cellectis excludes Non-cash stock based compensation expense—a non-cash expense, we believe that this financial measure, when considered together with our IFRS financial statements, can enhance an overall understanding of Cellectis' financial performance. Moreover, our management views the Company's operations, and manages its business, based, in part, on this financial measure.

There are intersegment transactions between the two reportable segments, including allocations of (i) corporate general and administrative expenses and (ii) research and development expenses to our subsidiaries. These intersegment expenses are priced at cost for external expenses, or at cost plus a mark-up of 4-10%, depending on the nature of the service. The net income (loss) includes the impact of the operations between segments while the intra-segment operations are eliminated.

Years Ended December 31, 2014, 2015 and 2016

The following table summarizes segment revenues and segment operating profit (loss) for the years ended December 31, 2014, 2015 and 2016:

	2014			2015			2016		
€ in thousands	**Plants**	**Therapeutics**	**Total reportable segments**	**Plants**	**Therapeutics**	**Total reportable segments**	**Plants**	**Therapeutics**	**Total reportable segments**
Segment revenues and other income	**1,156**	**27,564**	**28,720**	**44**	**57,141**	**57,185**	**647**	**53,730**	**54,376**
Inter-segment revenues	(91)	(1,171)	(1,262)	—	(800)	(800)	(118)	(3,252)	(3,370)
Revenues with Cellectis AB (discontinued operations)	—	(1,005)	(1,005)	—	—	—	—	—	—
External revenues and other income	**1,065**	**25,388**	**26,453**	**44**	**56,341**	**56,385**	**529**	**50,477**	**51,007**
Research and development expenses	(922)	(13,485)	(14,407)	(2,590)	(49,820)	(52,410)	(3,716)	(67,183)	(70,899)
Selling, general and administrative expenses	(822)	(12,292)	(13,114)	(1,652)	(25,586)	(27,238)	(4,346)	(34,885)	(39,230)
Royalties and other operating income and expenses	(269)	(3,908)	(4,177)	(245)	(4,416)	(4,660)	(428)	(1,267)	(1,695)
Total operating expenses	**(2,013)**	**(29,685)**	**(31,698)**	**(5,112)**	**(79,197)**	**(84,309)**	**(8,490)**	**(103,334)**	**(111,824)**
Operating income (loss) before tax	**(948)**	**(4,297)**	**(5,245)**	**(5,068)**	**(22,856)**	**(27,924)**	**(7,961)**	**(52,857)**	**(60,818)**
Financial gain (loss)	148	6,947	7,095	233	7,317	7,550	79	(37)	42
Net income (loss) from continuing operations	**(800)**	**2,650**	**1,850**	**(4,835)**	**(15,539)**	**(20,373)**	**(7,882)**	**(52,894)**	**(60,776)**
Net income (loss) from discontinued operations	—	(2,822)	(2,822)	—	—	—	—	—	—
Non controlling interests	—	992	992	—	(171)	(171)	—	—	—
Net income (loss) attributable to shareholders of Cellectis	**(800)**	**820**	**20**	**(4,835)**	**(15,710)**	**(20,544)**	**(7,882)**	**(52,894)**	**(60,776)**
Adjustment of Non-cash stock-based compensation expense	—	548	548	846	29,257	30,103	992	51,982	52,974
Adjusted net income (loss) attributable to shareholders of Cellectis	**(800)**	**1,368**	**568**	**(3,989)**	**13,547**	**9,559**	**(6,890)**	**(912)**	**(7,802)**
Depreciation and amortization	(74)	(1,298)	(1,372)	(89)	(1,657)	(1,745)	(312)	(1,686)	(1,998)
Additions to tangible and intangible assets	134	221	354	474	3,502	3,977	9,407	3,762	13,169

Please note that in our notes to Consolidated Financial Statements for the year ended 2015, we allocated the share-based compensation within the segment related to the employee that benefited from such compensation. Since 2016, we allocate share-based compensation to the applicable entity related to such shares, considering that such share-based compensation is compensation linked to the employee's involvement in that entity's performance. In practice, all share-based compensation that is based on Cellectis shares will be charged in the Therapeutics segment, even if some Calyxt employees are included in a Cellectis stock-option plan. Figures for 2015 take into account this change and disclose comparable amounts. It was not applicable for 2014 figures.

Therapeutics segment—2015 vs. 2016

External revenues in our Therapeutics segment decreased by €5.9 million, from €56.3 million for the year ended December 31, 2015 to €50.5 million for the year ended December 31, 2016. The decrease was primarily due to a decrease of €7.1 million in collaboration agreement revenues and higher research tax credit, as described in sections "Revenues" and "Other income" of our consolidated operating result analysis.

The increase in operating expenses of €24.1 million from the year ended December 31,2015 to the year ended December 31, 2016 resulted primarily from higher personnel expenses, attributable, among other things, to the increase in non-cash stock-based compensation expenses, as well as the increase in external expenses for product development.

Segment operating loss before tax increased by €30.0 million from the year ended December 31,2015 to the year ended December 31, 2016.

Therapeutics segment—2014 vs. 2015

For the years ended December 31, 2014 and 2015, we recorded external revenues and other income of €25.4 million and €56.3 million, respectively. This €30.1 million increase primarily reflects increased revenues under our collaboration agreements with Servier and Pfizer, including revenue of €18.8 million received in connection with the amendment to our collaboration agreement with Servier, which was signed on November 18, 2015.

For the years ended December 31, 2014 and 2015, we recorded total operating expenses of €29.7 million and €79.2 million, respectively. This increase of €49.5 million resulted primarily from higher personnel expenses attributable, among other things, to increases in non-cash stock-based compensation expenses, social charges on stock options and free shares grants, and professional costs. The increase also reflects an increase of €35.7 million in research and development expenses, €13.3 million in selling, general and administrative expenses and €0.5 million in royalties and other operating income and expenses, year-over-year.

For the years ended December 31, 2014 and 2015, we recorded operating loss before tax of €4.3 million and €22.9 million, respectively.

Plants segment—2015 vs. 2016

External revenues in our Plants segment increased by €0.5 million, from €44 thousand for the year ended December 31, 2015 to €0.5 million for the year ended December 31, 2016.

The increase in operating expenses of €3.4 million from the year ended December 31, 2015 to the year ended December 31, 2016 resulted primarily from a significant increase in Calyxt, Inc.'s research and development activities, as well as an increase in non-cash stock-based compensation expenses.

Segment operating loss before tax increased by €2.9 million from €5.1 million for the year ended December 31, 2015 to €8.0 million for the year ended December 31, 2016.

Plants segment—2014 vs. 2015

For the years ended December 31, 2014 and 2015, we recorded external revenues and other income of €1.06 million and €44 thousand, respectively, a €1,021 thousand decrease.

For the years ended December 31, 2014 and 2015, we recorded total operating expenses of €2.0 million and €5.1 million, respectively. This increase of €3.1 million reflects an increase of €2.3 million in research and development expenses and €0.8 million in selling, general and administrative expenses, year-over-year, in each case as a result of increased employee expenses and outsourcing expenses.

For the years ended December 31, 2014 and 2015, we recorded operating loss before tax of €1.0 million and €5.1 million, respectively. This increase of €4.1 million resulted primarily from the above-mentioned increases in operating expenses.

B. Liquidity and Capital Resources

Introduction

We have incurred losses and cumulative negative cash flows from operations since our inception in 2000, and we anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and selling, general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may raise through a combination of equity offerings, debt financings, other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements.

We have funded our operations since inception primarily through private and public offerings of our equity securities, grant revenues, payments received under patent licenses, reimbursements of research tax credit claims and payments under our strategic alliances with Pfizer and Servier. Our ordinary shares have been traded on the Alternext market of Euronext in Paris since February 7, 2007 and our ADSs have traded on the Nasdaq Global Market in New York since March 30, 2015.

Key Financing Events

- *2014*—In March 2014, we completed a private placement of 4,000,000 ordinary shares to institutional investors for gross proceeds of €20.5 million. In July 2014, in connection with our collaboration agreement with Pfizer, we issued 2,786,924 ordinary shares, representing 10% of our then-outstanding ordinary shares, to Pfizer for gross proceeds of €25.8 million. In November 2014, we issued shares in connection with the exercise of non-employee warrants for gross proceeds of €13.4 million.
- *2015*—In March 2015, we completed our U.S. initial public offering of ADSs on the Nasdaq for gross of $228 million of gross proceeds, of which we received net proceeds of $209.6 million.

Liquidity management

As of December 31, 2016, we had current financial assets and cash and cash equivalents of €276.2 million comprising cash and cash equivalents of €241.5 million and current financial assets of €34.7 million.

Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our cash and cash equivalents are held in bank accounts, money market funds, fixed bank deposits primarily in France and are denominated in U.S. dollars ($163.7 million as of December 31, 2016). Current financial assets denominated in U.S. dollars amounted to $36.6 million as of December 31, 2016.

Historical Changes in Cash Flows

The table below summarizes our sources and uses of cash for the years ended December 31, 2014, 2015 and 2016:

	For the year ended December 31,		
	2014	2015	2016
Net cash flows provided by (used in) operating activities	41,725	3,236	(29,559)
Net cash flows provided by (used in) investing activities	(1,353)	(6,965)	(48,018)
Net cash flows provided by (used in) financing activities	57,904	198,802	438
Total	**98,276**	**195,073**	**(77,139)**
Effect of exchange rate changes on cash	6,511	6,818	4,403

Year Ended December 31, 2016

The net cash flows used in operating activities are mainly due to our cash expenditures related to research and development efforts, including the advancement of UCART123, for which an IND was filed in the United States in 2016, plus several advance payments made for manufacturing activities, partially offset by the payments received from Servier and Pfizer pursuant to our collaboration agreements. Cash outflows for 2016 also include €6.3 million of social charges on stock options.

The net cash flows used in investing reflects our use of €9.5 million ($10.0 million) for the acquisition of land by Calyxt and the building of its greenhouse, and the acquisition of €35.5 million ($37.5 million) of current financial assets at Cellectis S.A.

The net cash flows provided by financing activities includes the exercise of non-employees warrants in January 2016 for €0.3 million and the subscription of non-employees warrants in September 2016 for €0.3 million partially offset by the decrease of financial lease debt for €0.1 million.

For the year ended December 31, 2016, the effect of exchange rate changes on cash is mainly related to the translation of cash held by foreign subsidiaries denominated in US dollars into Euros at the closing rate of the period amounting to €3.4 million compared to €0.3 million for the year ended December 31, 2015. This increase is mostly due to the transfer of $69.9 million from Cellectis S.A. to Cellectis Inc. during the first quarter of 2016. These effect is recorded as currency translation adjustment into the consolidated comprehensive income (loss).

Year Ended December 31, 2015

We had net cash flows provided by operating activities of continuing operations of €3.2 million for the year ended December 31, 2015, primarily as a result of payments received from Servier and, to a lesser extent, Pfizer. In December 2015, we received an upfront payment of €35.6 million in connection with the amendment to our collaboration agreement with Servier. Our cash expenditures during 2015 related to our research and development efforts, including the advancement of UCART19, for which a CTA was filed in the United Kingdom in 2015. Cash outflows for 2015 also include €12.2 million of social charges on free shares and stock options grants.

The net cash flows used in investing activities of continuing operations of €7.0 million for the year ended December 31, 2015 primarily reflects our use of €3.8 million for the acquisition of industrial and laboratory equipment at Cellectis S.A. and Cellectis Inc., and our repurchase for €3.5 million of 25% of the minority shares of Cellectis Bioresearch.

The net cash flows provided by financing activities of continuing operations of €198.8 million for the year ended December 31, 2015 includes the net proceeds from our U.S. initial public offering on the Nasdaq Global Market in March 2015.

Years Ended December 31, 2014

We had net cash provided by operating activities of continuing operations of €42.5 million for the year ended December 31, 2014. Substantially all of our cash expenditures during these years related to our research and development efforts, including the advancement of the pre-clinical development of UCART19. The net cash flows provided by operating activities of continuing operations during 2014 is primarily due to payments received from Servier and Pfizer pursuant to our collaboration agreements.

The net cash used in investing activities of continuing operations of €1.4 million for the year ended December 31, 2014. This amounts include the acquisitions of industrial and laboratory equipment required to conduct our research programs, changes in non-current financial assets and liabilities, as well as the proceeds from the sale of Cellectis AB.

The net cash flows provided by financing activities of continuing operations was €57.9 million for the year ended December 31, 2014, respectively. The amount includes proceeds from the issuance and sale of ordinary shares to institutional investors in March 2014, to Pfizer in July 2014, and in connection with the exercise of non-employees warrants in November 2014.

Operating capital requirements

To date, we have not generated any revenues from therapeutic or agricultural product sales. We do not know when, or if, we will generate any revenues from product sales. We do not expect to generate significant revenues from product sales unless and until we obtain regulatory approval of and commercialize one of our current or future product candidates. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products. We are subject to all risks incident in the development of new gene therapy products, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We are also subject to all risks incident in the development of new agricultural products, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We also anticipate substantial expenses related to audit, legal, regulatory and tax-related services associated with our public company obligations in the United States and our continued compliance with applicable U.S. exchange listing and SEC requirements. We anticipate that we will need additional funding in connection with our continuing operations, including for the further development of our existing product candidates and to pursue other development activities related to additional product candidates.

We believe our cash and cash equivalents, our cash flow from operations (including payments we expect to receive pursuant to our collaboration agreements) and government funding of research programs will be sufficient to fund our operations through 2019. However, we may require additional capital for the further development of our existing product candidates and may also need to raise additional funds sooner to pursue other development activities related to additional product candidates.

Until we can generate a sufficient amount of revenues from our products, if ever, we expect to finance a portion of future cash needs through public or private equity or debt offerings. Additional capital may not be available on reasonable terms, if at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates. If we raise additional funds through the issuance of additional debt or equity securities, it could result in dilution to our existing shareholders, increased fixed payment obligations and these securities may have rights senior to those of our ordinary shares. If we incur indebtedness, we could become subject to covenants that would restrict our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. Any of these events could significantly harm our business, financial condition and prospects.

Our assessment of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Our future funding requirements, both near and long-term, will depend on many factors, including, but not limited to:

- the initiation, progress, timing, costs and results of pre-clinical and clinical studies for our product candidates;
- the initiation, progress, timing, costs and results of field trials for our agricultural product candidates;
- the outcome, timing and cost of regulatory approvals by U.S. and non-U.S. regulatory authorities, including the possibility that regulatory authorities will require that we perform more studies than those that we currently expect;
- the ability of our product candidates to progress through clinical development successfully;
- the ability of our agricultural product candidates to progress through late stage development successfully, including through field trials;
- the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- our need to expand our research and development activities;

- our need and ability to hire additional personnel;
- our need to implement additional infrastructure and internal systems, including manufacturing processes for our product candidates;
- the effect of competing technological and market developments; and
- the cost of establishing sales, marketing and distribution capabilities for any products for which we may receive regulatory approval.

If we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, financial condition and results of operations could be materially adversely affected.

C. Research and Development, Patents and Licenses, etc.

Our research and development teams utilize our deep expertise to contribute to the growth of our business. As of December 31, 2016, we had 91 employees engaged in research and development activities. In the years ended December 31, 2014, 2015 and 2016 we spent €14.4 million, €52.4 million and €70.9 million, respectively, on research and development. For a discussion of our research and development activities, see "Item 4.B—Business Overview" and "Item 5.A—Operating Results."

D. Trend Information

For a discussion of trends, see "Item 4.B—Business Overview," "Item 5.A—Operating Results" and "Item 5.B—Liquidity and Capital Resources." Other than as disclosed in these sections, we are not aware of any trends, uncertainties, demands, commitments or events since December 31, 2015 that are reasonably likely to have a material adverse effect on our revenues, income, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future operating results or financial condition.

E. Off-Balance Sheet Arrangements.

We do not have any off-balance sheet arrangements as defined under Securities and Exchange Commission rules.

F. Tabular Disclosure of Contractual Obligations

The following table discloses aggregate information about material contractual obligations and periods in which payments were due as of December 31, 2016. Future events could cause actual payments to differ from these estimates.

As of December 31, 2016	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
			€ in thousands		
Finance lease agreements	64	36	28	—	—
Facility lease agreements	15,069	2,867	5,524	3,484	3,194
License agreements	19,493	1,172	2,345	2,345	13,631
Manufacturing agreements	13,652	11,255	2,397	—	—
Total contractual obligations	**48,279**	**15,330**	**10,294**	**5,829**	**16,825**

The commitment amounts in the table above are associated with contracts that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum or variable price provisions, and the approximate timing of the actions under the contracts. The table does not include obligations under agreements that we can cancel without a significant penalty. We have collaboration agreements whereby we are obligated to pay royalties and milestones based on future events that are uncertain and therefore they are not included in the table above.

We also provided Letters of Credit to the landlords of our facilities in New York and in New Brighton.

For further detail regarding license and manufacturing agreement, please see Note 18 – Commitments of our consolidated financial statements.

G. Safe Harbor

This Annual Report contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act and as defined in the Private Securities Litigation Reform Act of 1995. See "Special Note Regarding Forward-Looking Statements."

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

The following table sets forth information regarding our executive officers and directors as of March 23, 2017. Unless otherwise stated, the address for our executive officers and directors is 8, rue de la Croix Jarry, 75013 Paris, France.

Name	Age	Position(s)
Executive Officers:		
André Choulika, Ph.D.	52	Chairman of the Board, Chief Executive Officer, and Co-Founder
Mathieu Simon, M.D.	60	Director, Executive Vice President, Chief Operating Officer
David Sourdive, Ph.D.	50	Director, Executive Vice President, Technical Operations and Co-Founder
Philippe Duchateau, Ph.D.	54	Chief Scientific Officer
Eric Dutang	43	Chief Financial Officer
Julia Berretta	36	Vice President Business Development
Marie-Bleuenn Terrier	35	General Counsel
Loan Hoang-Sayag	50	Chief Medical Officer
Stephan Reynier	48	Chief Regulatory Officer
Federico Tripodi	40	Chief Executive Officer, Calyxt, Inc.
Non-Employee Directors:		
Alain Godard	71	Director
Pierre Bastid	62	Director
Laurent Arthaud	54	Director
Annick Schwebig, M.D.	66	Director
Jean-Marie Messier	60	Director

André Choulika, Ph.D., is one of the founders of Cellectis and served as Chief Executive Officer since the company's inception in 1999. He is Chairman of the Board of Directors since 2011 and President of Calyxt, Inc. since August 2010. From 1997 to 1999, Dr. Choulika worked as a post-doctoral fellow in the Division of Molecular Medicine at Boston Children's Hospital, where he was one of the inventors of nuclease-based genome editing technologies and a pioneer in the analysis and use of meganucleases to modify complex genomes. After receiving his Ph.D. in molecular virology from the University of Paris VI (Pierre et Marie Curie), he completed a research fellowship in the Harvard Medical School Department of Genetics. His management training is from HEC (Challenge +). Based on Dr. Choulika's deep knowledge of the company and scientific experience, we believe Dr. Choulika has the appropriate set of skills to serve as our chief executive officer and a member of our board of directors.

Mathieu Simon, M.D., has served as a director since June 14, 2013, as Executive Vice-President since 2012 and as Chief Operating Officer since 2013. Dr. Simon was the Director and Chairman of the Board of Cellectis AB from 2013 to 2014 and has been a Director of Ectycell. Prior to joining us, from 2000 to 2010 Dr. Simon was Senior Vice President Head of Global Pharmaceutical Operations at Pierre Fabre SA. From 1994 to 2010, Dr. Simon led several Wyeth subsidiaries as General Manager (including Italy and Belgium). From 1994 to 1997, he served as Group Vice President of Marketing and Clinical Affairs for Wyeth International in Philadelphia, USA. From 2000 and 2010, Dr. Simon was a Director of Wyeth S.p.A., Farmindustria, and Pharma in Italy. He is also currently a director of Vaximm AG, a Swiss-German biotech company. Dr. Simon graduated from medical school at the University of Paris in 1982. Dr. Simon today is an advisor at the European Commission D.G. Research and Innovation (Horizon 2020). We believe Dr. Simon's extensive business and leadership experience in the pharmaceutical industry qualifies him to serve as a member of our board of directors.

David Sourdive, Ph.D., is a co-founder of Cellectis and has held the position of Executive Vice President, Corporate Development since 2008. Dr. Sourdive has also been a member of our board of directors since 2000. From 2009 to 2012, he served as President of Ectycell SAS, and since 2012, he has served on its supervisory committee. Since February 2014, Dr. Sourdive has also served on the board of directors of Mediterranean Institute for Life Sciences, and since June 2015, he has served on the board of directors of Eukaÿs SAS. He previously served on the boards of directors of Cellectis AB, Medicen Paris Region and Seine Saint Denis Avenir. From 1998 to 2000, he directed the biotechnologies laboratory of the Centre d'Etudes du

Bouchet for the French Ministry of Defense. From 1997 to 1998, Dr. Sourdive worked at one of the leading laboratories in viral immunology at Emory University in Atlanta, Georgia. His work there was focused on immunological T-cell memory. Dr. Sourdive graduated from the École Polytechnique and received his PhD in molecular virology at the Institut Pasteur. He also has management training from the HEC (Challenge +). We believe Dr. Sourdive's extensive experience in business and the biotechnology industry qualifies him to serve on our board of directors.

Philippe Duchateau, Ph.D., joined Cellectis in 2001 to pioneer the field of genome engineering and has served as Chief Scientific Officer since 2012. After receiving his PhD in 1993 in biochemistry and molecular biology at the Institut Pasteur (Lille, France), he completed a research fellowship from 1993 to 2001 at the University of California, San Francisco (United States) within the Cardiovascular Research Institute. He is co-inventor of numerous patents in the field of nucleases and genome engineering and co-authors on more than 50 scientific publications and co-editor of one book entitled "Site-directed Insertion of Transgenes." As head of Cellectis's Research department since 2004, he helped to the development of the Cellectis Technologies.

Eric Dutang joined us as Deputy Chief Financial Officer in May 2015 and was appointed Chief Financial Officer in 2016. Eric began his career as financial auditor with KPMG, first in Paris for five years and then in New York for two years. He worked for listed companies in France and the United States such as Vivendi, Veolia Environnement or Cablevision. He then became a member of the transactions and advisory teams in Paris for seven years where he carried out acquisitions / disposals for listed companies and private equity funds. After serving at KPMG, he worked on international business developments for French public listed groups, including Air Liquide and Thales. Eric holds a Master of Finance and Executive MBA from HEC Paris (France)/Babson Massachusetts (USA).

Julia Berretta, Ph.D., joined Cellectis in 2010 in the scientific alliance and business development department. She has served as VP Business Development and Strategic Planning since 2014. Prior to joining Cellectis, she worked as a researcher at the CNRS in Gif-sur-Yvette. Julia Berretta received her Ph.D. in molecular biology from the Université Paris XI, and holds a specialized Master's Degree in innovation management from Neoma Business School.

Marie-Bleuenn Terrier joined Cellectis as Legal Counsel in 2008, and was appointed General Counsel in 2013. Prior to joining Cellectis, she worked as Legal Counsel for Pfizer from 2004 to 2006, and for Boehringer-Ingelheim from 2006 to 2008. Marie-Bleuenn Terrier has also served as Secretary of our board of directors since 2015. She holds a Master's degree in Law from the Panthéon La Sorbonne University in Paris.

Loan Hoang-Sayag, MD, joined Cellectis in January 2016 as Chief Medical Officer with the mission to bring the Company's product candidates into clinical development. Dr. Hoang-Sayag is a board-certified physician in hematology and medical oncology from Necker-Paris V René Descartes University and St-Antoine- Paris VI University, respectively, and has more than 20 years of hematology and oncology experience in both clinical and academic settings and more than 15 years in oncology drug development experience. Prior to joining Cellectis, she was Senior Medical Director at Quintiles Transnational where she was heading the European Oncology Medical team. Dr. Hoang-Sayag started her industry career at Hoffmann-La Roche in France where she was responsible for clinical development and medical affairs activities for different oncology drugs. She then moved to Pierre Fabre Oncology, where she led several clinical programs, prior to moving to Quintiles in 2005. Dr. Hoang-Sayag's drug development experience encompasses new chemotherapeutic entities, small molecules, monoclonal antibodies, antibody drug conjugates, stem cell therapy and checkpoint inhibitors, in hematologic malignancies and solid tumors.

Stephan Reynier, MSc, joined Cellectis in April 2011. He serves as Chief Regulatory and Compliance Officer after holding the position of Head of Programs at Ectycell, a former subsidiary of Cellectis, from April 2011 to 2014 with the mission of managing and coordinating internal and external collaborative programs. As Chief Regulatory and Compliance Officer, Mr. Reynier is in charge of ensuring a speedy and successful development of the UCART product family by establishing close interactions with regulatory agencies such as EMA and FDA, while securing compliance to applicable regulations, regulatory guidelines and quality assurance standards. Mr. Reynier has extensive experience, from his previous positions as Senior Director at Voisin Consulting Life Sciences and European Associate Director Medical Affairs at Gilead Sciences, in the design and implementation of regulatory strategies for the development of drugs and biologics, with a strong focus on cell and gene therapy. Mr Reynier graduated as Agro-Engineer in France and received a Master of Science in Chemical Engineering from the University of Toronto, Canada.

Federico Tripodi was appointed CEO of Calyxt in May 2016 to replace Luc Mathis. He holds a Master of Business Administration degree from Washington University's Olin Business School, as well as an agronomic engineering degree from Buenos Aires University, and has gathered extensive experience in agricultural R&D and product development during his nearly two-decade career in the agricultural biotechnology and seeds industry. Prior to joining Calyxt, he worked as General Manager for Monsanto Company's Sugarcane Division in Brazil for three years. He held other roles for Monsanto in Saint Louis, Mo., spanning Corporate Strategy (2011-2013), Omega-3 Program Lead (2009-2011), Oilseeds Global Quality Management Lead (2008-2009) and multiple other roles that involved managing multidisciplinary research teams in the technology organization between 2001 and 2008. During his

tenure at Monsanto, Mr. Tripodi led or participated with early discovery and late commercialization phase product launches across the Americas, which included biotechnology consumer traits (improved composition soybean oils) and farmer traits (high yield, drought tolerance, insect protection and herbicide tolerance). Mr. Tripodi started his career in Argentina in 1998 in field research of biotechnology traits and chemistry formulations until he moved to Saint Louis in 2001. Mr. Tripodi also has experience as a director of a startup and served on the board of directors for a not-for profit.

Alain Godard has served as a member of Cellectis' board of directors since 2007. He is a graduate of the Ecole Nationale Supérieure Agronomique de Toulouse and began his agronomy career in 1967 in Africa as a researcher at the *Institut de Recherche pour les Huiles et Oléagineux*. He joined the French chemical group Rhône-Poulenc in 1975 where he held various management positions in France and abroad before becoming CEO of the agrochemical subsidiary in 1991. In 1999 he was directly involved in the merger of Rhône-Poulenc and Hoechst to create Aventis and was appointed CEO of the Aventis CropScience subsidiary with a significant involvement in seeds and agricultural biotechnology. He left Aventis in 2002 to create a consulting company, SARL Godard & Co., specialized in agriculture and biotechnology, where he has served as Chief Executive Officer since 2009. Until 2016, Mr. Godard also served on the board of directors of Fermentalg S.A. We believe Mr. Godard's leadership and management expertise in the plant biotechnology field qualifies him to serve as a member of our board of directors.

Pierre Bastid has served as a member of Cellectis' board of directors since 2011. Mr. Bastid has 25 years experience in turning around, developing and running technology businesses in Asia, Europe and the United States. In addition to Cellectis, Mr. Bastid is currently serving on the board of directors of Pharnext (a biotechnology company), Hougou Finance S.A. and Hougou Développement S.A. (his own investment company), ZAKA S.A. and GRID (his own Paris and New York-based real estate companies), Shango S.A. (his own private equity company), EVOK (his own hotel group), Nepteam S.A.S. (a shipbuilding company), Louise 342-344 S.A., Hebioso S.A., La Chartreuse B S.C., Batuque Hotelaria e Turismo S.A. and Casino Royal S.A.. Mr. Bastid also advises a number of investment and private equity firms. Mr. Bastid is a trustee of the Juilliard School of Music and other non-profit organizations based in the United States. We believe Mr. Bastid's extensive business experience qualifies him to serve as a member on our board of directors.

Laurent Arthaud has served as a member of our board of directors since October 28, 2011. Mr. Arthaud has been the Managing Director of Life Sciences and Ecotechnologies for Bpifrance Investissement (formerly CDC Enterprises, a subsidiary of Caisse des Dépôts) since 2012. He currently serves on the boards of directors of Kurma Life Sciences Partners, TxCell, Adocia and Sparinvision. From 2006 to 2016, he served on the board of directors of Emertee Gestion. From 2006 to 2012, Mr. Arthaud held the position of Deputy CEO at CDC Entreprises. Since 2009 Mr. Arthaud has also directed InnoBio, an investment fund managed by Bpifrance Investissement as part of the FSI France Investissement program. From 1999 to 2004 he served as Vice President of Aventis Capital, an investment subsidiary of the pharmaceuticals group Aventis, and as President of Pharmavent Partners from 2004 to 2006. Mr. Arthaud is a graduate of the École Polytechnique and the École Nationale de Statistique et d'Administration Économique. We believe Mr. Arthaud's extensive investment experience in the biotechnology industry qualifies him to serve as a member on our board of directors.

Annick Schwebig, M.D., has served as a member of our board of directors since October 28, 2011. In 2000, she founded the French subsidiary of Actelion, of which she is a Senior Advisor. She formerly served as the General Manager of Actelion from 2000 to 2015. Actelion is a biopharmaceuticals company specializing in innovative treatments to serve unmet medical needs. She is also a director of Inventiva Pharma, a biopharmaceutical company, and Inserm-Transfert SA, the private subsidiary of the French National Institute of Health and Medical Research. A graduate of the University of Paris medical school, Dr. Schwebig worked as a senior manager at the biopharmaceuticals company Bristol-Myers Squibb for 17 years from 1983 to 2000. We believe Dr. Schwebig's extensive experience in the biopharmaceutical industry qualifies her to serve as a member on our board of directors.

Jean-Marie Messier has served as a member of our board of directors since May 18, 2015. He is co-founder and head of Messier Maris & Associés, an international investment banking firm. Mr. Messier has served on the board of directors of Rentabiliweb Group since May 2011. After graduating from the French university, Ecole Polytechnique, Mr. Messier attended the Ecole Nationale d'Administration, which trains civil servants. He became Managing Partner at Lazard Frères in 1988, a position he held for six years. Prior to this, he was responsible for the French Government's Privatization plan. As such, he privatized companies among which Alcatel, Lagardère, Saint Gobain, Suez and Société Générale, now all part of the top twenty French corporations. Mr. Messier served as President of Vivendi Universal from 1994 to 2002. During these years, he founded the mobile firm Cegetel and turned Vivendi into a conglomerate focused on two core activities: utilities (water, power and transport) and communications (pay TV, telecoms and internet), selling off assets in other areas. Mr. Messier has been managing his own "boutique" since 2003, Messier Maris & Associés, an investment bank headquartered in Paris and New York representing more than 50 professionals.

Family Relationships

There are no family relationships among any of our executive officers or directors.

B. Compensation

Compensation of Directors and Executive Officers

The aggregate cash compensation paid and benefits in kind granted by us to our current executive officers and directors, including share-based compensation, for the year ended December 31, 2016, was €2.2 million. For the year ended December 31, 2016, 1,050,062 stock options with an exercise price of € 22.44 per ordinary share were issued to directors and executive officers as compensation under the 2015 Stock Option Plan, and 1,526,474 stock options with an exercice price of € 17.90 per ordinary share were issued to directors and executive officers as compensation under the 2016 Stock Option Plan. The total amount set aside or accrued to provide pension, retirement or similar benefits was €30,282 for the year ended December 31, 2016.

Service Agreements

Mr. Godard, a member of our board of directors, entered into a service agreement with us and provided consultancy services in the area of global development strategy. We paid €33,000 in compensation for those services in fiscal year 2016.

Change of Control Benefits

We seek to balance the potential costs of change of control provisions with the costs that would arise from fear of job loss and other distractions that may result from potential, rumored or actual changes of control. As a result, after careful evaluation of the implications and economics of a change of control plan, on September 4, 2014, our board of directors adopted a change of control plan. As amended on December 11, 2014, the change of control plan provides benefits for our executive officers and several other senior employees of our company.

Pursuant to the change of control plan, the severance package shall be paid if, within the 36-month period following a change of control of our company, one of the following events occurs:

- non-renewal or dismissal other than for gross misconduct (*faute lourde*) of the employees or executives concerned; and
- for Drs. Choulika and Sourdive only, resignation as a result of a significant reduction of their duties or compensation.

The severance package shall be equal to 24 months of compensation increased by an amount equal to the maximum target bonus to which the employees or executives concerned may be entitled for the year of their departure (or for Dr. Choulika only, two times such target bonus), or, in the absence of such a target bonus, 1.5 times the last annual bonus paid to them during the 12 months prior to their departure.

The severance package shall be in addition to any legal and conventional severance payments owed to the employees or executives concerned.

A “change of control” is defined by reference to Article L.233-3 of the French Commercial Code, which provides that one or more persons acting alone or in concert are considered to control a company if (1) they have direct or indirect ownership of a majority of the voting rights or a proportion of the voting rights allowing de facto control of the decisions made by the shareholders, provided that such control is presumed if no shareholder holds a greater proportion of the voting rights; or (2) they have the power to appoint or dismiss a majority of the board of directors.

Limitations on Liability and Indemnification Matters

Under French law, provisions of By-laws that limit the liability of directors and officers are prohibited. However, French law allows *sociétés anonymes* to contract for and maintain liability insurance against civil liabilities incurred by any of their directors and officers involved in a third-party action, provided that they acted in good faith and within their capacities as directors or officers of the company. Criminal liability cannot be indemnified under French law, whether directly by the company or through liability insurance.

We expect to maintain customary liability insurance coverage for our directors and executive officers, including insurance against liability under the Securities Act. With certain exceptions and subject to limitations on indemnification under French law, these agreements will provide for indemnification for damages and expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding arising out of his or her actions in that capacity. We believe that this insurance and these agreements are necessary to attract qualified directors and executive officers.

These contractual indemnification agreements may discourage shareholders from bringing a lawsuit against our directors and executive officers for breach of their fiduciary duty. These provisions also may have the effect of reducing the likelihood of derivative litigation against directors and executive officers, even though such an action, if successful, might otherwise benefit us and our shareholders. Furthermore, a shareholder's investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these insurance agreements.

Certain of our non-employee directors may, through their relationships with their employers or partnerships, be insured against certain liabilities in their capacity as members of our board of directors.

Equity Incentives

We believe that our ability to grant equity awards is a valuable and necessary compensation tool that allows us to attract and retain the best available personnel for positions of substantial responsibility, provides additional incentives to employees and promotes the success of our business. In accordance with French corporate law and tax considerations, we have granted several different equity incentive instruments to our directors, executive officers, employees and other service providers. These are:

- employee warrants (otherwise known as *bons de souscription de parts de créateur d'entreprise* or BSPCE), granted only to employees of Cellectis;
- non-employee warrants (otherwise known as *bons de souscription d'actions* or BSA), granted only to non-employee directors and other service providers or consultants not eligible for employee warrants;
- restricted, or free, shares (otherwise known as *actions gratuites*); and
- stock options (otherwise knows as *options de souscription d'actions*).

Our board of directors' authority to grant these equity incentive instruments and the aggregate amount authorized to be granted under these instruments must be approved by a two-thirds majority of the shares held by our shareholders present, represented or voting by mail at the relevant extraordinary shareholders' meeting. Such extraordinary general meeting shall determine the aggregate amount of equity incentive instruments to be granted and the period during which such authorization may be used by our board of directors, which cannot exceed 18 months for non-employee warrants and employee warrants and 38 months for stock option and restricted (free) shares, in each case beginning from the date of the applicable shareholders' approval. The authority of our board of directors to grant equity incentives may be extended or increased only by extraordinary shareholders' meetings. As a result, we typically request that our shareholders authorize new pools of equity incentive instruments at every annual shareholders' meeting.

Employee warrants and non-employee warrants are usually granted under similar terms. They expire ten years after the date of grant if not exercised earlier according to their vesting schedule (see below). In general, employee warrants (BSPCE) and non-employee warrants (BSA) no longer continue to vest following termination of the employment, office or service of the holder and all vested shares must be exercised within post-termination exercise periods set forth in the applicable equity award grant documents. In the event of certain changes in our share capital structure, such as a consolidation or share split or dividend, French law and applicable equity award grant documentation provide for appropriate adjustments of the numbers of shares issuable and/or the exercise price of the outstanding warrants or share options.

Employee Warrants (BSPCE)

Employee warrants were granted only to employees of Cellectis who are French tax residents, since these employee warrants carry favorable tax and social security treatment for French tax residents. Employee warrants may also be granted to corporate officers of the company having an employee tax status (chairman, general manager or deputy general manager). Similar to stock options, they entitle a holder to exercise the warrant for the underlying vested shares at an exercise price per share determined by our board of directors equal to the higher of (1) the fair market value of an ordinary share on the date of grant and (2) if the company has carried out a capital increase within six months prior to the attribution of employee warrants, the issue price of such capital increase.

Employee warrants may only be issued by growth companies meeting certain criteria, which we no longer meet. Most significantly, the issuer must have been registered for less than 15 years and 25% of the issuer's share capital must have been continuously held since the company's formation by natural persons or by holding companies, of which 75% of such holding company's share capital is held by natural persons. The calculation of such threshold does not include venture capital mutual investment fund (*fonds commun de placement à risques*), specialized professional funds (*fonds professionnels spécialisés*), private equity funds (*fonds professionnels de capital investissement*), local investment funds (*fonds d'investissement de proximité*) and innovation-focused mutual funds (*fonds commun de placement dans l'innovation*).

We are no longer eligible to issue employee warrants since we no longer satisfy the legal conditions necessary to issue such employee warrants.

Our outstanding employee warrants were generally granted (1) either subject to a three-year vesting schedule under which one-third (1/3) of the employee warrants vest upon the first anniversary of grant and one-third (1/3) at the expiration of each year thereafter, subject to continued service, or (2) subject to a five-year vesting schedule under which 40% of the employee warrants vest upon the second anniversary of grant and 20% at the expiration of each year thereafter, subject to continued service. In each case, any warrant which is not exercised before the tenth anniversary of the date of grant will automatically lapse. Some of our employee warrants provide that in the event of a change in control, as defined in the relevant grant documents, unvested warrants will automatically vest in full.

The term of each employee warrant is 10 years from the date of grant or, in the case of death or disability of the beneficiary during such ten-year period, 6 or 9 months respectively from the death or disability of the beneficiary. An employee warrant shall remain exercisable for three months following a beneficiary's termination of continuous status with the company.

Employee warrants are not transferable and may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by laws of descent or distribution and may be exercised, during the lifetime of the warrant holder, only by the warrant holder.

As of December 31, 2016, 147,861 employee warrants exercisable for an aggregate of 153,585 ordinary shares at a weighted average exercise price of €12.88 per share, were outstanding, of which 8,000 employee warrants are held by our directors and executive officers.

Non-Employee Warrants (BSA)

Non-employee warrants are granted by our board of directors to third-party service providers, consultants and directors who are not eligible for employee warrants. In addition to any exercise price payable by a holder upon the exercise of any non-employee warrant, non-employee warrants need to be subscribed for at a price at least equal to five percent (5%) of the average price for a company share weighted by volume on the market or markets on which the company shares are listed during the five (5) trading days prior to the date of the grant of said non-employee warrant by the board of directors (rounded up to the next euro cent, if necessary).

Pursuant to delegations granted at our annual shareholders' meeting, our board of directors determines the recipients, dates of grant and exercise price of non-employee warrants, the number of non-employee warrants to be granted and the terms and conditions thereof, including their vesting schedule. The term of each non-employee warrant is generally 10 years from the date of grant.

Our non-employee warrants are generally granted subject to a three-year vesting, subject to continued service.

As of December 31, 2016, 879,400 non-employee warrants exercisable for an aggregate of 879,400 ordinary shares at a weighted average exercise price of €28.11 per share, were outstanding, all of which are held by certain of our directors and some of our consultants and exercisable at the date hereof. During the year ended December 31, 2016, Trout Capital LLC exercised its 50 000 non-employee warrants.

Free Shares

Under our 2012, 2013, 2014 and 2015 Free Share Plans, we have granted free shares to certain of our employees and officers. Our current plan, the 2015 Free Share Plan, was adopted by our board of directors on May 18, 2015.

Free shares may be granted to any individual employed by us or by any affiliated company. Free shares may also be granted to our Chairman, and our Chief Executive Officer. However, no free share may be granted to a beneficiary holding more than 10% of our share capital or to a beneficiary who would hold more than 10% of our share capital as a result of such grant.

Our board of directors has the authority to administer the 2012, 2013, 2014 and 2015 Free Share Plans. Subject to the terms of these Free Share Plans, our board of directors determines the recipients, the dates of grant, the number of free shares to be granted and the terms and conditions of the free shares, including the length of their vesting period (starting on the grant date, during which the beneficiary holds a right to acquire shares for free but has not yet acquired any shares) and holding period (starting when the shares are issued and definitively acquired but may not be transferred by the recipient) within the limits determined by the shareholders. Our shareholders have determined that the vesting period must be at least two years from the date of grant and the holding period must be two years from the end of the vesting period, with no holding period applicable to beneficiaries for whom the vesting period was four years or longer.

The board of directors has the authority to modify awards outstanding under our Free Share Plans, subject to the consent of the beneficiary for any modification adverse to such beneficiary. For example, the board has the authority to release a beneficiary from the continued service condition during the vesting period after the termination of the employment.

The free shares granted under the Free Share Plans will be definitively acquired at the end of the vesting period as set by our board of directors subject to continued service during the vesting period, except if the board releases a given beneficiary from this condition upon termination of his/her employment contract. At the end of the vesting period, the beneficiary will be the owner of the shares. However, the shares may not be sold, transferred or pledged during the holding period. In the event of disability before the end of the vesting period, the free shares shall be definitively acquired by the beneficiary on the date of disability. In the event the beneficiary dies during the vesting period, the free shares shall be definitively acquired at the date of the request of allocation made by his or her beneficiaries in the framework of the inheritance provided that such request is made within six months from the date of death.

- 440,550 free shares granted in 2015 under the 2015 Free Share Plan will be acquired on May 18, 2017 for the French residents and May 18, 2019 for the Non-French residents subject to the continued service of the beneficiaries, of which 210,000 free shares have been granted to our directors and officers.

Stock Options

On March 24, 2015, our board of directors adopted our 2015 Stock Option Plan, which will expire on April 16, 2018 and on October 28, 2016, our board of directors adopted our 2016 Stock Option Plan which will expire on July 18, 2019. The 2015 Stock Option Plan and the 2016 Stock Option Plan (collectively, the "Stock Option Plans") follow the same rules. Stock Options issued pursuant to the Stock Option Plans provide the holder with the right to purchase a specified number of ordinary shares from the Company at a fixed exercise price payable at the time the Stock Option is exercised, as determined by our board of directors. The Stock Option Plans generally provides that the exercise price for any Stock Option will be no less than ninety-five percent (95%) of the average selling prices of a share at close of trading on said market quoted during the twenty trading days immediately preceding the day of the board of directors decision to allocate the options. The maximum number of ordinary shares, which may be subject to stock options issued is 7,354,930 ordinary shares under the 2015 Stock Option Plan and is 3,217,861 ordinary shares under the 2016 Stock Option Plan. Incentive Stock Options and Non-qualified stock options may be granted under the Stock Option Plans.

Stock Options may be granted to any individual employed by us or by any affiliated company. Stock Options may also be granted to our Chairman, our general manager and to our deputy general managers. Incentive Stock Options granted to owners of shares possessing 10% or more of the total voting power in the Company will be subject to limitations on their exercise price and term.

Our board of directors has the authority to administer and interpret the Stock Option Plans. Subject to the terms of the Stock Option Plans, our board of directors determines the recipients, the dates of grant, the exercise price of the stock options, the number of stock options to be granted and the terms and conditions of the stock options, including the length of their vesting period. Our board of directors is not required to grant stock options with vesting and exercise terms that are the same for every participant. The term of each stock option granted under the Stock Option Plans will generally be 10 years from the date of grant. Further, Stock Options will generally terminate on the earlier of when the beneficiary ceases to be an employee or the Company or upon certain transactions involving the Company.

The board of directors has the authority to modify awards outstanding under our Stock Option Plans, subject to the written consent of the beneficiary for any modification adverse to such beneficiary. For example, the board has the authority to extend a post-termination exercise period.

Stock Options granted under the Stock Option plans generally may not be sold, transferred or pledged in any manner other than by will or by the laws of descent or distribution. In the event of disability, unless otherwise resolved by our board of directors, the beneficiary's right to exercise the vested portion of his or her option generally terminates six months after the last day of such beneficiary's service, but in any event no later than the expiration of the maximum term of the applicable stock options. In the event the beneficiary dies during the vesting period, then, unless otherwise resolved by our board of directors, the beneficiary's estate or any recipient by inheritance or bequest may exercise any vested portion within the six months following the date of death, but in any event no later than the expiration of the maximum term of the applicable stock options.

As of the date of this Annual Report:

- 82,123 free shares granted under the 2012 Free Share Plan vested on September 18, 2014 are now exercisable, of which 40,981 shares are held by our directors and officers;
- 60,000 free shares granted under the 2013 Free Share Plan vested on March 19, 2015 and are under the holding period of two years, of which 26,000 free shares are held by our directors and officers;
- 98,000 free shares granted under the 2014 Free Share Plan vested on April 10, 2016 and are under the holding period of two years, of which 83,000 free shares have been granted to our directors and officers; and
- 50,000 free shares granted in 2015 to Mathieu Simon under terms and conditions similar to the 2014 Free Share Plan vested on January 8, 2017, and are under the holding period of two years.

As of the date of this Annual Report, a maximum of 7,354,930 stock options may be optioned and issued under the 2015 Stock Option Plan. This figure includes 2,060,602 stock options granted under the 2015 Stock Option Plan on March 14, 2016 with an exercise price of € 22.44 per ordinary share, of which 1,050,062 stock options were granted to certain of our directors and executive officers.

As of the date of this Annual Report, a maximum of 3,217,861 stock options may be optioned and issued under the 2016 Stock Option Plan. This figure includes 2,773,028 stock options granted under the 2016 Stock Option Plan on October 28, 2016 with an exercise price of €17.90 per ordinary share, of which 1,526,474 were granted to certain of our directors and executive officers.

Calyxt, Inc.

In December 2014, our subsidiary Calyxt granted options representing a 0.6% interest to a small group of its employees and two of our directors and executive officers, and it reserved an additional 0.1% for further grants. Calyxt made these grants to provide incentives for these employees that are directly linked to the performance of Calyxt, rather than Cellectis as a whole.

In September 2015, our subsidiary Calyxt granted options representing a 1.18% interest to a group of its employees and two of our directors and executive officers.

In April 2016, our subsidiary Calyxt granted options representing a 8.6% interest to a group of its employees and ten of our directors, executive officers, employees and consultants.

C. Board Practices

Board Composition

Under French law and our By-laws, our board of directors must be composed of between three and eight members. Within this limit, the number of directors is determined by our shareholders. Directors are elected, re-elected and may be removed at a shareholders' general meeting with a simple majority vote of our shareholders. Pursuant to our By-laws, our directors are elected for three-year terms. In accordance with French law, our By-laws also provide that our directors may be removed with or without cause by the affirmative vote of the holders of at least a majority of the votes of the shareholders present, represented by a proxy or voting by mail at the relevant ordinary shareholders' meeting, and that any vacancy on our board of directors resulting from the death or resignation of a director, provided there are at least three directors remaining, may be filled by vote of a majority of our directors then in office provided that there has been no shareholders meeting since such death or resignation. Directors chosen or appointed to fill a vacancy shall be elected by the board for the remaining duration of the current term of the replaced director. The appointment must then be ratified at the next shareholders' general meeting. In the event the board would be composed of less than three directors as a result of a vacancy, the remaining directors shall immediately convene a shareholders' general meeting to elect one or several new directors so there are at least three directors serving on the board, in accordance with French law.

We currently have eight directors. The following table sets forth the names of our directors, the years of their initial appointment as directors and the expiration dates of their current term.

Name	Current Position	Year of Initial Appointment	Term Expiration Year
André Choulika, Ph.D.	Chairman	2000	2018
Mathieu Simon, M.D.	Director	2013	2019
David Sourdive, Ph.D.	Director	2000	2018
Alain Godard	Director	2007	2018
Pierre Bastid	Director	2011	2017
Laurent Arthaud	Director	2011	2017
Annick Schwebig, M.D.	Director	2011	2017
Jean-Marie Messier	Director	2015	2018

Director Independence

As a foreign private issuer, under the listing requirements and rules of Nasdaq, we are not required to have independent directors on our board of directors, except with respect to our audit and finance committee, for which the Nasdaq listing requirements permit specified phase-in schedules.

Our board of directors has determined that, applying the applicable rules and regulations of the SEC and the Nasdaq listing standards, all of our directors, except Drs. Choulika, Sourdive and Simon, qualify as "independent directors." In making such determination, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances our board of directors deemed relevant in determining the director's independence, including the number of ordinary shares beneficially owned by the director and his or her affiliated entities.

Role of the Board in Risk Oversight

Our board of directors is primarily responsible for the oversight of our risk management activities and has delegated to the audit and finance committee the responsibility to assist our board of directors in this task. While our board of directors oversees our risk management, our management is responsible for day-to-day risk management processes. We believe this division of responsibilities is the most effective approach for addressing the risks we face. Our board of directors expects our management to consider risk and risk management in each business decision, to proactively develop and monitor risk management strategies and processes for day-to-day activities and to effectively implement risk management strategies adopted by the board.

Corporate Governance Practices

As a French *société anonyme*, we are subject to various corporate governance requirements under French law. In addition, as a foreign private issuer listed on the Nasdaq Global Market, we will be subject to the Nasdaq corporate governance listing standards. However, the Nasdaq Global Market's listing standards provide that foreign private issuers are permitted to follow home country corporate governance practices in lieu of the Nasdaq rules, with certain exceptions. Certain corporate governance practices in France may differ significantly from corporate governance listing standards. For example, neither the corporate laws of France nor our By-laws require that (i) a majority of our directors be independent, (ii) our compensation committee include only independent directors, or (iii) our independent directors hold regularly scheduled meetings at which only independent directors are present. Other than as set forth below, we currently intend to comply with the corporate governance listing standards of Nasdaq to the extent possible under French law. However, we may choose to change such practices to follow home country practice in the future.

Although we are a foreign private issuer, we are required to comply with Rule 10A-3 of the Exchange Act, relating to audit committee composition and responsibilities. Rule 10A-3 provides that the audit committee must have direct responsibility for the nomination, compensation and choice of our auditors, as well as control over the performance of their duties, management of complaints made, and selection of consultants. Under Rule 10A-3, if the laws of a foreign private issuer's home country require that any such matter be approved by the board of directors or the shareholders of the Company, the audit committee's responsibilities or powers with respect to such matter may instead be advisory. Under French law, the audit committee may only have an advisory role and appointment of our statutory auditors, in particular, must be decided by our shareholders at our annual meeting.

In addition, Nasdaq rules require that a listed company specify that the quorum for any meeting of the holders of share capital be at least 33 1/3% of the outstanding shares of the company's common voting stock. We follow our French home country practice, rather than complying with this Nasdaq rule. Consistent with French Law, our By-laws provide that when first convened, general meetings of shareholders may validly convene only if the shareholders present or represented hold at least (1) 20% of the voting shares in the case of an ordinary general meeting or of an extraordinary general meeting where shareholders are voting on a capital increase by capitalization of reserves, profits or share premium, or (2) 25% of the voting shares in the case of any other extraordinary general meeting. If such quorum required by French law is not met, the meeting is adjourned. There is no quorum requirement under French law when an ordinary general meeting or an extraordinary general meeting where shareholders are voting on a capital increase by capitalization of reserves, profits or share premium is reconvened, but the reconvened meeting may consider only questions that were on the agenda of the adjourned meeting. When any other extraordinary general meeting is reconvened, the required quorum under French law is 20% of the shares entitled to vote. If a quorum is not met at a reconvened meeting requiring a quorum, then the meeting may be adjourned for a maximum of two months.

Further, Nasdaq rules require that listed companies have a nominations committee comprised solely of independent directors. We follow our French home country practice rather than complying with this Nasdaq rule.

Finally, Nasdaq rules require shareholder approval when a plan or other equity compensation arrangement is established or materially amended. While the Company may, from time to time, obtain shareholder approval of an equity compensation arrangement in order to obtain advantageous tax treatment or otherwise, as a general matter, we intend to follow our French home country practice, which does not require shareholder approval of such plans or arrangements, rather than complying with this Nasdaq rule.

Board Committees

The board of directors has established an audit and finance committee and a compensation committee, each of which operates pursuant to a separate charter adopted by our board of directors. The board of directors has also established a scientific committee. The composition and functioning of all of our committees will comply with all applicable requirements of the French Commercial Code, the Exchange Act, the Nasdaq Global Market, and the rules and regulations of the SEC.

In accordance with French law, committees of our board of directors will only have an advisory role and can only make recommendations to our board of directors. As a result, decisions will be made by our board of directors taking into account non-binding recommendations of the relevant board committee.

Audit and Finance Committee. Our audit and finance committee reviews our internal accounting procedures, consults with and reviews the services provided by our independent registered public accountants and assists our board of directors in its oversight of our corporate accounting and financial reporting. Currently, our audit and finance committee is comprised of three members of the board of directors: Messrs. Bastid, Arthaud, and Messier.

The duties specifically assigned to the audit and finance committee by our board of directors include, but are not limited to:

with regard to our financial statements:

- review on a preliminary basis and express its opinion on the draft annual and quarterly financial statements prior to the board of directors officially receiving the financial statements;
- examine the critical accounting policies and practices of the Company, including their relevance and consistency used for the preparation of the Company's consolidated financial statements and rectify any failure to comply with these policies and practices;
- monitor the scope of consolidation and review, where necessary, any explanations in connection thereto;
- interview, when necessary, the statutory auditors, the chairman of the board of directors, the chief executive officer, the chief financial officer, the employees in charge of our internal controls or any other management personnel; these discussions may take place, where required, without the presence of the chairman of our board of directors and the chief executive officer; and
- examine—prior to their publication—the draft annual and interim financial statements, the draft annual report and any other draft financial statements (including projected financial statements) prepared for the needs of upcoming material transactions together with the related press releases;

with regard to internal controls:

- assess the efficiency and quality of internal control systems and procedures within the consolidated Company;
- examine, with the persons in charge of the internal audit, and, if necessary, outside of the presence of the chairman of the board of directors and the chief executive officer, the contingency and action plans with respect to internal audit, the findings following the implementation of these actions and the recommendations and follow-up actions in connection therewith; and
- entrust the internal audit department with any mission which the committee deems necessary;

with regard to external controls:

- examine any question relating to the appointment, renewal or dismissal of our statutory auditors and their fees regarding the performance of their control review functions;
- oversee the rules relating to the use of the statutory auditors for assignments other than the audit of the financial statements and, more generally, ensure that we comply with the principles guaranteeing the statutory auditors' independence;
- at least annually, review and discuss the information provided by management and the auditors relating to the independence of the audit firm;
- pre-approve any services entrusted to the statutory auditors which is outside of the scope of the annual audit;
- review every year with the statutory auditors all fees paid to by the Company and its subsidiaries to any networks to which the auditors belong, their work plan, their findings and recommendations, as well as actions taken by us following such recommendations;
- review and discuss with the statutory auditors their comments on internal controls over financial reporting and any matters that have come to the attention of the statutory auditors that lead them to believe that modification to our disclosures about changes in internal control over financial reporting is necessary for management's certifications pursuant to Section 302 of the Sarbanes-Oxley Act;
- discuss if necessary any points of disagreement between the statutory auditors and the officers of the Company that may arise within the scope of these operations; and
- review and discuss with the statutory auditors the plans for, and the scope of, the annual audit and other examinations; and

with regard to risks:

- review on a regular basis the financial situation, the cash position and the material risks and undertakings of the Company and its subsidiaries; and
- review the risk management policy and the process implemented to evaluate and manage these risks.

Compensation Committee. Our compensation committee assists our board of directors in reviewing the compensation of our executive officers and directors and makes recommendations in respect thereof. Currently, our compensation committee is comprised of two members of the board of directors: Mr. Godard and Dr. Schwebig. The principal duties and responsibilities of our compensation committee include, but are not limited to:

- review the compensation of our employees and managers of the Company and its subsidiaries (fixed and variable compensations, bonus, etc.) and make any recommendation to our board of directors in connection therewith;
- review equity incentive plans (non-employee warrants, stock options, restricted (free) shares, etc.) and make recommendations to our board of directors in connection therewith;
- make recommendations to our board of directors regarding the compensation, pension and insurance plans, benefits in kind and other various pecuniary rights, of officers, as well as the allocation of equity incentive instruments granted to executive officers and directors of the Company;
- evaluate and make recommendations on the compensation policies and programs of executive officers and on the compensation of directors;
- recommend the approval, adoption and amendment of all cash- and equity-based incentive compensation plans in which any of our executive officers or directors participate and all other equity-based plans;
- review any proposed employment agreement with, and any proposed severance or retention plans or agreements applicable to, any of our executive officers;
- review, at least annually, corporate goals and objectives relevant to the compensation of our executive officers; and
- evaluate the performance of the executive officers in light of corporate goals and objectives and recommend compensation levels for these executive officers based on those evaluations and any other factors the compensation committee deems appropriate.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics, or the Code of Conduct, that is applicable to all of our employees, executive officers and directors. The Code of Conduct is available on our website at *www.cellectis.com*. Our board of directors will be responsible for overseeing the Code of Conduct and will be required to approve any waivers of the Code of Conduct for employees, executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements, will be disclosed on our website.

D. Employees

As of December 31, 2016, we had 122 employees, 114 of whom are full-time, 41of whom hold Ph.D. or M.D. degrees, 91 of whom were engaged in research and development activities and 31 of whom were engaged in business development, legal, finance, information systems, facilities, human resources or administrative support. As of December 31, 2016, 78 of our employees were located in France and 44 of our employees were located in the United States. None of our employees is subject to a collective bargaining agreement. We consider our relationship with our employees to be good.

E. Share Ownership

For information regarding the share ownership of our directors and executive officers, see "Item 6.B—Compensation" and "Item 7.A—Major Shareholders."

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders.

The following table sets forth information with respect to the beneficial ownership of our ordinary shares as of February 28, 2017 for:

- each beneficial owner of more than 5% of our outstanding ordinary shares;
- each of our directors and executive officers; and
- all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities and include ordinary shares that can be acquired within 60 days of February 28, 2017. The percentage ownership information shown in the table is based upon 35,335,060 ordinary shares outstanding as of February 28, 2017.

Except as otherwise indicated, all of the shares reflected in the table are ordinary shares and all persons listed below have sole voting and investment power with respect to the shares beneficially owned by them, subject to applicable community property laws. The information is not necessarily indicative of beneficial ownership for any other purpose.

In computing the number of ordinary shares beneficially owned by a person and the percentage ownership of that person, we deemed outstanding ordinary shares subject to options and warrants held by that person that are immediately exercisable or exercisable within 60 days of February 28, 2017. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Beneficial ownership representing less than 1% is denoted with an asterisk (*). The information in the table below is based on information known to us or ascertained by us from public filings made by the shareholders in France. Except as otherwise indicated in the table below, addresses of the directors, executive officers and named beneficial owners are in care of Cellectis, 8, rue de la Croix Jarry, 75013 Paris, France.

Name of Beneficial Owner	Ordinary Shares Beneficially Owned	
	Number	Percentage
5% Shareholders:		
Bpifrance Participations	2,879,500	8.15%
Pfizer, Inc. (1)	2,817,630	7.97%
Fidelity Management & Research Company	3,464,406	9.80%

Name of Beneficial Owner	Ordinary Shares Beneficially Owned	
	Number	Percentage
Directors and Executive Officers:		
André Choulika, Ph.D (2)	1,170,794	3.31%
Mathieu Simon, M.D (3)	340,375	*
David Sourdive, Ph.D. (4)	1,131,484	3.20%
Philippe Duchateau, Ph.D. (5)	168,460	*
Eric Dutang (9)	35,756	*
Julia Berretta (7)	111,384	*
Marie-Bleuenn Terrier (8)	118,726	*
Loan Hoang-Sayag (10)	11,771	*
Stephan Reynier (6)	54,564	*
Federico Tripodi	0	*
Alain Godard (11)	84,939	*
Pierre Bastid (12)	3,418,334	9.67%
Laurent Arthaud	0	*
Annick Schwebig, M.D. (13)	51,997	*
Jean-Marie Messier (14)	63,390	*
All directors and executive officers as a group (15 persons)	6,761,974	19.14%

* Represents beneficial ownership of less than one per cent.

(1) The address of Pfizer, Inc. is 235 East 42nd Street, New York, New York 10017. Shares beneficially owned by Pfizer, Inc. were acquired by Pfizer OTC B.V. on July 31, 2014 in the context of a share capital increase in connection with the Research and Collaboration Agreement between Pfizer Inc. and Cellectis S.A., dated June 17, 2014.

(2) Includes 109,586 ordinary shares that Mr. Choulika has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 75,000 ordinary shares that Mr. Choulika has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 40,175 ordinary shares that Mr. Choulika has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.

(3) Includes 87,671 ordinary shares that Mr. Simon has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 65,625 ordinary shares that Mr. Simon has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 35,153 ordinary shares that Mr. Simon has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.

(4) Includes 87,671 ordinary shares that Mr. Sourdive has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 65,625 ordinary shares that Mr. Sourdive has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 35,153 ordinary shares that Mr. Sourdive has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan. Includes 703,041 shares held by Viveoo SARL.

(5) The ordinary shares shown include 8,000 ordinary shares that Dr. Duchateau has the right to acquire pursuant to employee warrants, 65,754 ordinary shares that Dr. Duchateau has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 56,250 ordinary shares that Dr. Duchateau has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 30,131 ordinary shares that Dr. Duchateau has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.

(6) Includes 19,726 ordinary shares that Mr. Reynier has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 15,000 ordinary shares that Mr. Reynier has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 14,714 ordinary shares that Mr. Reynier has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.

(7) Includes 43,835 ordinary shares that Mrs. Berretta has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 33,750 ordinary shares that Mrs. Berretta has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 the Stock Option Plan and 30,131 ordinary shares that Mrs. Berretta has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.

(8) Includes 43,835 ordinary shares that Mrs. Terrier has the right to acquire pursuant to stock options granted in March 2015 under the 2015 Stock Option Plan, 33,750 ordinary shares that Mrs. Terrier has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 35,153 ordinary shares that Mrs. Terrier has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan

(9) Includes 5,625 ordinary shares that Mr. Dutang has the right to acquire pursuant to stock options granted in September 2015 governed by the 2015 Stock Option Plan and 30,131 ordinary shares that Mr. Dutang has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.
(10) Includes 11,771 ordinary shares that Mrs. Hoang-Sayag has the right to acquire pursuant to stock options granted in March 2016 under the 2015 Stock Option Plan.
(11) The ordinary shares include 33,333 non-employee warrants which are exercisable since March 27, 2016, 16,666 non-employee warrants, which are exercisable since September 8, 2016, and 13,391 non-employee warrants, which are exercisable since March 14, 2017.
(12) The ordinary shares include 33,333 non-employee warrants which are exercisable since March 27, 2016, 16,666 non-employee warrants, which are exercisable since September 8, 2016, 13,391 non-employee warrants, which are exercisable since March 14, 2017 and includes 3,298,944 shares held by Zaka Rendement S.A.
(13) The ordinary shares include 20,000 non-employee warrants which are exercisable since March 27, 2016, 16,666 non-employee warrants, which are exercisable since September 8, 2016, and 13,391 non-employee warrants, which are exercisable since March 14, 2017.
(14) The ordinary shares include 33,333 non-employee warrants which are exercisable since March 27, 2016, and 16,666 non-employee warrants, which are exercisable since September 8, 2016, and 13,391 non-employee warrants, which are exercisable since March 14, 2017.

The significant changes in the percentage ownership held by our principal shareholders since January 1, 2014 are as a result of the transactions described in our prospectus dated March 26, 2015, filed with the SEC pursuant to Rule 424(b), under the heading "Related Party Transactions—Transactions with Our Principal Shareholders, Directors and Executive Officers" and the dilution resulting from our public offering.

None of our principal shareholders has voting rights different than our other shareholders.

As of February 28, 2017, assuming that all of our ordinary shares represented by ADSs are held by residents of the United States, we estimate that approximately 40.7% of our outstanding ordinary shares were held in the United States by 64 holders of record.

B. Related Party Transactions

Since January 1, 2012, we have engaged in the following transactions with our directors, executive officers and holders of more than 5% of our outstanding voting securities and their affiliates, which we refer to as our related-parties.

Transactions with Our Principal Shareholders, Directors and Executive Officers

Alliance agreement

Pfizer purchased 10% of our then-outstanding ordinary shares on July 31, 2014. The revenues booked for Pfizer in the years ended December 31, 2014, 2015 and 2016 amount to €9.2 million, €23.8 million and €22.9 million respectively. As of December 31, 2016, the outstanding receivables were €0.3 million and Pfizer had a 8.03% ownership in Cellectis.

Conditional advances and subsidies

Bpifrance, which was a shareholder of Cellectis, has granted us conditional advances and subsidies. There was no outstanding conditional advances and subsidies as of December 31, 2016. See Note 11.3 of our audited consolidated financial statements.

Agreements with Our Directors and Executive Officers

Director and Executive Officer Compensation

See "Item 6.B—Compensation of Directors and Executive Officers" for information regarding compensation of directors and executive officers

Equity Awards

Since January 1, 2016, we have granted equity awards to certain of our directors and executive officers:

- On March 14, 2016, we granted 1,050,062 stock options to certain of our Directors and Executive Officers; and
- On March 14, 2016, we granted 200,875 non-employee warrants (BSA) to our Directors.
- On October 28, 2016, we granted 1,526, 474 stock options to certain of our Directors and Executive Officers; and
- On October 28, 2016, we granted 160,000 non-employee warrants (BSA) to our Directors.

See "Item. 7A—Major Shareholders" for information regarding equity awards to certain of our executive officers.

Indemnification Agreements

See "Item. 6B—Limitations on Liability and Indemnification Matters."

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Related-Party Transactions Policy

We have adopted a related-party transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related-party transactions. The policy became effective immediately upon the completion of our initial public offering. For purposes of our policy only, a related-party transaction is a transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we and any related parties are, were or will be participants, which are not (1) in the ordinary course of business, (2) at arms' length and (3) in which the amount involved exceeds $120,000. Transactions involving compensation for services provided to us as an employee or director are not covered by this policy. For purposes of this policy, a related party is any executive officer, director (or nominee for director) or beneficial owner of more than five percent (5%) of any class of our voting securities, including any of their respective immediate family members and any entity owned or controlled by such persons.

Under the policy, related-party transactions must be reported to us by all related parties. If a transaction has been identified as a related-party transaction, our management must present information regarding the related-party transaction to our board of directors for review, consideration and approval. Certain transactions may be presented to the Audit and Finance Committee, which will determine whether the transaction is a related-party transaction, in which case the related-party transaction will be submitted to our board of directors. The presentation will include a description of, among other things, the material facts, the interests in the transaction, direct and indirect, of the related parties, the benefits to us of the transaction and whether the transaction is on terms that are comparable to the terms available to or from, as the case may be, an unrelated third-party or to or from employees generally. In addition, under our Code of Business Conduct and Ethics, our employees and directors have an affirmative responsibility to disclose any transaction or relationship that reasonably could be expected to give rise to a conflict of interest. In considering related-party transactions, our board of directors, or to the extent permitted by applicable law an independent committee of our board of directors, will take into account the relevant available facts and circumstances including, but not limited to:

- the benefits and perceived benefits to us;
- the opportunity costs of alternative transactions;
- the materiality and character of the related party's interest;
- the actual or apparent conflict of interest of the related party; and
- the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

The policy requires that, in determining whether to approve, ratify or reject a related-party transaction, our board of directors, or if permitted by applicable law an independent committee of our board of directors, must consider, in light of known circumstances, whether the transaction is in, or is not inconsistent with, our best interests and those of our shareholders, as our board of directors, or if permitted by applicable law an independent committee of our board of directors, determines in the good faith exercise of its discretion.

D. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

Our consolidated financial statements are appended at the end of this Annual Report starting at page F-1, and form a part hereof.

Legal Proceedings

From time to time, we may be involved in various claims and legal proceedings relating to claims arising out of our operations. We are not currently a party to any legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business or our cash flows. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Dividend Distribution

Approval of Dividends. Pursuant to French law, our board of directors may propose a dividend and/or reserve distribution for approval by the shareholders at the annual ordinary general meeting related to the statutory financial statements of Cellectis S.A.

Upon recommendation of our board of directors, our shareholders may decide to allocate all or part of any distributable profits to special or general reserves, to carry them forward to the next fiscal year as retained earnings or to allocate them to the shareholders as dividends. However, dividends may not be distributed when as a result of such distribution, our net assets are or would become lower than the amount of the share capital plus the amount of the legal reserves which, under French law, may not be distributed to shareholders (the amount of our share capital plus the amount of our legal and other reserves which may not be distributed was equal to €1.8 million on December 31, 2016). Moreover, the statutory accumulated deficit is €98.5 million December 31, 2016.

Our board of directors may distribute interim dividends after the end of the fiscal year but before the approval of the financial statements for the relevant fiscal year when the interim balance sheet, established during such year and certified by an auditor, reflects that we have earned distributable profits since the close of the last financial year, after recognizing the necessary depreciation and provisions and after deducting prior losses, if any, and the sums to be allocated to reserves, as required by law or the By-laws, and including any retained earnings. The amount of such interim dividends may not exceed the amount of the profit so defined.

Pursuant to recently passed legislation, if a dividend is declared we may be required to pay a dividend tax in an amount equal to 3% of the aggregate dividend paid by us.

Distribution of Dividends. Dividends are distributed to shareholders proportionally to their shareholding interests. In the case of interim dividends, distributions are made to shareholders on the date set by our board of directors during the meeting in which the distribution of interim dividends is approved. The actual dividend payment date is decided by the shareholders at an ordinary general shareholders' meeting or by our board of directors in the absence of such a decision by the shareholders. Shareholders that own shares on the actual payment date are entitled to the dividend.

Dividends may be paid in cash or, if the shareholders' meeting so decides, in kind, provided that all the shareholders receive a whole number of assets of the same nature paid in lieu of cash. Our By-laws provide that, subject to a decision of the shareholders' meeting taken by ordinary resolution, each shareholder may be given the choice to receive his dividend in cash or in shares.

B. Significant Changes

On February 6, 2017, Cellectis has received an Investigational New Drug (IND) approval from the U.S. Food and Drug Administration (FDA) to conduct Phase I clinical trials with UCART123, the Company's most advanced, wholly-controlled TALEN gene-edited product candidate, in patients with acute myeloid leukemia (AML) and blastic plasmacytoid dendritic cell neoplasm (BPDCN). This marks the first allogeneic, "off-the-shelf" gene-edited CAR T-cell product candidate that the FDA has approved for clinical trials. Cellectis intends to initiate Phase I trials in the first half of 2017.

On March 9, 2017, Servier, together with Pfizer Inc. and Cellectis announced that the FDA has granted Servier with an Investigational New Drug (IND) clearance to proceed in the United States. with the Phase I of the CALM Study.

ITEM 9. THE OFFER AND LISTING

A. Offer and Listing Details

Our ADS have been listed on Nasdaq under the symbol "CLLS" since March 24, 2015. Prior to that date, there was no public trading market for ADSs. Our ordinary shares have been trading on Alternext market of Euronext Paris under the symbol "ALCLS" since February 7, 2007. Prior to that date, there was no public trading market for ADSs or our ordinary shares. Our initial public offering in March 2015 was priced at $41.50 per ADS on March 24, 2015. The following tables set forth for the periods indicated the reported high and low sale prices per ADS on Nasdaq in U.S. dollars and per ordinary share on Alternext in euros.

Nasdaq

Period	High	Low
Annual		
2015 (beginning March 24, 2015)	$ 47.66	$ 23.67
2016	$ 33.64	$ 16.40
2017 (through March 22, 2017)	$ 24.37	$ 17.52
Quarterly		
First Quarter 2015 (beginning March 24, 2015)	$ 41.50	$ 34.58
Second Quarter 2015	$ 47.66	$ 30.65
Third Quarter 2015	$ 39.78	$ 25.71
Fourth Quarter 2015	$ 42.14	$ 23.67
First Quarter 2016	$ 30.16	$ 18.77
Second Quarter 2016	$ 33.64	$ 25.34
Third Quarter 2016	$ 28.35	$ 24.07
Fourth Quarter 2016	$ 23.24	$ 16.40
First Quarter 2017 (through March 22, 2017)	$ 24.37	$ 17.52
Monthly		
September 2016	$ 26.40	$ 24.07
October 2016	$ 23.24	$ 17.68
November 2016	$ 19.70	$ 16.56
December 2016	$ 18.25	$ 16.40
January 2017	$ 19.71	$ 17.52
February 2017	$ 23.38	$ 18.33
March 2017 (through March 22, 2017)	$ 24.37	$ 21.43

Alternext

Period	High	Low
Annual		
2012	€ 8.24	€ 4.80
2013	€ 7.70	€ 2.19
2014	€ 14.00	€ 2.40
2015	€ 40.90	€ 13.26
2016	€ 29.71	€ 14.99
2017 (through March 22, 2017)	€ 22.49	€ 16.33
Quarterly		
First Quarter 2015	€ 40.00	€ 13.26
Second Quarter 2015	€ 40.90	€ 27.76
Third Quarter 2015	€ 37.00	€ 23.67
Fourth Quarter 2015	€ 40.90	€ 21.20
First Quarter 2016	€ 27.74	€ 22.01
Second Quarter 2016	€ 29.71	€ 22.67
Third Quarter 2016	€ 25.18	€ 21.97
Fourth Quarter 2016	€ 20.81	€ 14.99
First Quarter 2017 (through March 22, 2017)	€ 22.49	€ 16.33
Monthly		
September 2016	€ 23.61	€ 21.40
October 2016	€ 20.81	€ 16.15
November 2016	€ 19.24	€ 14.99
December 2016	€ 16.99	€ 15.80
January 2017	€ 18.45	€ 16.33
February 2017	€ 21.99	€ 17.00
March 2017 (through March 22, 2017)	€ 22.49	€ 20.26

B. Plan of Distribution

Not applicable.

C. Markets

The ADS have been listed on Nasdaq under the symbol “CLLS” since March 24, 2015 and our ordinary shares have been listed on the Alternext under the symbol “ALCLS” since February 7, 2007.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

The information set forth in our prospectus dated March 24, 2015, filed with the SEC pursuant to Rule 424(b), under the headings "Description of Share Capital—Key Provisions of our By-Laws and French Law Affecting our Ordinary Shares," "Limitations Affecting Shareholders of a French Company" and "Differences in Corporate Law" is incorporated herein by reference.

C. Material Contracts

We entered into an underwriting agreement among Merrill Lynch, Pierce, Fenner & Smith Incorporated and Jefferies LLC, as representatives of the underwriters, on March 24, 2015, with respect to the ADSs sold in our initial public offering. We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect of such liabilities. For additional information on our material contracts, please see Item 4 and Item 6 of this Annual Report.

D. Exchange Controls

Under current French foreign exchange control regulations there are no limitations on the amount of cash payments that we may remit to residents of foreign countries. Laws and regulations concerning foreign exchange controls do, however, require that all payments or transfers of funds made by a French resident to a non-resident such as dividend payments be handled by an accredited intermediary. All registered banks and substantially all credit institutions in France are accredited intermediaries.

E. Taxation

Material U.S. Federal Income Tax Considerations

The following is a discussion of the material U.S. federal income tax consequences of owning and disposing of ADSs. This summary does not address any aspect of U.S. federal non-income tax laws, such as U.S. federal estate and gift tax laws, or state, local or non-U.S. tax laws, and does not purport to be a comprehensive description of all of the U.S. tax considerations that may be relevant to particular holders.

YOU SHOULD CONSULT YOUR OWN TAX ADVISORS CONCERNING THE U.S. FEDERAL, STATE, LOCAL AND NON-U.S. TAX CONSEQUENCES OF OWNING AND DISPOSING OF ADSs IN YOUR PARTICULAR SITUATION.

The discussion applies to you only if you hold the ADSs as capital assets for U.S. federal income tax purposes (generally, for investment). This section does not apply to you if you are a member of a special class of holders subject to special tax rules, including:

- a broker;
- a dealer in securities, commodities or foreign currencies;
- a trader in securities that elects to use a mark-to-market method of accounting for your securities holdings;
- a bank or other financial institution;
- a tax-exempt organization;
- an insurance company;
- a regulated investment company;
- an investor who is a U.S. expatriate, former U.S. citizen or former long term resident of the United States;
- a mutual fund;
- an individual retirement or other tax-deferred account;
- a holder liable for alternative minimum tax;
- a holder that actually or constructively owns 10% or more, by voting power, of our voting stock;
- a partnership or other pass-through entity for U.S. federal income tax purposes;
- a holder that holds ADSs as part of a straddle, hedging, constructive sale, conversion or other integrated transaction for U.S. federal income tax purposes; or
- a U.S. holder whose functional currency is not the U.S. Dollar.

This section is based on the Internal Revenue Code of 1986, as amended, or (the Code), existing and proposed income tax regulations issued under the Code, legislative history, and judicial and administrative interpretations thereof, all as of the date of this Annual Report. All of the foregoing are subject to change at any time, and any change could be retroactive and could affect the accuracy of this discussion. In addition, the application and interpretation of certain aspects of the passive foreign investment company, or PFIC, rules, referred to below, require the issuance of regulations which in many instances have not been promulgated and which may have retroactive effect. There can be no assurance that any of these regulations will be enacted or promulgated, and if so, the form they will take or the effect that they may have on this discussion. This discussion is not binding on the U.S. Internal Revenue Service, or IRS, or the courts. No ruling has been or will be sought from the IRS with respect to the positions and issues discussed herein, and there can be no assurance that the IRS or a court will not take a different position concerning the U.S. federal income tax consequences of an investment in the ADSs or that any such position would not be sustained.

You are a "U.S. holder" if you are a beneficial owner of ADSs and you are:

- a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust if (1) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person for U.S. federal income tax purposes.

In addition, this discussion is limited to U.S. holders who are not resident in France for purposes of the Income Tax Treaty between the United States and France.

If a partnership (including for this purpose any entity treated as a partnership for U.S. federal income tax purposes) is a beneficial owner of the ADSs, the U.S. tax treatment of a partner in the partnership generally will depend on the status of the partner and the activities of the partnership. A holder of the ADSs that is a partnership and partners in such a partnership should consult their own tax advisors concerning the U.S. federal income tax consequences of owning and disposing of ADSs.

A "non-U.S. holder" is a beneficial owner of ADSs that is neither a U.S. holder nor a partnership for U.S. federal income tax purposes.

Generally, holders of ADSs should be treated for U.S. federal income tax purposes as holding the ordinary shares represented by the ADSs. Accordingly, no gain or loss will be recognized upon an exchange of ordinary shares for ADSs or an exchange of ADSs for ordinary shares. The U.S. Treasury has expressed concerns that intermediaries in the chain of ownership between the holder of an ADS and the issuer of the security underlying the ADS may be taking actions that are inconsistent with the claiming of foreign tax credits for U.S. holders of ADSs. Accordingly, the credibility of foreign taxes, if any, as described below, could be affected by actions taken by intermediaries in the chain of ownership between the holder of an ADS and the company.

PFIC Considerations

The Code provides special rules regarding certain distributions received by U.S. persons with respect to, and sales, exchanges and other dispositions, including pledges, of, shares of stock (including ordinary shares represented by ADSs) in a PFIC. A non-U.S. corporation will be treated as a PFIC for any taxable year in which either: (1) at least 75 percent of its gross income is "passive income" or (2) at least 50 percent of its gross assets during the taxable year (based on the average of the fair market values of the assets determined at the end of each quarterly period) are "passive assets," which generally means that they produce passive income or are held for the production of passive income. Passive income for this purpose generally includes, among other things, dividends, interest, rents, royalties, gains from commodities and securities transactions, and gains from assets that produce passive income. In determining whether a foreign corporation is a PFIC, a pro rata portion of the income and assets of each corporation in which it owns, directly or indirectly, at least a 25% interest (by value) is taken into account.

Although not free from doubt, we believe that we were a PFIC for U.S. federal income tax purposes for the 2016 taxable year and expect to continue to be a PFIC for the current and potentially future taxable years, but our PFIC status must be determined annually and therefore may be subject to change. Because this determination is made annually at the end of each taxable year and is dependent upon a number of factors, some of which are beyond our control, including the amount and nature of

our income, as well as on the market valuation of our assets and our spending schedule for our cash balances, and because certain aspects of the PFIC rules are not entirely certain, there can be no assurance that we are or are not a PFIC or that the IRS will agree with our conclusion regarding our PFIC status. If we are not a PFIC during any taxable year in which you hold ADSs, then the remainder of the discussion under "Taxation—Material U.S. Federal Income Tax Considerations," outside of this "PFIC Considerations" portion may be relevant to you.

A U.S. holder that holds ADSs during any taxable year in which we qualify as a PFIC is subject to special tax rules with respect to (a) any gain realized on the sale, exchange or other disposition of the ADSs and (b) any "excess distribution" by the corporation to the holder, unless the holder elects to treat the PFIC as a "qualified electing fund," or QEF, or makes a "mark-to-market" election, each as discussed below. An "excess distribution" is that portion of a distribution with respect to ADSs that exceeds 125% of the annual average of such distributions over the preceding three-year period or, if shorter, the U.S. holder's holding period for its ADSs. Excess distributions and gains on the sale, exchange or other disposition of ADSs of a corporation which was a PFIC at any time during the U.S. holder's holding period are allocated ratably to each day of the U.S. holder's holding period. Amounts allocated to the taxable year in which the disposition occurs and amounts allocated to any period in the shareholder's holding period before the first day of the first taxable year that the corporation was a PFIC will be taxed as ordinary income (rather than capital gain) earned in the taxable year of the disposition. Amounts allocated to each of the other taxable years in the U.S. holder's holding period are not included in gross income for the year of the disposition, but are subject to the highest ordinary income tax rates in effect for individuals or corporations, as applicable, for each such year and the interest charge generally applicable to income tax deficiencies will be imposed on the resulting tax attributable to each year. The tax liability for amounts allocated to years before the year of disposition or "excess distribution" cannot be offset by any net operating losses for such years, and gains (but not losses) realized on the sale of the ADSs cannot be treated as capital, even if a U.S. holder held such ADSs as capital assets.

If we are a PFIC for any taxable year during which a U.S. holder holds ADSs, then we generally will continue to be treated as a PFIC with respect to the holder for all succeeding years during which such holder holds ADSs, even if we no longer satisfy either the passive income or passive asset tests described above, unless the U.S. holder terminates this deemed PFIC status by making a "deemed sale" election. If such election is made, a U.S. holder will be deemed to have sold the ADSs at their fair market value on the last day of the last taxable year for which we were a PFIC, and any gain from such deemed sale would be subject to the excess distribution rules as described above. After the deemed sale election, the ADSs with respect to which the deemed sale election was made will not be treated as shares in a PFIC unless we subsequently become a PFIC.

The excess distribution rules may be avoided if a U.S. holder makes a QEF election effective beginning with the first taxable year in the holder's holding period in which we are treated as a PFIC with respect to such holder. A U.S. holder that makes a QEF election with respect to a PFIC is required to include in income its pro rata share of the PFIC's ordinary earnings and net capital gain as ordinary income and capital gain, respectively, subject to a separate election to defer payment of taxes, which deferral is subject to an interest charge.

In general, a U.S. holder makes a QEF election by attaching a completed IRS Form 8621 to a timely filed (taking into account any extensions) U.S. federal income tax return for the year beginning with which the QEF election is to be effective. In certain circumstances, a U.S. holder may be able to make a retroactive QEF election. A QEF election can be revoked only with the consent of the IRS. In order for a U.S. holder to make a valid QEF election, the corporation must annually provide or make available to the holder certain information. We have prepared the PFIC statement and we will provide upon request from the U.S. holders who wish to make a QEF election.

As an alternative to making a QEF election, a U.S. holder may make a "mark-to-market" election with respect to its ADSs if the ADSs meet certain minimum trading requirements, as described below. If a U.S. holder makes a valid mark-to-market election for the first taxable year in which such holder holds (or is deemed to hold) ADSs in a corporation and for which such corporation is determined to be a PFIC, such holder generally will not be subject to the PFIC rules described above in respect of its ADSs. Instead, a U.S. holder that makes a mark-to-market election will be required to include in income each year an amount equal to the excess, if any, of the fair market value of the ADSs that the holder owns as of the close of the taxable year over the holder's adjusted tax basis in the ADSs. The U.S. holder will be entitled to a deduction for the excess, if any, of the holder's adjusted tax basis in the ADSs over the fair market value of the ADSs as of the close of the taxable year; provided, however, that the deduction will be limited to the extent of any net mark-to-market gains with respect to the ADSs included by the U.S. holder under the election for prior taxable years. The U.S. holder's basis in the ADSs will be adjusted to reflect the amounts included or deducted pursuant to the election. Amounts included in income pursuant to a mark-to-market election, as well as gain on the sale, exchange or other disposition of the ADSs, will be treated as ordinary income. The deductible portion of any mark-to-market loss, as well as loss on a sale, exchange or other disposition of ADSs to the extent that the amount of such loss does not exceed net mark-to-market gains previously included in income, will be treated as ordinary loss. If a U.S. holder makes a valid mark-to-market election, any distributions made by us would generally be subject to the rules discussed below under "—Taxation of Dividends," except the lower rate applicable to qualified dividend income would not apply. If we cease to be a PFIC when a U.S. holder has a mark-to-market election in effect, gain or loss realized by a U.S. holder on the sale of our ADSs will be a capital gain or loss and taxed in the manner described below under "—Taxation of Sale, Exchange or other Disposition of ADSs."

The mark-to-market election applies to the taxable year for which the election is made and all subsequent taxable years, unless the ADSs cease to meet applicable trading requirements (described below) or the IRS consents to its revocation. The excess distribution rules generally do not apply to a U.S. holder for taxable years for which a mark-to-market election is in effect. If we are a PFIC for any year in which the U.S. holder owns ADSs but before a mark-to-market election is made, the interest charge rules described above will apply to any mark-to-market gain recognized in the year the election is made.

A mark-to-mark election is available only if the ADSs are considered "marketable" for these purposes. ADSs will be marketable if they are regularly traded on a national securities exchange that is registered with the SEC (such as the Nasdaq Global Market) or on a non-U.S. exchange or market that the IRS determines has rules sufficient to ensure that the market price represents a legitimate and sound fair market value. For these purposes, ADSs will be considered regularly traded during any calendar year during which more than a de minimis quantity of the ADSs is traded on at least 15 days during each calendar quarter. Any trades that have as their principal purpose meeting this requirement will be disregarded. Each U.S. holder should ask its own tax advisor whether a mark-to-market election is available or desirable.

If we are a PFIC for any year in which a U.S. holder holds ADSs, such U.S. holder must generally file an IRS Form 8621 annually. A U.S. holder must also provide such other information as may be required by the U.S. Treasury Department if the U.S. holder (1) receives certain direct or indirect distributions from a PFIC, (2) recognizes gain on a direct or indirect disposition of ADSs, or (3) makes certain elections (including a QEF election or a mark-to-market election) reportable on IRS Form 8621.

Under attribution rules, if we are a PFIC, U.S. holders of our ADSs will be deemed to own their proportionate shares of any of our subsidiaries that are PFICs. It is possible that one or more of our subsidiaries is or will become a PFIC. Such determination is made annually at the end of each taxable year and is dependent upon a number of factors, some of which are beyond our control, including the amount and nature of a subsidiary's income, as well as the market valuation and nature of a subsidiary's assets. In such case, assuming a U.S. holder does not receive from such subsidiary the information that the U.S. holder needs to make a QEF election with respect to such a subsidiary, a U.S. holder generally will be deemed to own a portion of the shares of such lower-tier PFIC and may incur liability for a deferred tax and interest charge if we receive a distribution from, or dispose of all or part of our interest in, or the U.S. holder otherwise is deemed to have disposed of an interest in, the lower-tier PFIC, even though the U.S. holder has not received the proceeds of those distributions or dispositions directly. There is no assurance that we will have timely knowledge of the status of any such lower-tier PFIC, or that we will cause the lower-tier PFIC to provide the required information for a U.S. holder to make or maintain a QEF election with respect to the lower-tier PFIC. In addition, a mark-to-market election generally would not be available with respect to such a lower-tier PFIC and, consequently, if you make a mark-to-market election with respect to our ADSs, you could be subject to the PFIC rules with respect to income of lower-tier PFICs the value of which already had been taken into account indirectly via mark-to-market adjustments. U.S. holders are advised to consult with their tax advisors regarding the tax issues raised by lower-tier PFICs.

U.S. holders are urged to consult their tax advisors as to our status as a PFIC, and, if we are treated as a PFIC, as to the effect on them of, and the reporting requirements with respect to, the PFIC rules and the desirability of making, and the availability of, either a QEF election or a mark-to-market election with respect to our ADSs.

Taxation of Dividends

U.S. Holders. Subject to the PFIC rules described above under "—PFIC Considerations," if you are a U.S. holder, you must include in your gross income the gross amount of any distributions of cash or property (other than certain *pro rata* distributions of ADSs) with respect to ADSs, to the extent the distribution is paid out of our current or accumulated earnings and profits, as determined for U.S. federal income tax purposes. A U.S. holder must include the dividend as ordinary income at the time of actual or constructive receipt. Distributions in excess of current and accumulated earnings and profits, as determined for U.S. federal income tax purposes, will be treated as a non-taxable return of capital to the extent of your basis in the ADSs and thereafter as capital gain from the sale or exchange of such ADSs. Notwithstanding the foregoing, we do not intend to maintain calculations of our earnings and profits as determined for U.S. federal income tax purposes. Consequently, distributions generally will be reported as dividend income for U.S. information reporting purposes. The dividend will not be eligible for the dividends-received deduction generally allowed to U.S. corporations in respect of dividends received from other U.S. corporations.

Subject to the PFIC rules described above under "—PFIC Considerations," dividends paid by a non-U.S. corporation generally will be taxed at the preferential tax rates applicable to long-term capital gain of non-corporate taxpayers if (a) such non-U.S. corporation is eligible for the benefits of certain U.S. treaties or the dividend is paid by such non-U.S. corporation with respect to stock that is readily tradable on an established securities market in the United States, (b) the U.S. holder receiving such dividend is an individual, estate, or trust, (c) such dividend is paid on shares that have been held by such U.S. holder for at least 61 days during the 121-day period beginning 60 days before the "ex-dividend date," and (d) we are not a PFIC in the year of the

dividend or the immediately preceding year. If the requirements of the immediately preceding paragraph are not satisfied, a dividend paid by a non-U.S. corporation to a U.S. holder, including a U.S. holder that is an individual, estate, or trust, generally will be taxed at ordinary income tax rates (and not at the preferential tax rates applicable to long-term capital gains). As discussed above "PFIC Considerations," although not free from doubt, we believe that we were a PFIC for U.S. federal income tax purposes for the 2016 taxable year and we expect to continue to be a PFIC for the current and potentially future taxable years. The dividend rules are complex, and each U.S. holder should consult its own tax advisor regarding the dividend rules.

Dividends received generally will be income from non-U.S. sources, which may be relevant in calculating your U.S. foreign tax credit limitation. Such non-U.S. source income generally will be "passive category income," or in certain cases "general category income", which is treated separately from other types of income for purposes of computing the foreign tax credit allowable to you. The rules with respect to the foreign tax credit are complex and involve the application of rules that depend upon a U.S. holder's particular circumstances. You should consult your own tax advisor to determine the foreign tax credit implications of owning the ADSs.

Non-U.S. Holders. Dividends paid to non-U.S. holders generally will not be subject to U.S. income tax unless the dividends are "effectively connected" with your conduct of a trade or business within the United States, and the dividends are attributable to a permanent establishment (or in the case of an individual, a fixed place of business) that you maintain in the United States if that is required by an applicable income tax treaty as a condition for subjecting you to U.S. taxation on a net income basis. In such cases you generally will be taxed in the same manner as a U.S. holder (other than with respect to the Medicare Tax described below). If you are a corporate non-U.S. holder, "effectively connected" dividends may, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or a lower rate if you are eligible for the benefits of an income tax treaty that provides for a lower rate.

Taxation of Sale, Exchange or other Disposition of ADSs

U.S. Holders. Subject to the PFIC rules described above under "—PFIC Considerations," if you are a U.S. holder and you sell, exchange or otherwise dispose of your ADSs, you generally will recognize capital gain or loss for U.S. federal income tax purposes equal to the difference between the value of the amount realized and your tax basis in your ADSs. Gain or loss recognized on such a sale, exchange or other disposition of ADSs generally will be long-term capital gain if the U.S. holder has held the ADSs for more than one year. Long-term capital gains of U.S. holders who are individuals (as well as certain trusts and estates) are generally taxed at preferential rates. The gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes, unless it is attributable to an office or other fixed place of business outside the United States and certain other conditions are met. Your ability to deduct capital losses is subject to limitations. As discussed above under "—PFIC Considerations," although not free from doubt, we believe that we were a PFIC for U.S. federal income tax purposes for the 2016 taxable year and we expect to continue to be a PFIC for the current and potentially future taxable years.

Non-U.S. Holders. If you are a non-U.S. holder, you will not be subject to U.S. federal income tax on gain recognized on the sale, exchange or other disposition of your ADSs unless:

- the gain is "effectively connected" with your conduct of a trade or business in the United States, and the gain is attributable to a permanent establishment (or in the case of an individual, a fixed place of business) that you maintain in the United States if that is required by an applicable income tax treaty as a condition for subjecting you to U.S. taxation on a net income basis; or
- you are an individual, you are present in the United States for 183 or more days in the taxable year of such sale, exchange or other disposition and certain other conditions are met.

In the first case, the non-U.S. holder will be taxed in the same manner as a U.S. holder (other than with respect to the Medicare Tax described below). In the second case, the non-U.S. holder will be subject to U.S. federal income tax at a rate of 30% on the amount by which such non-U.S. holder's U.S.—source capital gains exceed such non-U.S.—source capital losses.

If you are a corporate non-U.S. holder, "effectively connected" gains that you recognize may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or at a lower rate if you are eligible for the benefits of an income tax treaty that provides for a lower rate.

Medicare Tax

Certain U.S. holders who are individuals, estates or trusts are required to pay a 3.8% Medicare surtax on all or part of that holder's "net investment income", which includes, among other items, dividends on, and capital gains from the sale or other taxable disposition of, the ADSs, subject to certain limitations and exceptions. U.S. holders should consult their own tax advisors regarding the effect, if any, of this surtax on their ownership and disposition of the ADSs.

Information with Respect to Foreign Financial Assets

U.S. holders that are individuals (and, to the extent provided in regulations, certain entities) that own "specified foreign financial assets," including possibly the ADSs, with an aggregate value in excess of $50,000 are generally required to file IRS Form 8938 with information regarding such assets. Depending on the circumstances, higher threshold amounts may apply. Specified foreign financial assets include any financial accounts maintained by foreign financial institutions, as well as any of the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties and (iii) interests in non-U.S. entities. If a U.S. holder is subject to this information reporting regime, the failure to timely file IRS Form 8938 may subject the U.S. holder to penalties. In addition to these requirements, U.S. holders may be required to annually file FinCEN Report 114, Report of Foreign Bank and Financial Accounts with the U.S. Department of Treasury. U.S. holders are thus encouraged to consult their U.S. tax advisors with respect to these and other reporting requirements that may apply to their acquisition of the ADSs.

Backup Withholding and Information Reporting

In general, information reporting requirements will apply to distributions made on our ADSs within the United States to a non-corporate U.S. holder and to the proceeds from the sale, exchange, redemption or other disposition of ADSs by a non-corporate U.S. holder to or through a U.S. office of a broker. Payments made (and sales or other dispositions effected at an office) outside the U.S. will be subject to information reporting in limited circumstances.

In addition, backup withholding of U.S. federal income tax may apply to such amounts if the U.S. holder fails to provide an accurate taxpayer identification number (or otherwise establishes, in the manner provided by law, an exemption from backup withholding) or to report dividends required to be shown on the U.S. holder's U.S. federal income tax returns.

Backup withholding is not an additional income tax, and the amount of any backup withholding from a payment to a U.S. holder will be allowed as credit against the U.S. holder's U.S. federal income tax liability provided that the appropriate returns are filed.

A non-U.S. holder generally may eliminate the requirement for information reporting and backup withholding by providing certification of its foreign status to the payor, under penalties of perjury, on IRS Form W-8BEN or W-8BEN-E, as applicable. You should consult your own tax advisor as to the qualifications for exemption from backup withholding and the procedures for obtaining the exemption.

The foregoing does not purport to be a complete analysis of the potential tax considerations relating to the ownership and disposition of the ADSs. Prospective investors should consult their own tax advisors as to the particular tax considerations applicable to them relating to the ownership and disposition of the ADSs, including the applicability of the U.S. federal, state and local tax laws or non-tax laws, foreign tax laws, and any changes in applicable tax laws and any pending or proposed legislation or regulations.

Material French Income Tax Considerations

The following describes the material French income tax consequences to U.S. Holders (as defined below) of purchasing, owning and disposing of the ADSs and, unless otherwise noted, this discussion is the opinion of Jones Day, our French tax counsel, insofar as it relates to matters of French tax law and legal conclusions with respect to those matters.

This discussion does not purport to be a complete analysis or listing of all potential tax effects of the acquisition, ownership or disposition of our securities to any particular investor, and does not discuss tax considerations that arise from rules of general application or that are generally assumed to be known by investors. All of the following is subject to change. Such changes could apply retroactively and could affect the consequences described below.

In 2011, France introduced a comprehensive set of new tax rules applicable to French assets that are held by or in foreign trusts. These rules, among other things, provide for the inclusion of trust assets in the settlor's net assets for purpose of applying the French wealth tax, for the application of French gift and death duties to French assets held in trust, for a specific tax on capital on the French assets of foreign trusts not already subject to the French wealth tax and for a number of French tax reporting and disclosure obligations. The following discussion does not address the French tax consequences applicable to securities (including ADSs) held in trusts. If securities are held in trust, the grantor, trustee and beneficiary are urged to consult their own tax adviser regarding the specific tax consequences of acquiring, owning and disposing of securities.

The description of the French income tax and wealth tax consequences set forth below is based on the Convention Between the Government of the United States of America and the Government of the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Income and Capital of August 31, 1994 which came into force on December 30, 1995 (as amended by any subsequent protocols, including the protocol of January 13, 2009), and the tax guidelines issued by the French tax authorities in force as of the date of this Annual Report, or the Treaty.

For the purposes of this discussion, the term "U.S. Holder" means a beneficial owner of securities that is (1) an individual who is a U.S. citizen or resident for U.S. federal income tax purposes, (2) a U.S. domestic corporation or certain other entities created or organized in or under the laws of the United States or any state thereof, including the District of Colombia, or (3) otherwise subject to U.S. federal income taxation on a net income basis in respect of securities.

If a partnership holds securities, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. If a U.S. Holder is a partner in a partnership that holds securities, such holder is urged to consult its own tax adviser regarding the specific tax consequences of acquiring, owning and disposing of securities.

This discussion applies only to investors that hold our securities as capital assets that have the U.S. dollar as their functional currency, that are entitled to Treaty benefits under the "Limitation on Benefits" provision contained in the Treaty, and whose ownership of the securities is not effectively connected to a permanent establishment or a fixed base in France. Certain U.S. Holders (including, but not limited to, U.S. expatriates, partnerships or other entities classified as partnerships for U.S. federal income tax purposes, banks, insurance companies, regulated investment companies, tax-exempt organizations, financial institutions, persons subject to the alternative minimum tax, persons who acquired the securities pursuant to the exercise of employee share options or otherwise as compensation, persons that own (directly, indirectly or by attribution) 5% or more of our voting stock or 5% or more of our outstanding share capital, dealers in securities or currencies, persons that elect to mark their securities to market for U.S. federal income tax purposes and persons holding securities as a position in a synthetic security, straddle or conversion transaction) may be subject to special rules not discussed below.

U.S. Holders are urged to consult their own tax advisers regarding the tax consequences of the purchase, ownership and disposition of securities in light of their particular circumstances, especially with regard to the "Limitations on Benefits" provision.

Estate and Gift Taxes and Transfer Taxes

In general, a transfer of securities by gift or by reason of death of a U.S. Holder that would otherwise be subject to French gift or inheritance tax, respectively, will not be subject to such French tax by reason of the Convention between the Government of the United States of America and the Government of the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Estates, Inheritances and Gifts, dated November 24, 1978, unless the donor or the transferor is domiciled in France at the time of making the gift or at the time of his or her death, or the securities were used in, or held for use in, the conduct of a business through a permanent establishment or a fixed base in France.

Financial Transactions Tax

Pursuant to Article 235 ter ZD of the French Tax Code (*Code général des impôts*), or the FTC, purchases of certain securities issued by a French company, including ordinary shares and ADSs, which are listed on a regulated market of the EU or an exchange market formally acknowledged by the AMF (in each case within the meaning of the French Monetary and Financial Code, or the FMFC) are subject in France to a 0.3% tax on financial transactions, or the TFT, provided inter alia that the issuer's market capitalization exceeds 1 billion euros as of December 1 of the year preceding the taxation year.

A list of relevant French companies whose market capitalization exceeds €1.0 billion as of December 1 of the year preceding the taxation year used to be published annually by the French State. It is now published by the French tax authorities, and could be amended at any time. Pursuant to Regulations BOI-ANNX-000467-20161220 issued on December 20, 2016, Cellectis is currently not included in such list. Please note that such list may be updated from time to time, or may not be published anymore in the future.

As a result, neither the ADSs nor the ordinary shares are currently within the scope of the TFT.

Purchases of Cellectis's securities may however become subject to the TFT if Cellectis's market capitalization exceeds €1.0 billion.

Registration Duties

In the case where the TFT is not applicable, (1) transfers of shares issued by a French company which are listed on a regulated or organized market within the meaning of the FMFC are subject to uncapped registration duties at the rate of 0.1% if the transfer is evidenced by a written statement (*acte*) executed either in France or outside France, whereas (2) transfers of shares issued by a French company which are not listed on a regulated or organized market within the meaning of the FMFC are subject to uncapped registration duties at the rate of 0.1% notwithstanding the existence of a written statement (*acte*).

As ordinary shares of Cellectis are listed on Alternext, which is an organized market within the meaning of the FMFC, their transfer should be subject to uncapped registration duties at the rate of 0.1% subject to the existence of a written agreement (*acte*).

Although the official guidelines published by the French tax authorities are silent on this point, ADSs should remain outside of the scope of the aforementioned 0.1% registration duties.

Wealth Tax

The French wealth tax (*impôt de solidarité sur la fortune*) applies only to individuals and does not generally apply to securities held by a U.S. resident, as defined pursuant to the provisions of the Treaty, provided that such U.S. Holder does not own directly or indirectly more than 25% of the issuer's financial rights.

Taxation of Dividends

Dividends paid by a French corporation to non-residents of France are generally subject to French withholding tax at a rate of 30%. Dividends paid by a French corporation in a non-cooperative State or territory, as defined in Article 238-0 A of the FTC, will generally be subject to French withholding tax at a rate of 75%. However, eligible U.S. Holders entitled to Treaty benefits under the "Limitation on Benefits" provision contained in the Treaty who are U.S. residents, as defined pursuant to the provisions of the Treaty, will not be subject to this 30% or 75% withholding tax rate, but may be subject to the withholding tax at a reduced rate (as described below).

Under the Treaty, the rate of French withholding tax on dividends paid to an eligible U.S. Holder who is a U.S. resident as defined pursuant to the provisions of the Treaty and whose ownership of the ADSs is not effectively connected with a permanent establishment or fixed base that such U.S. Holder has in France, is generally reduced to 15%, or to 5% if such U.S. Holder is a corporation and owns directly or indirectly at least 10% of the share capital of the issuer; such U.S. Holder may claim a refund from the French tax authorities of the amount withheld in excess of the Treaty rates of 15% or 5%, if any.

For U.S. Holders that are not individuals but are U.S. residents, as defined pursuant to the provisions of the Treaty, the requirements for eligibility for Treaty benefits, including the reduced 5% or 15% withholding tax rates contained in the "Limitation on Benefits" provision of the Treaty, are complicated, and certain technical changes were made to these requirements by the protocol of January 13, 2009. U.S. Holders are advised to consult their own tax advisers regarding their eligibility for Treaty benefits in light of their own particular circumstances.

Dividends paid to an eligible U.S. Holder may immediately be subject to the reduced rates of 5% or 15% provided that such holder establishes before the date of payment that it is a U.S. resident under the Treaty by completing and providing the depositary with a treaty form (Form 5000). Dividends paid to a U.S. Holder that has not filed the Form 5000 before the dividend payment date will be subject to French withholding tax at the rate of 30%, or 75% if paid in a non-cooperative State or territory (as defined in Article 238-0 A of the FTC), and then reduced at a later date to 5% or 15%, provided that such holder duly completes and provides the French tax authorities with the treaty forms Form 5000 and Form 5001 before December 31 of the second calendar year following the year during which the dividend is paid.

Certain qualifying pension funds and certain other tax-exempt entities are subject to the same general filing requirements as other U.S. Holders except that they may have to supply additional documentation evidencing their entitlement to these benefits.

Form 5000 and Form 5001, together with appropriate instructions, will be provided by the depositary to all U.S. Holders registered with the depositary. The depositary will arrange for the filing with the French tax authorities of all such forms properly completed and executed by U.S. Holders of ADSs and returned to the depositary in sufficient time so that they may be filed with the French tax authorities before the distribution in order to obtain immediately a reduced withholding tax rate.

Tax on Sale or Other Disposition

In general, under the Treaty, a U.S. Holder who is a U.S. resident for purposes of the Treaty will not be subject to French tax on any capital gain from the redemption (other than redemption proceeds characterized as dividends under French domestic tax law or administrative guidelines), sale or exchange of ADSs unless the ADSs form part of the business property of a permanent establishment or fixed base that the U.S. Holder has in France.

Special rules apply to U.S. Holders who are residents of more than one country.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

We are subject to the information reporting requirements of the Exchange Act applicable to foreign private issuers and under those requirements file reports with the SEC. Those reports may be inspected without charge at the locations described below. As a foreign private issuer, we are exempt from the rules under the Exchange Act related to the furnishing and content of proxy statements, and our officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act. In addition, we are not required under the Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as United States companies whose securities are registered under the Exchange Act. Nevertheless, we file with the U.S. Securities and Exchange Commission an Annual Report containing financial statements that have been examined and reported on, with and opinion expressed by an independent registered public accounting firm, and we submit quarterly interim consolidated financial data to the SEC under cover of the SEC's Form 6-K.

We maintain a corporate website at www.cellectis.com. We intend to post our Annual Report on our website promptly following it being filed with the SEC. Information contained on, or that can be accessed through, our website does not constitute a part of this Annual Report. We have included our website address in this Annual Report solely as an inactive textual reference.

You may also review a copy of this Annual Report, including exhibits and any schedule filed herewith, and obtain copies of such materials at prescribed rates, at the Securities and Exchange Commission's Public Reference Room in Room 1580, 100 F Street, NE, Washington, D.C. 20549-0102. You may obtain information on the operation of the Public Reference Room by calling the Securities and Exchange Commission at 1-800-SEC-0330. The Securities and Exchange Commission maintains a website (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding registrants, such as Cellectis, that file electronically with the Securities and Exchange Commission.

With respect to references made in this Annual Report to any contract or other document of Cellectis, such references are not necessarily complete and you should refer to the exhibits attached or incorporated by reference to this Annual Report for copies of the actual contract or document.

I. Subsidiary Information

Not applicable

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Risk

We derive a significant portion of our revenues, including payments under our collaboration agreement with Pfizer, in U.S. dollars. Since the beginning of fiscal year 2015, we have been significantly expanding our activities in the United States, but there continues to be a currency mismatch in our cash flows since most of our expenses remain denominated primarily in Euros. If the average value of the U.S. Dollar had been 10% higher relative to the euro during 2016, our collaboration revenues would have increased by €0.9 million. Our exposure to currencies other than the U.S. dollar is negligible.

Our financial condition and results of operations are measured and recorded in the relevant local base currency and then translated into Euros for inclusion in our Consolidated Financial Statements. We translate balance sheet amounts at the exchange rates in effect on the date of the balance sheet, while income and cash flow items are translated at the average rate of exchange in effect for the relevant period. Our exposure to currencies other than the U.S. dollar is negligible.

For the year ended December 31, 2016, our revenues denominated in U.S. dollars related to the Pfizer collaboration agreement and revenues from our Plants segment. Our cash and cash equivalents and marketable securities denominated in U.S dollars amounted to $158.8 million as of December 31, 2016. Current financial assets denominated in U.S. dollars amounted to $36.6 million as of December 31, 2016.

During the year ended December 31, 2016, we subscribed to zero premium collars ($17.9 million nominal value) and accumulators ($21.3 million nominal value). The net foreign exchange result for the fiscal year 2016 is a gain of €0.6 million. We cannot rule out the possibility that a significant increase in our business, particularly in the United States, may result in greater exposure to exchange rate risk. We would then consider adopting an appropriate policy for hedging against these risks.

Interest Rate Risk

We seek to engage in prudent management of our cash and cash equivalents, mainly cash on hand and common financial instruments (typically short- and mid-term deposits). Furthermore, the interest rate risk related to cash, cash equivalents and common financial instruments is not significant based on the quality of the financial institutions with which we work.

Inflation Risk

We do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. Debt Securities

Not applicable.

B. Warrants and Rights

Not applicable.

C. Other Securities

Not applicable.

D. American Depositary Shares

Citibank, N.A., as depositary for our ADSs, registers and delivers ADSs. Each ADS represents one ordinary share (or a right to receive one-half of one ordinary share) deposited with Citibank International Limited, located at EGSP 186, 1 North Wall Quay, Dublin 1 Ireland or any successor, as custodian for the depositary. Each ADS will also represent any other securities, cash or other property which may be held by the depositary in respect of the depositary facility. The depositary's corporate trust office at which the ADSs will be administered is located at 388 Greenwich Street, New York, New York 10013.

A deposit agreement among us, the depositary and the ADS holders sets out the ADS holder rights as well as the rights and obligations of the depositary. New York law governs the deposit agreement and the ADSs. A copy of the Agreement is incorporated by reference as an exhibit to this Annual Report.

Fees and Charges

As an ADS holder, you will be required to pay the following fees under the terms of the depositary agreement:

Service	*Fees*
• Issuance of ADSs upon deposit of shares (excluding issuance as a result of distributions of shares)	Up to U.S. 5¢ per ADS issued
• Cancellation of ADSs	Up to U.S. 5¢ per ADS canceled
• Distribution of cash dividends or other cash distributions (i.e., sale of rights and other entitlements)	Up to U.S. 5¢ per ADS held

Service	*Fees*
• Distribution of ADSs pursuant to (1) stock dividends or other free stock distributions, or (2) exercise of rights to purchase additional ADSs	Up to U.S. 5¢ per ADS held
• Distribution of securities other than ADSs or rights to purchase additional ADSs (i.e., spin-off shares)	Up to U.S. 5¢ per ADS held
• ADS Services	Up to U.S. 5¢ per ADS held on the applicable record date(s) established by the depositary

As an ADS holder you will also be responsible to pay certain fees and expenses incurred by the depositary and certain taxes and governmental charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;
- the registration fees as may from time to time be in effect for the registration of ordinary shares on the share register and applicable to transfers of ordinary shares to or from the name of the custodian, the depositary or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the depositary in the conversion of foreign currency;
- the fees and expenses incurred by the depositary in connection with the compliance with exchange control regulations and other regulatory requirements applicable to ordinary shares, ADSs and ADRs; and
- the fees and expenses incurred by the depositary, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

ADS fees and charges payable upon (1) deposit of ordinary shares against issuance of ADSs and (2) surrender of ADSs for cancellation and withdrawal of ordinary shares are charged to the person to whom the ADSs are delivered (in the case of ADS issuances) and to the person who delivers the ADS, for cancellation (in the case of ADS cancellations). In the case of ADSs issued by the depositary into DTC or presented to the depositary via DTC, the ADS issuance and cancellation fees and charges may be deducted from distributions made through DTC, and may be charged to the DTC participant(s) receiving the ADSs or the DTC participant(s) surrendering the ADSs for cancellation, as the case may be, on behalf of the beneficial owner(s) and will be charged by the DTC participant(s) to the account(s) of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participant(s) as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are charged to the holders as of the applicable ADS record date. In the case of distributions of cash, the amount of the applicable ADS fees and charges is deducted from the funds being distributed. In the case of (1) distributions other than cash and (2) the ADS service fee, holders as of the ADS record date will be invoiced for the amount of the ADS fees and charges and such ADS fees and charges may be deducted from distributions made to holders of ADSs. For ADSs held through DTC, the ADS fees and charges for distributions other than cash and the ADS service fee may be deducted from distributions made through DTC, and may be charged to the DTC participants in accordance with the procedures and practices prescribed by DTC and the DTC participants in turn charge the amount of such ADS fees and charges to the beneficial owners for whom they hold ADSs.

In the event of refusal to pay the depositary fees, the depositary may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder. Certain ADS fees and charges (such as the ADS service fee) may become payable shortly after the closing of the ADS offering.

Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the depositary. You will receive prior notice of such changes. The depositary may reimburse us for certain expenses incurred by us in respect of the ADR program, by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the depositary agree from time to time.

Depositary Payments for 2016

From time to time, the Depositary may make payments to us to reimburse and/or share revenue from the fees collected from ADS holders, or waive fees and expenses for services provided, generally relating to costs and expenses arising out of establishment and maintenance of the ADS program. In performing its duties under the deposit agreement, the Depositary may use brokers, dealers or other service providers that are affiliates of the Depositary and that may earn or share fees or commissions.

For the year ended December 31, 2016, Citibank, N.A., as Depositary, had made reimbursements to the Company of €0.1 million.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES.

Not applicable.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS.

Initial Public Offering

In March 2015, we sold 5,500,000 ADSs, each representing one ordinary share, nominal value €0.05, in our initial public offering at a price of $41.50 per ADS, for aggregate gross proceeds of approximately $228.3 million. We incurred aggregate underwriting discounts of approximately $16.0 million and expenses of approximately $2.7 million, resulting in net proceeds to us of approximately $209.6 million. No payments were made directly or indirectly to any director, officer, general partner of ours or to their associates, persons owning ten percent or more of any class of our equity securities, or to any of our affiliates. The offering commenced on March 24, 2015 and did not terminate before all of the securities registered in the registration statement were sold. The effective date of the registration statement, File No. 333-202205, for our initial public offering was March 24, 2015. Merrill Lynch, Pierce, Fenner & Smith Incorporated, Jefferies LLC, Piper Jaffray & Co., Oppenheimer & Co. Inc. and Trout Capital LLC acted as underwriters of the initial public offering.

A portion of the net proceeds from our initial public offering was used for general corporate purposes in connection with the development of our current proprietary immuno-oncology product candidates, for further research and development regarding cell attributes and to develop our manufacturing processes and cell engineering technologies, to pursue new human therapeutics outside of oncology and to advance our agricultural biotechnology business. The balance is held in cash and cash equivalents and current financial assets and is intended to also be used for general corporate purposes. None of the net proceeds of our initial public offering were paid directly or indirectly to any director, officer, general partner of ours or to their associates, persons owning ten percent or more of any class of our equity securities, or to any of our affiliates.

ITEM 15. CONTROLS AND PROCEDURES.

(a) Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)) as of the end of the period covered by this Form 20-F, have concluded that our disclosure controls and procedures were effective as of December 31, 2016.

(b) Report of Management on Internal Control Over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Management, with the participation of the Chief Executive Officer and the Chief Financial Officer, has assessed the effectiveness of internal control over financial reporting as of December 31, 2016. Management's assessment was based on the framework in "Internal Control – Integrated Framework" (2013 framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on that assessment, management concluded that, as of December 31, 2016, the Company's internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of its financial reporting and the preparation of its financial statements for external purposes, in accordance with generally accepted accounting principles.

Due to its inherent limitations, internal control over financial reporting may not prevent or detect misstatements, and can only provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The effectiveness of the Company's internal control over financial reporting has been audited by Ernst & Young et Autres, independent registered public accounting firm, as stated in their report on the Company's internal control over financial reporting as of December 31, 2016, which is included herein. See paragraph (c) of the present Item 15, below.

(c) See report of Ernst & Young et Autres, independent registered public accounting firm, included under "Item 18. Financial Statements" on page F-3.

(d) We have made certain changes in internal controls over financial reporting in preparation for the inclusion of our first Section 404 report in this Annual Report.

ITEM 15T. CONTROLS AND PROCEDURES.

Not applicable.

ITEM 16. RESERVED

Not applicable.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Mr. Pierre Bastid, Mr. Laurent Arthaud, and Mr. Jean-Marie Messier are audit and finance committee financial experts as defined by the Securities and Exchange Commission rules and have the requisite financial sophistication under the applicable rules and regulations of the Nasdaq Stock Market. Mr. Pierre Bastid, , Mr. Laurent Arthaud, and Mr. Jean-Marie Messier are independent as such term is defined in Rule 10A-3 under the Exchange Act and under the listing standards of the Nasdaq Stock Market.

ITEM 16B. CODE OF ETHICS

We have adopted a Code of Business Conduct and Ethics, or the Code of Conduct, that is applicable to all of our employees, executive officers and directors. Following the completion of our initial public offering, the Code of Conduct became available on our website at *www.cellectis.com*. Our board of directors is responsible for overseeing the Code of Conduct and is required to approve any waivers of the Code of Conduct for employees, executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements, will be disclosed on our website.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Ernst & Young et Autres, or Ernst & Young, has served as our independent registered public accounting firm for 2015 and 2016. Our accountants billed the following fees to us for professional services in each of those fiscal years:

	Year Ended December 31,	
	2016	2015
	(€, in thousands)	
Audit Fees	704	563
Audit-Related Fees	38	—
Tax Fees	—	—
Other Fees	—	375
Total	742	938

"Audit Fees" are the aggregate fees billed for the audit of our annual financial statements. This category also includes services that generally the independent accountant provides, such as consents and assistance with and review of documents filed with the SEC. In 2015, "Audit Fees" also include fees billed for assurance and related services regarding our initial public offering.

"Audit-Related Fees" are the aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit and are not reported under Audit Fees.

"Tax Fees" are the aggregate fees billed for professional services rendered by the principal accountant for tax compliance, tax advice and tax planning related services.

"Other Fees" relate to services provided with respect to our registration statement for our initial public offering.

There were no "Audit Related Fees," "Tax Fees" either billed or paid during 2015 or 2016.

Audit and Non-Audit Services Pre-Approval Policy

The audit and finance committee has responsibility for appointing, setting compensation of and overseeing the work of the independent registered public accounting firm. In recognition of this responsibility, the audit and finance committee has adopted a policy governing the pre-approval of all audit and permitted non-audit services performed by our independent registered public accounting firm to ensure that the provision of such services does not impair the independent registered public accounting firm's independence from us and our management. Unless a type of service to be provided by our independent registered public accounting firm has received general pre-approval from the audit and finance committee, it requires specific pre-approval by the audit and finance committee. The payment for any proposed services in excess of pre-approved cost levels requires specific pre-approval by the audit and finance committee. All audit and non-audit services rendered by our independent registered public accounting firm in 2016 were pre-approved by the audit and finance committee.

Pursuant to its pre-approval policy, the audit and finance committee may delegate its authority to pre-approve services to the chairperson of the audit and finance committee. The decisions of the chairperson to grant pre-approvals must be presented to the full audit and finance committee at its next scheduled meeting. The audit and finance committee may not delegate its responsibilities to pre-approve services to the management.

The audit and finance committee has considered the non-audit services provided by Ernst & Young as described above and believes that they are compatible with maintaining Ernst & Young's independence as our independent registered public accounting firm.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

Not applicable.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

As a French *société anonyme*, we are subject to various corporate governance requirements under French law. In addition, as a foreign private issuer listed on the Nasdaq Global Market, we will be subject to the Nasdaq corporate governance listing standards. However, the Nasdaq Global Market's listing standards provide that foreign private issuers are permitted to follow home country corporate governance practices in lieu of the Nasdaq rules, with certain exceptions. Certain corporate governance practices in France may differ significantly from corporate governance listing standards. For example, neither the corporate laws of France nor our By-laws require that (i) a majority of our directors be independent, (ii) our compensation committee include only independent directors, or (iii) our independent directors hold regularly scheduled meetings at which only independent directors are present. Other than as set forth below, we currently intend to comply with the corporate governance listing standards of Nasdaq to the extent possible under French law. However, we may choose to change such practices to follow home country practice in the future.

Although we are a foreign private issuer, we are required to comply with Rule 10A-3 of the Exchange Act, relating to audit committee composition and responsibilities. Rule 10A-3 provides that the audit committee must have direct responsibility for the nomination, compensation and choice of our auditors, as well as control over the performance of their duties, management of complaints made, and selection of consultants. Under Rule 10A-3, if the laws of a foreign private issuer's home country require that any such matter be approved by the board of directors or the shareholders of the Company, the audit committee's responsibilities or powers with respect to such matter may instead be advisory. Under French law, the audit committee may only have an advisory role and appointment of our statutory auditors, in particular, must be decided by our shareholders at our annual meeting.

In addition, Nasdaq rules require that a listed company specify that the quorum for any meeting of the holders of share capital be at least 33 1/3% of the outstanding shares of the company's common voting stock. We intend to follow our French home country practice, rather than complying with this Nasdaq rule. Consistent with French Law, our By-laws provide that when first convened, general meetings of shareholders may validly convene only if the shareholders present or represented hold at least (1) 20% of the voting shares in the case of an ordinary general meeting or of an extraordinary general meeting where shareholders

are voting on a capital increase by capitalization of reserves, profits or share premium, or (2) 25% of the voting shares in the case of any other extraordinary general meeting. If such quorum required by French law is not met, the meeting is adjourned. There is no quorum requirement under French law when an ordinary general meeting or an extraordinary general meeting where shareholders are voting on a capital increase by capitalization of reserves, profits or share premium is reconvened, but the reconvened meeting may consider only questions that were on the agenda of the adjourned meeting. When any other extraordinary general meeting is reconvened, the required quorum under French law is 20% of the shares entitled to vote. If a quorum is not met at a reconvened meeting requiring a quorum, then the meeting may be adjourned for a maximum of two months. See the section of the prospectus filed with the Commission on March 26, 2015 titled "Description of Share Capital—Key Provisions of Our By-laws and French Law Affecting Our Ordinary Shares."

Further, Nasdaq rules require that listed companies have a nominations committee comprised solely of independent directors. We intend to follow our French home country practice, as described under "—Board Composition," rather than complying with this Nasdaq rule.

Board Committees

The board of directors has established an audit and finance committee and a compensation committee, each of which operates pursuant to a separate charter adopted by our board of directors. The board of directors has also established a scientific committee. The composition and functioning of all of our committees will comply with all applicable requirements of the French Commercial Code, the Exchange Act, the Nasdaq Global Market, and the rules and regulations of the SEC.

In accordance with French law, committees of our board of directors will only have an advisory role and can only make recommendations to our board of directors. As a result, decisions will be made by our board of directors taking into account non-binding recommendations of the relevant board committee.

Audit and Finance Committee. Our audit and finance committee reviews our internal accounting procedures, consults with and reviews the services provided by our independent registered public accountants and assists our board of directors in its oversight of our corporate accounting and financial reporting. Currently, our audit and finance committee is comprised of three members of the board of directors: Messrs. Bastid, Arthaud and Messier.

The duties specifically assigned to the audit and finance committee by our board of directors include, but are not limited to:

- with regard to our financial statements:
    - review on a preliminary basis and express its opinion on the draft annual and quarterly financial statements prior to the board of directors officially receiving the financial statements;
    - examine the critical accounting policies and practices of the Company, including their relevance and consistency used for the preparation of the Company's consolidated financial statements and rectify any failure to comply with these policies and practices;
    - monitor the scope of consolidation and review, where necessary, any explanations in connection thereto;
    - interview, when necessary, the statutory auditors, the chairman of the board of directors, the chief executive officer, the chief financial officer, the employees in charge of our internal controls or any other management personnel; these discussions may take place, where required, without the presence of the chairman of our board of directors and the chief executive officer; and
    - examine—prior to their publication—the draft annual and interim financial statements, the draft annual report and any other draft financial statements (including projected financial statements) prepared for the needs of upcoming material transactions together with the related press releases;
- with regard to internal controls:
    - assess the efficiency and quality of internal control systems and procedures within the consolidated Company;
    - examine, with the persons in charge of the internal audit, and, if necessary, outside of the presence of the chairman of the board of directors and the chief executive officer, the contingency and action plans with respect to internal audit, the findings following the implementation of these actions and the recommendations and follow-up actions in connection therewith; and
    - entrust the internal audit department with any mission which the committee deems necessary;

- with regard to external controls:
  - examine any question relating to the appointment, renewal or dismissal of our statutory auditors and their fees regarding the performance of their control review functions;
  - oversee the rules relating to the use of the statutory auditors for assignments other than the audit of the financial statements and, more generally, ensure that we comply with the principles guaranteeing the statutory auditors' independence;
  - at least annually, review and discuss the information provided by management and the auditors relating to the independence of the audit firm;
  - pre-approve any services entrusted to the statutory auditors which is outside of the scope of the annual audit;
  - review every year with the statutory auditors all fees paid to by the Company and its subsidiaries to any networks to which the auditors belong, their work plan, their findings and recommendations, as well as actions taken by us following such recommendations;
  - review and discuss with the statutory auditors their comments on internal controls over financial reporting and any matters that have come to the attention of the statutory auditors that lead them to believe that modification to our disclosures about changes in internal control over financial reporting is necessary for management's certifications pursuant to Section 302 of the Sarbanes-Oxley Act;
  - discuss if necessary any points of disagreement between the statutory auditors and the officers of the Company that may arise within the scope of these operations; and
  - review and discuss with the statutory auditors the plans for, and the scope of, the annual audit and other examinations; and
- with regard to risks:
  - review on a regular basis the financial situation, the cash position and the material risks and undertakings of the Company and its subsidiaries; and
  - review the risk management policy and the process implemented to evaluate and manage these risks.

Compensation Committee. Our compensation committee assists our board of directors in reviewing the compensation of our executive officers and directors and makes recommendations in respect thereof. Currently, our compensation committee is comprised of two members of the board of directors: Mr. Godard and Dr. Schwebig. The principal duties and responsibilities of our compensation committee include, but are not limited to:

- review the compensation of our employees and managers of the Company and its subsidiaries (fixed and variable compensations, bonus, etc.) and make any recommendation to our board of directors in connection therewith;
- review equity incentive plans (non-employee warrants, stock options, restricted (free) shares, etc.) and make recommendations to our board of directors in connection therewith;
- make recommendations to our board of directors regarding the compensation, pension and insurance plans, benefits in kind and other various pecuniary rights, of officers, as well as the allocation of equity incentive instruments granted to executive officers and directors of the Company;
- evaluate and make recommendations on the compensation policies and programs of executive officers and on the compensation of directors;
- recommend the approval, adoption and amendment of all cash- and equity-based incentive compensation plans in which any of our executive officers or directors participate and all other equity-based plans;
- review any proposed employment agreement with, and any proposed severance or retention plans or agreements applicable to, any of our executive officers;
- review, at least annually, corporate goals and objectives relevant to the compensation of our executive officers; and
- evaluate the performance of the executive officers in light of corporate goals and objectives and recommend compensation levels for these executive officers based on those evaluations and any other factors the compensation committee deems appropriate.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

See pages F-1 through F-51 of this Annual Report.

ITEM 18. FINANCIAL STATEMENTS

Not applicable.

ITEM 19. EXHIBITS

The following exhibits are filed as part of this Annual Report:

Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
1.1#	By-laws (*status*) of the registrant (English translation)	F-1	333-202205	3.1	March 10, 2015
2.1#	Form of Deposit Agreement	F-1	333-202205	4.1	March 10, 2015
2.2#	Form of American Depositary Receipt (included in Exhibit 2.1)	F-1	333-202205	Included in 4.1	March 10, 2015
4.1#*	Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated June 19, 2000 (English translation)	F-1	333-202205	10.1	March 12, 2015
4.1.1#	Amendment No. 1 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated December 20, 2002 (English translation)	F-1	333-202205	10.1.1	March 12, 2015
4.1.2#*	Amendment No. 2 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.1.2	March 12, 2015
4.1.3#	Amendment No. 3 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated February 26, 2008	F-1	333-202205	10.1.3	March 12, 2015
4.1.4#	Amendment No. 4 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated April 11, 2013 (English translation)	F-1	333-202205	10.1.4	March 12, 2015
4.2#*	Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated October 19, 2000 (English translation)	F-1	333-202205	10.2	March 12, 2015
4.2.1#*	Amendment No. 1 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.2.1	March 12, 2015
4.2.2#*	Amendment No. 2 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated June 24, 2004 (English translation)	F-1	333-202205	10.2.2	March 12, 2015
4.2.3#*	Amendment No. 3 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated August 24, 2005 (English translation)	F-1	333-202205	10.2.3	March 12, 2015
4.2.4#*	Amendment No. 4 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated December 27, 2007 (English translation)	F-1	333-202205	10.2.4	March 12, 2015
4.3#*	Patent License Agreement #C-00061905 between L'Institut Pasteur and Cellectis S.A., dated June 19, 2000 (English translation)	F-1	333-202205	10.3	March 12, 2015

Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
4.3.1#*	Amendment No. 1 to Patent License Agreement #C-00061905 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.3.1	March 12, 2015
4.4#*	Research and Collaboration Agreement between Pfizer Inc. and Cellectis S.A., dated June 17, 2014	F-1	333-202205	10.4	March 12, 2015
4.5#*	Research, Product Development, Option, License and Commercialization Agreement, among Les Laboratoires Servier SAS, Institut de Recherches Internationales Servier SAS and Cellectis S.A., dated February 17, 2014	F-1	333-202205	10.5	March 12, 2015
4.5.1#*	Amendment to the Product Development, Option, License and Commercialization Agreement, among Les Laboratoires Servier SAS, Institut de Recherches Internationales Servier SAS and Cellectis S.A., dated November 18, 2015	20-F	001-36891	4.5.1	March 21, 2015
4.6#*	Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated January 10, 2011	F-1	333-202205	10.6	March 12, 2015
4.6.1#*	First Amendment to the Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated May 24, 2012	F-1	333-202205	10.6.1	March 12, 2015
4.6.2#*	Second Amendment to the Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated April 1, 2014	F-1	333-202205	10.6.2	March 12, 2015
4.7#*	Patent & Technology License Agreement between Ohio State Innovation Foundation and Cellectis S.A., dated October 23, 2014	F-1	333-202205	10.7	March 12, 2015
4.8#	Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated December 20, 2012 (English translation)	F-1	333-202205	10.8	March 10, 2015
4.8.1#	First Amendment to Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated June 6, 2013 (English translation)	F-1	333-202205	10.8.1	March 10, 2015
4.8.2#	Second Amendment to Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated October 7, 2013 (English translation)	F-1	333-202205	10.8.2	March 10, 2015
4.9#	Warrant Agreement between Cellectis S.A. and Trout Capital LLC, dated March 24, 2014	F-1	333-202205	10.9	March 10, 2015
4.10†#	Change of Control Plan, effective as of September 4, 2014 (English translation)	F-1	333-202205	10.10	March 10, 2015
4.11†#	Summary of BSA Plan	F-1	333-202205	10.11	March 10, 2015
4.12†#	Summary of BSPCE Plan	F-1	333-202205	10.12	March 10, 2015
4.13†#	2012 Free Share Plan	F-1	333-202205	10.13	March 10, 2015
4.14†#	2013 Free Share Plan	F-1	333-202205	10.14	March 10, 2015
4.15†#	2014 Free Share Plan	F-1	333-202205	10.15	March 10, 2015
4.16†#	2015 Free Share Plan	20-F	001-36891	4.16	March 10, 2015
4.17†#	2016 Free Share Plan	20-F	001-36891	4.17	March 10, 2015
4.18†#	2016 Stock Option Plan	S-8	333-214884	99.1	December 2, 2016

Table of Contents

Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
8.1	List of subsidiaries of the registrant				Filed Herewith
12.1	Certificate of Principal Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed Herewith
12.2	Certification by the Principal Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed Herewith
13.1	Certification by the Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Filed Herewith
13.2	Certification by the Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Filed Herewith
15.1	Consent of Ernst & Young et Autres				Filed Herewith

† Indicates a management contract or any compensatory plan, contract or arrangement.
# Indicates a document previously filed with the Commission.
* Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Financial Statements for the Years Ended December 31, 2014, 2015 and 2016:

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Cellectis S.A.

We have audited the accompanying statements of consolidated financial position of Cellectis S.A. as of December 31, 2016 and 2015, and the related statements of consolidated operations, consolidated comprehensive loss, consolidated cash flows and changes in consolidated shareholders' equity for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Cellectis S.A. as of December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Cellectis S.A.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated March 22, 2017 expressed an unqualified opinion thereon.

Paris-La Défense, March 22, 2017

/s/ ERNST & YOUNG et Autres

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Cellectis S.A.

We have audited Cellectis S.A.'s internal control over financial reporting as at December 31, 2016, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). Cellectis S.A.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Report of Management on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Cellectis S.A. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the statements of consolidated financial position of Cellectis S.A.as of December 31, 2016 and 2015, and the related statements of consolidated operations, consolidated comprehensive loss, consolidated cash flows and changes in consolidated shareholders' equity for each of the three years in the period ended December 31, 2016 and our report dated March 22, 2017 expressed an unqualified opinion thereon.

Paris-La Défense, March 22, 2017

/s/ ERNST & YOUNG et Autres

Cellectis S.A.
STATEMENTS OF CONSOLIDATED FINANCIAL POSITION
€ in thousands

	Notes	As of December 31, 2015	As of December 31, 2016
ASSETS			
Non-current assets			
Intangible assets	**5**	956	1,274
Property, plant, and equipment	**6**	5,043	16,033
Other non-current financial assets		845	656
Total non-current assets		**6,844**	**17,963**
Current assets			
Inventories and accumulated costs on orders in process	**8**	158	112
Trade receivables	**9.1**	6,035	3,441
Subsidies receivables	**9.2**	9,102	8,276
Other current assets	**9.3**	4,685	8,414
Current financial assets	**10.1**	—	34,714
Cash and cash equivalents	**10.2**	314,238	241,502
Total current assets		**334,218**	**296,459**
TOTAL ASSETS		**341,062**	**314,422**
LIABILITIES			
Shareholders' equity			
Share capital	**14.1**	1,759	1,767
Premiums related to the share capital	**14.1**	420,682	473,306
Treasury share reserve	**14.4**	(184)	(307)
Currency translation adjustment		(1,631)	2,501
Retained earnings		(137,188)	(157,695)
Net income (loss)		(20,544)	(60,776)
Total shareholders' equity—Group Share		**262,894**	**258,795**
Non-controlling interests	**14.3**	725	1,779
Total shareholders' equity		**263,619**	**260,574**
Non-current liabilities			
Non-current financial liabilities	**11**	66	28
Non-current provisions	**17**	437	532
Total non-current liabilities		**503**	**560**
Current liabilities			
Current financial liabilities	**11**	1,921	1,641
Trade payables		6,611	9,223
Deferred revenues and deferred income	**12**	54,758	36,931
Current provisions	**17**	953	563
Other current liabilities	**13**	12,697	4,930
Total current liabilities		**76,940**	**53,288**
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY		**341,062**	**314,422**

The accompanying notes form an integral part of these Consolidated Financial Statements

Cellectis S.A.
STATEMENTS OF CONSOLIDATED OPERATIONS
For the year ended December 31
€ in thousands, except per share amounts

	Notes	For the year ended December 31, 2014	2015	2016
Revenues and other income				
Revenues	**3.1**	21,627	50,346	40,491
Other income	**3.1**	4,826	6,039	10,516
Total revenues and other income		**26,453**	**56,385**	**51,007**
Operating expenses				
Royalty expenses	**3.2**	(3,035)	(2,475)	(1,605)
Research and development expenses	**3.2**	(14,407)	(52,410)	(70,899)
Selling, general and administrative expenses	**3.2**	(13,114)	(27,238)	(39,230)
Other operating income		—	1,060	345
Other operating expenses		(1,142)	(3,246)	(434)
Total operating expenses		**(31,698)**	**(84,309)**	**(111,824)**
Operating income (loss)		**(5,245)**	**(27,924)**	**(60,818)**
Financial revenues	**3.4**	7,622	9,240	6,459
Financial expenses	**3.4**	(527)	(1,690)	(6,417)
Financial gain (loss)		**7,095**	**7,550**	**42**
Income tax	**3.5**	—	—	—
Income (loss) from continuing operations		1,850	(20,373)	(60,776)
Income (loss) from discontinued operations	**3.3**	(2,822)	—	—
Net income (loss)		**(972)**	**(20,373)**	**(60,776)**
Attributable to shareholders of Cellectis		20	(20,544)	(60,776)
Attributable to non-controlling interests		(992)	171	—
Basic / Diluted earnings per share attributable to shareholders of Cellectis	**16**			
Basic earnings from continuing operations per share (€ /share)		0.11	(0.60)	(1.72)
Basic earnings from discontinued operations per share (€ /share)		(0.11)	—	—
Diluted earnings from continuing operations per share (€ /share)		0.11	(0.60)	(1.72)
Diluted earnings from discontinued operations per share (€ /share)		(0.11)	—	—

The accompanying notes form an integral part of these Consolidated Financial Statements

STATEMENTS OF CONSOLIDATED COMPREHENSIVE INCOME
For the year ended December 31
€ in thousands

	For the year ended December 31,		
	2014	2015	2016
Net income (loss)	**(972)**	**(20,373)**	**(60,776)**
Actuarial gains and losses	121	(14)	(27)
Other comprehensive income (loss) that will not be reclassified subsequently to income or loss	121	(14)	(27)
Currency translation adjustment	(1,653)	(921)	4,194
Other comprehensive income (loss) that will be reclassified subsequently to income or loss	(1,653)	(921)	4,194
Total Comprehensive income (loss)	**(2,504)**	**(21,308)**	**(56,609)**
Attributable to shareholders of Cellectis	(1,468)	(21,427)	(56,672)
Attributable to non-controlling interests	(1,036)	119	62

The accompanying notes form an integral part of these Consolidated Financial Statements

Cellectis S.A.
STATEMENTS OF CONSOLIDATED CASH FLOWS
For the year ended December 31
€ in thousands

	Notes	For the year ended December 31, 2014	2015	2016
Cash flows from operating activities				
Net loss for the period		(972)	(20,373)	(60,776)
Net loss for the period of discontinued operations		(2,822)	—	—
Net (loss) income for the period of continuing operations		1,850	(20,373)	(60,776)
Reconciliation of net loss and of the cash used for operating activities				
Adjustments for				
Amortization and depreciation		1,372	1,745	1,998
Net loss on disposals		(24)	(10)	58
Net finance expenses (revenue)		(7,095)	(7,550)	(42)
Expenses related to share-based payments		548	30,103	52,974
Provisions		(959)	(251)	(330)
Other non cash items		(303)	—	(1,294)
Interest (paid) / received		305	964	1,531
Operating cash flows before change in working capital		**(4,306)**	**4,628**	**(5,880)**
Decrease (increase) in inventories		97	(23)	45
Decrease (increase) in trade receivables and other current assets		(6,971)	1,143	(901)
Decrease (increase) in subsidies receivables		(2,317)	(612)	(1,014)
(Decrease) increase in trade payables and other current liabilities		1,643	2,669	(3,962)
(Decrease) increase in deferred income		54,326	(4,569)	(17,847)
Change in working capital		**46,779**	**(1,392)**	**(23,679)**
Net cash flows provided by (used in) operating activities of continuing operations		42,473	3,236	(29,559)
Net cash flows provided by (used in) operating activities of discontinued operations		(748)	—	—
Net cash flows provided by (used in) operating activities		**41,725**	**3,236**	**(29,559)**
Cash flows from investment activities				
Proceeds from disposal of property, plant and equipment		38	100	21
Sale (Acquisition) of subsidiaries net of cash disposed of		505	(2,850)	—
Acquisition of intangible assets		(7)	(87)	(305)
Acquisition of property, plant and equipment		(347)	(3,890)	(12,377)
Net change in non-current financial assets		(1,542)	—	158
Sale (Acquisition) of current financial assets		—	(238)	(35,516)
Net cash flows provided by (used in) investing activities of continuing operations		(1,353)	(6,965)	(48,018)
Net cash flows provided by (used in) investing activities		**(1,353)**	**(6,965)**	**(48,018)**
Cash flows from financing activities				
Increase in share capital net of transaction costs		58,775	199,299	645
Decrease in borrowings		(1,032)	(564)	(82)
Treasury shares		161	67	(124)
Net cash flows provided by financing activities of continuing operations		57,904	198,802	438
Net cash flows provided by (used in) financing activities		**57,904**	**198,802**	**438**
(Decrease) increase in cash		**98,276**	**195,073**	**(77,139)**
Cash and cash equivalents at the beginning of the year		**7,559**	**112,347**	**314,238**
Effect of exchange rate changes on cash		6,511	6,818	4,403
Cash from continuing operations		112,347	314,238	241,502
Cash and cash equivalents at the end of the period	**11**	**112,347**	**314,238**	**241,502**

We present our consolidated statements of cash flows using the indirect method. The statements of consolidated cash flows have been prepared using flows of continuing operations. Net operating, investing and financing cash flows from discontinued operations are related to Cellectis AB.

The accompanying notes form an integral part of these Consolidated Financial Statements

Cellectis S.A.
STATEMENTS OF CHANGES IN CONSOLIDATED SHAREHOLDERS' EQUITY
For the year ended December 31
€ in thousands, except share data

	Notes	Share Capital Ordinary Shares Number of shares	Amount	Premiums	Treasury shares	Currency translation adjustment	Retained earnings (deficit)	Income (Loss)	Equity attributable to shareholders of Cellectis	Non controlling interests	Total Shareholders' Equity
As of January 1, 2014		**21,082,320**	**1,054**	**133,908**	**(412)**	**828**	**(77,236)**	**(55,402)**	**2,740**	**(223)**	**2,517**
Net Loss		—	—	—	—	—	—	20	20	(992)	(972)
Other comprehensive income (loss)		—	—	—		(1,590)	102		(1,488)	(44)	(1,532)
Total comprehensive income (loss)		—	—	—	—	**(1,590)**	**102**	**20**	**(1,468)**	**(1,036)**	**(2,504)**
Allocation of prior period loss		—	—	—	—	—	(55,402)	55,402	—	—	—
Capital Increase	**14.1**	6,869,047	343	45,086	—	—	—	—	45,429		45,429
Treasury shares	**14.4**	—	—	—	161	—	—	—	161	—	161
Exercise of share warrants and employee warrants	**14.2**	1,495,354	75	13,301	—	—	—	—	13,376	—	13,376
Non-cash stock-based compensation expense	**15**	—	—	548	—	—	—	—	548	—	548
As of December 31, 2014		**29,446,721**	**1,472**	**192,842**	**(251)**	**(762)**	**(132,536)**	**20**	**60,786**	**(1,259)**	**59,527**
As of January 1, 2015		**29,446,721**	**1,472**	**192,842**	**(251)**	**(762)**	**(132,536)**	**20**	**60,786**	**(1,259)**	**59,527**
Net Loss		—	—	—	—	—	—	(20,544)	(20,544)	171	(20,373)
Other comprehensive income (loss)		—	—	—	—	(869)	(14)		(883)	(51)	(935)
Total comprehensive income (loss)		—	—	—	—	**(869)**	**(14)**	**(20,544)**	**(21,427)**	**119**	**(21,308)**
Allocation of prior period loss		—	—	—	—	—	20	(20)	—	—	—
Capital Increase	**14.1**	5,500,000	275	194,382	—	—	(3)	—	194,655	—	194,655
Purchase of non-controlling interests	**14.3**	—	—	—	—	—	(4,653)	—	(4,653)	1,153	(3,500)
Treasury shares	**14.4**	—	—	—	67	—	—	—	67	—	67
Exercise of share warrants and employee warrants	**14.2**	231,893	12	4,066	—	—	(3)	—	4,075	—	4,075
Non-cash stock-based compensation expense	**15**	—	—	29,392	—	—	—	—	29,392	711	30,103
As of December 31, 2015		**35,178,614**	**1,759**	**420,682**	**(184)**	**(1,632)**	**(137,188)**	**(20,544)**	**262,894**	**725**	**263,619**
As of January 1, 2016		**35,178,614**	**1,759**	**420,682**	**(184)**	**(1,632)**	**(137,188)**	**(20,544)**	**262,894**	**725**	**263,619**
Net Loss			—	—	—	—	—	(60,776)	(60,776)	—	(60,776)
Other comprehensive income (loss)			—	—	—	4,132	(27)	—	4,104	62	4,167
Total comprehensive income (loss)				—	—	**4,132**	**(27)**	**(60,776)**	**(56,672)**	**62**	**(56,609)**
Allocation of prior period loss		—	—	—	—	—	(20,544)	20,544	—	—	—
Treasury shares	**14.4**	—	—	—	(124)	—	—	—	(124)	—	(124)
Exercise of share warrants and employee warrants	**14.2**	156,446	8	642	—	—	(5)	—	645	—	645
Non-cash stock-based compensation expense	**15**	—	—	51,982	—	—	—	—	51,982	992	52,974
Other movements		—	—	—	—	—	69	—	69	—	69
As of December 31, 2016		**35,335,060**	**1,767**	**473,306**	**(307)**	**2,500**	**(157,695)**	**(60,776)**	**258,794**	**1,779**	**260,574**

The accompanying notes form an integral part of these Consolidated Financial Statements

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 2016

Note 1. The Company

Cellectis S.A. (hereinafter "Cellectis" or "we") is a limited liability company ("société anonyme") registered and domiciled in Paris, France. We are a gene-editing company, employing our core proprietary technologies to develop products in the emerging field of immuno-oncology. Our product candidates, based on gene-edited T-cells that express chimeric antigen receptors, or CARs, seek to harness the power of the immune system to target and eradicate cancers. Our gene-editing technologies allow us to create allogeneic CAR T-cells, meaning they are derived from healthy donors rather than the patients themselves. In addition to our focus on immuno-oncology, we are exploring the use of our gene-editing technologies in other therapeutic applications, as well as to develop healthier food products for a growing population.

Note 2. Accounting principles

2.1 Basis for preparation

The Consolidated Financial Statements of Cellectis as of and for the year ended December 31, 2016 were approved by our Board of Directors on March 6, 2017.

Our Consolidated Financial Statements are presented in euros, which is the functional currency of Cellectis S.A., the parent company.

All financial information (unless indicated otherwise) is presented in thousands of euros.

The Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"), whose application is mandatory for the year ended December 31, 2014, 2015 and 2016.

The consolidated financial statements have been prepared using the historical cost measurement basis except for certain assets and liabilities that are measured at fair value in accordance with IFRS.

IFRS include International Financial Reporting Standards ("IFRS"), International Accounting Standards ("the IAS"), as well as the interpretations issued by the Standards Interpretation Committee ("the SIC"), and the International Financial Reporting Interpretations Committee ("IFRIC"). The significant accounting methods used to prepare the Consolidated Financial Statements are described below.

Application of new or amended standards or new amendments

The following pronouncements and related amendments have been adopted by us from January 1, 2016 but had no significant impact on the Interim Consolidated Financial Statements:

- The Annual Improvements to IFRSs for the 2012-2014 Cycle.
- Disclosure Initiative (Amendments to IAS1)

Standards, interpretations and amendments issued but not yet effective

The following pronouncements and related amendments are applicable for first quarter accounting periods beginning after January 1, 2017. We do not anticipate that the adoption of these pronouncements and amendments will have a material impact on our results of operations, financial position or cash flows.

- IFRS 9 Financial Instruments (applicable for periods beginning after January 1, 2018)
- Amendments to IAS 7 "Statement of Cash Flows" (applicable for periods beginning after January 1, 2017)
- Amendments to IFRS 2 "Classification and Measurement of Share-based Payment Transactions" (applicable for periods beginning after January 1, 2018)
- Amendments to IFRIC 22 "Foreign Currency Transactions and Advance Consideration" (applicable for periods beginning after January 1, 2018)

IFRS 15 Revenue from Contracts with Customers establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaces existing revenue recognition guidance, including IAS 18 Revenue. IFRS 15 is effective for annual reporting periods beginning on or after January 1, 2018, with early adoption permitted.

Cellectis began its IFRS 15 implementation project with a diagnostic phase. The different categories of contracts with customers of Cellectis are currently being finalized on the following issues:

- Collaboration agreements
- Licensing agreements;

Cellectis will apply IFRS 15 with effect from January 1, 2018.

In January 2016, the IASB issued IFRS 16 (Leases), which is effective for annual periods beginning on or after January 1, 2019. This new standard aligns the accounting treatment of operating leases with that already applied to finance leases (i.e. recognition in the balance sheet of future lease payments and the associated rights of use).

The accounting policies and measurement principles adopted for the financial statements as of and for the year ended December 31, 2014, 2015 and 2016 are the same.

2.2 Basis of consolidation

Accounting policy

We control all the legal entities included in the consolidation. An investor controls an investee when the investor is exposed to variable returns from its involvement with the investee, and has the ability to affect those returns through its power over the investee. Control requires power, exposure to variability of returns and a linkage between the two.

To have power, the investor needs to have existing rights that give it the current ability to direct the relevant activities that significantly affect the investee's returns.

In order to ascertain control, potential voting rights which are substantial are taken into consideration.

Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary.

All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full consolidation.

Consolidated entities and non-controlling interests

As at December 31, 2015 and for the year ended December 31, 2016, the consolidated group of companies (sometimes referred to as the "Group") includes Cellectis S.A., Cellectis, Inc. and Calyxt, Inc.

Cellectis, Inc. and Calyxt, Inc. are fully owned by Cellectis S.A.

Our 2015 Consolidated Financial Statements include the operations of Cellectis S.A.; our two French subsidiaries, Cellectis Bioresearch S.A.S. and Ectycell S.A.S. ; our three U.S. subsidiaries, Calyxt, Inc., Cellectis, Inc. and Cellectis Bioresearch Inc. Non-controlling shareholders held a 24.5% interest in Cellectis Bioresearch S.A.S., Cellectis Bioresearch Inc. and Ectycell S.A.S. until May 18, 2015.

The following internal reorganization was completed in 2015:

- Ectycell S.A.S. was merged into, and absorbed by Cellectis Bioresearch S.A.S. in August 2015 with retroactive effect as at January 1, 2015 for French tax purposes;
- Cellectis Bioresearch S.A.S. was merged into, and absorbed by, Cellectis S.A in December 2015 with retroactive effect as at January 1, 2015 for French tax purposes;
- Cellectis Bioresearch Inc. was merged into Cellectis Inc. in September 2015.

Our 2014 annual Consolidated Financial Statements included the operations of Cellectis S.A.; our two French subsidiaries, Cellectis Bioresearch S.A.S. and Ectycell S.A.S. ; our two U.S. subsidiaries, Calyxt Inc. (previously Cellectis Plant Sciences Inc.) and Cellectis Bioresearch Inc.; and our former Swedish subsidiary, Cellectis AB.

Non-controlling shareholders hold a 24.5% interest in Cellectis Bioresearch S.A.S. , Cellectis Bioresearch Inc. and Ectycell S.A.S. as of December 31, 2014 (see Note 14.3). From May 18, 2015, Cellectis S.A. hold 100% interest in Cellectis Bioresearch S.A.S.

2.3 Foreign currency

Foreign currency transactions and balances

Significant transactions in foreign currencies are translated into the respective functional currencies at the exchange rates effective at the transaction dates, otherwise the average rate of the previous month is used for non-significant transactions. Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency using the exchange rate effective at the closing date.

The resulting exchange gains or losses are recorded in the statements of consolidated operations in financial gain (loss).

Foreign currency translation

The assets and liabilities of foreign operations having a functional currency different from the euro are translated into euros at the closing exchange rate. The income and expenses of foreign operations are translated into euros using the average exchange rate for the reporting period.

Gains and losses arising from currency translation are recognized in other comprehensive loss. When a foreign operation is partly or fully divested, the associated share of gains and losses recognized in the currency translation reserve is transferred to the statement of consolidated operations.

For the year ended December 31, 2016, effect of exchange rate translation in the consolidated comprehensive income is mainly related to the translation of foreign subsidiaries cash denominated in US dollars into Euros at the closing rate of the period and amounts €4.2 million. It is mostly explained by the transfer of $69.9 million from Cellectis S.A. to Cellectis Inc. during the first quarter of 2016.

2.4 Use of estimates and assumptions

The preparation of these consolidated financial statements requires entity's management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Actual amounts may differ from those estimates.

The Group's exposure to risks and uncertainties is disclosed in a specific note: Financial instruments risk management and policies Note 7.3.

Estimates and assumptions

The key assumptions concerning the future and other key sources of estimation uncertainty at the closing date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below. The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

- Revenue recognition – Note 3.1
- Share-based payments – Note 15
- Provisions for risks and charges – Note 17

Note 3. Information concerning the Group's Consolidated Operations

3.1 Revenues and other income

Accounting policies

Collaboration agreements and licenses

We enter into research and development collaboration agreements that may consist of non-refundable upfront payments, payments for the sale of rights to technology, milestone payments, royalties and research and development cost reimbursements. In addition, we license our technology to third parties, which may be part of the research and development collaboration agreements.

Non-refundable upfront payments are deferred and recognized as revenue over the period of the collaboration agreement. Sales of technology pursuant to non-cancelable, non-refundable fixed-fee arrangements are recognized when such technology is delivered to the co-contracting party and our exclusive rights to access the technology have stopped.

Milestone payments represent amounts received from our collaborators, the receipt of which is dependent upon the achievement of certain scientific, regulatory, or commercial milestones. We recognize milestone payments when the triggering event has occurred, there are no further contingencies or services to be provided with respect to that event, and the co-contracting party has no right to require refund of payment. The triggering event may be scientific results achieved by us or another party to the arrangement, regulatory approvals, or the marketing of products developed under the arrangement.

Royalty revenues arise from our contractual entitlement to receive a percentage of product sales achieved by co-contracting parties. As we have no products approved for sale, we have not received any royalty revenue to date. Royalty revenues, if earned, will be recognized on an accrual basis in accordance with the terms of the collaboration agreement when sales can be determined reliably and there is reasonable assurance that the receivables from outstanding royalties will be collected.

Research and development costs reimbursements are recognized with respect to the policy described in section "Sales of products and services" below.

Revenues from technology licenses are recognized ratably over the period of the license agreements.

Sales of products and services

Revenues on sales of products and services are recognized when significant risks and rewards of ownership have been transferred to the customer. We also offer research services, which are recognized as revenues when the services are rendered, either on a time and materials basis, or ratably over the contract period for fixed payment arrangements.

Research Tax Credit

The main Research Tax Credit that we benefit is the *Crédit d'Impôt Recherche,* or "CIR", which is granted to entities by the French tax authorities in order to encourage them to conduct technical and scientific research. Entities that demonstrate that their research expenditures meet the required CIR criteria receive a tax credit that may be used for the payment of their income tax due for the fiscal year in which the expenditures were incurred, as well as in the next three years. If taxes due are not sufficient to cover the full amount of tax credit at the end of the three-year period, the difference is repaid in cash to the entity by the authorities. If a company meets certain criteria in terms of sales, headcount or assets to be considered a small/middle size company, immediate payment of the Research Tax Credit can be requested. Cellectis S.A. and its French subsidiaries, when they existed, meet such criteria.

We apply for CIR for research expenditures incurred in each fiscal year and recognize the amount claimed in the line item "Other income" in the same fiscal year. Research tax credit is subject to audit of tax authorities. When tax authorities payment related to CIR is late, default interests are applied and are recognized in "other income".

Details of revenues and other income

Revenues by country of origin and other income

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
From France	20,146	50,303	40,130
From USA	1,481	44	361
Revenues	**21,627**	**50,346**	**40,491**
Research tax credit	3,330	5,039	9,071
Subsidies and other	1,496	1,000	1,445
Other income	**4,826**	**6,039**	**10,516**
Total revenues and other income	**26,453**	**56,385**	**51,007**

For the year ended December 31, 2016 and 2015, the revenue from France was generated by Cellectis S.A.. For the year ended December 31, 2014, the revenue from France was generated by Cellectis S.A., Cellectis BioResearch S.A.S. and Ectycell S.A.S.

For the year ended December 31, 2016 and 2015, the revenue from USA was generated by Calyxt Inc.. For the year ended December 31, 2014, the revenue from USA was generated by both Calyxt Inc. and Cellectis BioResearch Inc.

Revenues by nature

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Upfronts	4,787	21,507	18,847
Other revenues	7,092	26,781	19,009
Collaboration agreements	**11,879**	**48,288**	**37,856**
Licenses	8,587	2,015	2,504
Products & services	1,161	43	131
Total revenues	**21,627**	**50,346**	**40,491**

Revenues are primarily generated by therapeutics activities, which is mainly attributable to our entering into two major collaboration agreements signed with Pfizer Inc. and Les Laboratoires Servier during 2014. The revenue of plants activities are generated by technology licenses and amounted to €1.1 million, €44 thousand and €0.5 million for years ended December 31, 2014, 2015 and 2016, respectively.

3.2 Operating expenses

Accounting policies

Royalty expenses corresponds to costs from license agreements that we entered to obtain access to technology that we use in our product development efforts. Depending on the contractual provisions, expenses are based either on a percentage of revenue generated by using the patents or on fixed annual royalties.

Research and development expenses include employee-related costs, laboratory consumables, materials supplies and facility costs, as well as fees paid to non-employees and entities to conduct research and development activities on our behalf. They also include expenses associated with obtaining patents. The manufacturing of product candidates is recorded depending on the use of the material. If products are not intended to be used in clinical studies, we recognize the expense when the product is delivered. If they are intended to be used for clinical studies, the expense is recognized when the certificate of compliance is obtained.

Selling, general and administrative expenses consist primarily of employee-related expenses for executive, business development, intellectual property, finance, legal and human resource functions. Administrative expenses also include facility-related costs and service fees, other professional services, recruiting fees and expenses associated with maintaining patents.

Since 2015, we classify a portion of personnel and other costs related to information technology, human resources, business development, legal, intellectual property and general management in R&D expenses based on the time that each employee or personnspent contributing to R&D activities versus sales, general and administrative activities.

Details of operating expenses by nature

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Royalty expenses	(3,035)	(2,475)	(1,605)

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Research and development expenses			
Wages	(6,289)	(9,148)	(10,775)
Social charges on stock option and free shares grants	(26)	(7,774)	(3,480)
Non-cash stock-based compensation expense	(77)	(18,532)	(30,008)
Personnel expenses	**(6,392)**	**(35,455)**	**(44,263)**
Purchases and external expenses	(6,834)	(15,249)	(25,050)
Other	(1,181)	(1,706)	(1,587)
Total research and development expenses	**(14,407)**	**(52,410)**	**(70,899)**

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Selling, general and administrative expenses			
Wages	(4,853)	(3,568)	(4,498)
Social charges on stock option and free shares grants	(159)	(4,450)	(2,828)
Non-cash stock-based compensation expense	(471)	(11,570)	(22,967)
Personnel expenses	**(5,483)**	**(19,588)**	**(30,293)**
Purchases and external expenses	(5,401)	(6,097)	(8,001)
Other	(2,230)	(1,553)	(936)
Total selling, general and administrative expenses	**(13,114)**	**(27,238)**	**(39,230)**

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Personnel expenses			
Wages and salaries	(11,142)	(12,716)	(15,273)
Social charges on stock option and free shares grants	(185)	(12,224)	(6,309)
Non-cash stock-based compensation expense	(548)	(30,103)	(52,974)
Total personnel expenses	**(11,875)**	**(55,043)**	**(74,556)**

3.3 Discontinued operations

Accounting policies

In accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations, the assets and liabilities of entities held for sale are presented separately. From the date of classification as "assets held for sale", depreciation on the relevant assets ceases. Net profit or loss from discontinued activities is presented as a separate line item in the statement of operations. Consequently, the notes to the Consolidated Financial Statements relating to the statement of operations refer solely to continuing operations. A discontinued operation is a component of a company with independent cash flows. It is a separate major line of business or geographical area of operations that has been disposed of or is held for sale.

Detail of discontinued operations

Cellectis AB was sold in August 2014. The following data shows the revenues, the losses and the impairment of related to this discontinued operations.

	Year Ended December 31, 2014
Total revenues and other income from discontinued operations	**2,057**
Loss from the activities of discontinued operations	(727)
Impairment of goodwill	—
Loss on the disposal of Cellectis AB	(2,095)
Loss from discontinued operations	**(2,822)**

Included in loss on disposal of Cellectis AB is €(1,096) thousand related to impairment of goodwill and €608 thousand relating to the recycling of the currency translation adjustment from the comprehensive income.

As of December 31, 2014, the statement of financial position of discontinued operation was null.

3.4 Financial revenues and expenses

Accounting principles

Financial income and financial expense include, in particular, the following:

- Interest income from savings account and fixed term bank deposits;
- Interest expense from financial leases;
- Foreign exchange gain (loss) from transaction in foreign currencies;
- Other financial income and expenses, mainly derived from fair value adjustment related to our financial assets and derivative instruments.

Details of financial income and expenses

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Interest income	316	986	1,471
Foreign exchange gain	7,143	8,196	4,366
Other financial revenues	163	59	622
Total financial revenues	**7,622**	**9,240**	**6,459**
Interest expenses	(113)	(1)	—
Interest expenses for finance lease	(48)	(20)	(6)
Foreign exchange loss	(113)	(1,664)	(3,796)
Other financial expenses	(253)	(6)	(2,616)
Total financial expenses	**(527)**	**(1,690)**	**(6,417)**
Total	**7,095**	**7,550**	**42**

The decrease in financial income and expenses between 2016 and 2015 of €7.5 million was mainly attributable to the decrease in net foreign exchange gain (€5.9 million), the increase in other financial expenses driven by €1.6 million foreign exchange derivatives fair value expense, and €0.9 million current financial assets fair value adjustments, partly offset by an increase in interest income (€0.5 million).

3.5 Income tax

Accounting policies

Income tax (expense or income) comprises current tax expense (income) and deferred tax expense (income).

Deferred taxes are recognized for all the temporary differences arising from the difference between the tax basis and the accounting basis of assets and liabilities. Tax losses that can be carried forward or backward may also be recognized as deferred tax assets. Tax rates that have been enacted as of the closing date are utilized to determine deferred tax. Deferred tax assets are recognized only to the extent that it is likely that future profits will be sufficient to recover them. We have not recorded deferred tax assets or liabilities in the statements of financial position.

Tax proof

	For the year ended December 31,		
	2014	2015	2016
	€ in thousands		
Income (loss) before taxes from continuing operations	1,850	(20,373)	(60,776)
Theoretical group tax rate	34.43%	34.43%	34.43%
Theoretical tax benefit (expense)	(637)	7,014	20,925
Increase/decrease in tax benefit arising from:			
Permanent differences	2,433	5,792	112
Research tax credit	1,146	1,736	2,785
Non-cash stock-based compensation expense	(189)	(10,364)	(18,239)
Non recognition of deferred tax assets related to tax losses and temporary differences	(2,755)	(4,170)	(5,565)
Impairment of assets	(9)	—	—
Other differences	11	(8)	(18)
Effective tax expense	—	—	—
Effective tax rate	0.00%	0.00%	0.00%

Deferred tax assets and liabilities

	As of December 31,		
	2014	2015	2016
	€ in thousands		
Credits and net operating loss carryforwards	21,158	34,646	39,830
Pension commitments	56	150	183
Leases	(77)	(116)	(51)
Conditional advances	(27)	—	—
Impairment of assets	71	15	13
Other	119	260	848
Valuation allowance on deferred tax assets	(21,300)	(34,956)	(40,823)
Total	—	—	—

As of December 31, 2016, we have tax loss carryforwards for our French entity of the Group totaling €28.5 million versus €27.3 million as of December 31, 2015 and €19.9 million as of December 31, 2014. Such carryforwards can be offset against future taxable profit within a limit of €1.0 million per year, plus 50% of the profit exceeding this limit. Remaining unused losses will continue to be carried forward indefinitely.

The tax loss carry forwards for our U.S. entities of the Group totaled €10.7 million as of December 31, 2016 versus €6.8 million as of December 31, 2015 and €1.3 million as of December 31, 2014.

3.6 Reportable segments

Accounting policies

Reportable segments are identified as components of the Group that have discrete financial information available for evaluation by the Chief Operating Decision Maker ("CODM"), for purposes of performance assessment and resource allocation.

Cellectis' CODM is composed of:

- The Chairman and Chief Executive Officer;
- The Executive Vice President and Chief Operating Officer;
- The Executive Vice President Corporate Development;
- The Chief Scientific Officer;
- The Chief Financial Officer;
- The Vice President Business Development;
- The General Counsel; and
- The Chief Executive Officer of Calyxt, Inc.

Since January 1st, 2017, the Chief Medical Officer and the Chief Regulatory & Compliance Officer have joined the CODM.

We view our operations and manage our business in two operating and reportable segments that are engaged in the following activities:

- *Therapeutics:* This segment is focused on the development of products in the field of immuno-oncology and of novel therapies outside immuno-oncology to treat other human diseases. This approach is based on our gene editing and Chimeric Antigen Receptors ("CARs") technologies. All these activities are supported by Cellectis S.A. and Cellectis, Inc. The operations of Cellectis S.A., the parent company, are presented entirely in the Therapeutics segment which also comprises research and development, management and support functions.
- *Plants:* This segment is focused on applying our gene-editing technologies to develop new-generation plant products in the field of agricultural biotechnology through our own efforts or through alliances with other companies in the agricultural market. It corresponds to the activity of our U.S.-based subsidiary, Calyxt, Inc., which is based in New Brighton, Minnesota.

Following the sale of the entity Cellectis AB in August 2014, the Tools and Services segment is managed as a discontinued activity, and the segment information has been retrospectively restated to present two operating and reporting segments: Therapeutics (which includes "Tools and Services" activities through the date of disposal of Cellectis AB) and Plants.

There are inter-segment transactions between the two reportable segments, including allocation of corporate general and administrative expenses by Cellectis S.A. to its subsidiaries and allocation of research and development expenses to the reportable segments.

These inter-segment transactions are generally priced based on provisions of service agreements signed between our legal entities, according to which services are to be allocated at cost for external expenses, or at cost plus a mark-up of between 4% and 10%, depending on the nature of the service. According to a cash pooling agreement with our subsidiaries, interest is allocated/paid to segments at 12-month Euribor plus 5%.

Information related to each reportable segment is set out below. Segment revenues and other income, Research and development expenses, Selling, general and administrative expenses, and Royalties and other operating income and expenses, and Adjusted net income (loss) attributable to shareholders of Cellectis (which does not include non-cash stock-based expense) are used by the CODM to measure performance. The CODM does not review any asset or liability information by segment or by region.

Adjusted Net Income (Loss) attributable to shareholders of Cellectis S.A. is not a measure calculated in accordance with IFRS. Because Adjusted Net Income (Loss) attributable to shareholders of Cellectis excludes Non-cash stock based compensation expense—a non-cash expense, we believe that this financial measure, when considered together with our IFRS financial statements, can enhance an overall understanding of Cellectis' financial performance. Moreover, our management views the Company's operations, and manages its business, based, in part, on this financial measure.

The net income (loss) includes the impact of the operations between segments while the intra-segment operations are eliminated.

In our notes to Consolidated Financial Statements for the year ended 2015, we allocated the share-based compensation in the segment related to the employee that benefited from such compensation. Since 2016, we allocate the share-based compensation to the share-related entity, considering that the share-based compensation is a compensation linked to the involvement in an entity performance. In practice, all the share-based compensation which are based on Cellectis S.A. shares will be charged in the Therapeutics segment, even if some Calyxt employees are included in a stock-option plan. In this note, 2015 figures take into account this change (€610 thousand of R&D expenses and €14 thousand of SG&A expenses reclassified from the Plants segment to the Therapeutics segment) and disclose comparable amounts. It was not applicable for 2014 figures.

Details of key performance indicators by reportable segment

€ in thousands	2014 Plants	2014 Therapeutics	2014 Total reportable segments	2015 Plants	2015 Therapeutics	2015 Total reportable segments	2016 Plants	2016 Therapeutics	2016 Total reportable segments
Segment revenues and other income	**1,156**	**27,564**	**28,720**	**44**	**57,141**	**57,185**	**647**	**53,730**	**54,376**
Inter-segment revenues	(91)	(1,171)	(1,262)	—	(800)	(800)	(118)	(3,252)	(3,370)
Revenues with Cellectis AB (discontinued operations)	—	(1,005)	(1,005)	—	—	—	—	—	—
External revenues and other income	**1,065**	**25,388**	**26,453**	**44**	**56,341**	**56,385**	**529**	**50,477**	**51,007**
Research and development expenses	(922)	(13,485)	(14,407)	(2,590)	(49,820)	(52,410)	(3,716)	(67,183)	(70,899)
Selling, general and administrative expenses	(822)	(12,292)	(13,114)	(1,652)	(25,586)	(27,238)	(4,346)	(34,885)	(39,230)
Royalties and other operating income and expenses	(269)	(3,908)	(4,177)	(245)	(4,416)	(4,660)	(428)	(1,267)	(1,695)
Total operating expenses	**(2,013)**	**(29,685)**	**(31,698)**	**(5,112)**	**(79,197)**	**(84,309)**	**(8,490)**	**(103,334)**	**(111,824)**
Operating income (loss) before tax	**(948)**	**(4,297)**	**(5,245)**	**(5,068)**	**(22,856)**	**(27,924)**	**(7,961)**	**(52,857)**	**(60,818)**
Financial gain (loss)	148	6,947	7,095	233	7,317	7,550	79	(37)	42
Net income (loss) from continuing operations	**(800)**	**2,650**	**1,850**	**(4,835)**	**(15,539)**	**(20,373)**	**(7,882)**	**(52,894)**	**(60,776)**
Net income (loss) from discontinued operations	—	(2,822)	(2,822)	—	—	—	—	—	—
Non-controlling interests	—	992	992	—	(171)	(171)	—	—	—
Net income (loss) attributable to shareholders of Cellectis	**(800)**	**820**	**20**	**(4,835)**	**(15,710)**	**(20,544)**	**(7,882)**	**(52,894)**	**(60,776)**
Adjustment of non-cash stock-based compensation expense	—	548	548	846	29,257	30,103	992	51,982	52,974
Adjusted net income (loss) attributable to shareholders of Cellectis	**(800)**	**1,368**	**568**	**(3,989)**	**13,547**	**9,559**	**(6,890)**	**(912)**	**(7,802)**
Depreciation and amortization	(74)	(1,298)	(1,372)	(89)	(1,657)	(1,745)	(312)	(1,686)	(1,998)
Additions to tangible and intangible assets	134	221	354	474	3,502	3,977	9,407	3,762	13,169

Entity-wide disclosures:

Revenues from external customers by products and services and by country of origin for fiscal years 2014, 2015 and 2016 are given in Note 3.1.

In 2016, two clients represent more than 10% of the total revenue: Client A with 37% and Client B with 57%.

In 2015, two clients represent more than 10% of the total revenue: Client A with 49% and Client B with 47%.

In 2014, three clients represent more than 10% of the total revenue from continuing operations: Client B with 42.7%, Client C with 19.4% and Client A with 14.2%.

Note 4. Impairment tests

Accounting policy

Amortizable intangible assets and depreciable tangible assets are tested for impairment when there is an indicator of impairment. Goodwill is tested for impairment at least once a year. Impairment tests involve comparing the carrying amount of cash-generating units with their recoverable amount. The recoverable amount of an asset is the higher of (i) its fair value less costs to sell and (ii) its value in use. If the recoverable amount of any asset is below its carrying amount, an impairment loss is recognized to reduce the carrying amount to the recoverable amount.

Our cash-generating units ("CGUs") correspond to the operating/reportable segments: Therapeutics and Plants.

Results of impairment test

The remaining goodwill of Cellectis AB was written off in 2014 based on its final sale price. We did not identify indicators that any intangible or tangible asset was impaired at the end of December 31, 2014.

No indicator of impairment has been identified for any intangible or tangible assets in either of the CGUs at the end of December 31, 2015 and 2016.

Note 5. Intangible assets

Accounting policy

Capitalization of development expenses

In accordance with IAS 38 *Intangible Assets*, development expenses are recorded as intangible assets only if all the following criteria are met:

- technical feasibility necessary for the completion of the development project;
- intention on our part to complete the project and to utilize it;
- capacity to utilize the intangible asset;
- proof of the probability of future economic benefits associated with the asset;
- availability of the technical, financial, and other resources for completing the project; and
- reliable evaluation of the development expenses.

Since some of these criteria were not fulfilled, we did not capitalize any development costs.

Other intangible assets

The other intangible assets we acquired with definite useful lives are recognized at cost less accumulated amortization and impairment. Amortization expense is recorded on a straight-line basis over the estimated useful lives of the intangible assets, in the line Research and Development expenses or Selling, general and administrative expenses of the Statement of Consolidated Operations, depending on the use of the related asset.

The estimated useful lives are as follows:

- Software: from 1 year to 3 years;
- Patents: amortized from acquisition on the period ending when legal protection expires, maximum of 20 years.

Details of intangible assets

	Goodwill	Licences and Patents	Other intangible assets	Assets under construction	Total
			€ in thousands		
Net book value as of January 1, 2014	**1,096**	**1,154**	**2,377**	**—**	**4,627**
Change in scope	(1,059)	—	(2,152)	—	(3,211)
Additions to intangible assets	—	11	—	—	11
Amortization expense	—	(139)	(148)	—	(287)
Translation adjustments	(37)	—	(77)	—	(114)
Net book value as of December 31, 2014	**—**	**1,026**	**—**	**—**	**1,026**
Gross value at end of period	—	1,928	—	—	1,928
Accumulated depreciation and impairment at end of period	—	(902)	—	—	(902)
Net book value as of January 1, 2015	**—**	**1,026**	**—**	**—**	**1,026**
Additions to intangible assets	—	87	—	—	87
Amortization expense	—	(157)	—	—	(157)
Net book value as of December 31, 2015	**—**	**956**	**—**	**—**	**956**
Gross value at end of period	—	2,015	—	—	2,015
Accumulated depreciation and impairment at end of period	—	(1,059)	—	—	(1,059)
Net book value as of January 1, 2016	**—**	**956**	**—**	**—**	**956**
Additions to intangible assets	—	192	—	397	589
Disposal of intangible assets	—	(67)	—	—	(67)
Amortization expense	—	(205)	—	—	(205)
Net book value as of December 31, 2016	**—**	**877**	**—**	**397**	**1,274**
Gross value at end of period	—	2,140	—	397	2,537
Accumulated depreciation and impairment at end of period	—	(1,263)	—	—	(1,263)

The column ‘Change in scope’ corresponds to the removal of entity Cellectis AB from the scope of consolidation following its sale in August 2014.

Intangible assets mainly consist of electroporation technology patents acquired in 2011. The 2016 addition in intangible assets under construction corresponds to the internal development of existing technology.

Note 6. Property, plant and equipment

Accounting policy

Property, plant and equipment are recognized at acquisition cost less accumulated depreciation and any impairment losses. Acquisition cost includes expenditure that is directly attributable to the acquisition of the asset.

Depreciation is expensed on a straight-line basis over the estimated useful lives of the assets. If components of property, plant and equipment have different useful lives, they are accounted for separately.

The estimated useful lives are as follows:

• Buildings and other outside improvements	10-20 years
• Leasehold improvements	5-10 years
• Office furniture	10 years
• Laboratory equipment	3-10 years
• Office equipment	5 years
• IT equipment	3 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted, if appropriate.

Any gain or loss on disposal of an item of property, plants and equipment is determined by comparing the proceeds from disposal with the carrying amount of the item. The net amount is recognized in the statement of consolidated operations under the line item “Other operating income” or “Other operating expenses.”

Payments made under operating leases are expensed on a straight-line basis over the term of the lease. Lease incentives received are recognized as an integral part of the total lease expense, over the term of the lease.

If, according to the terms of a lease, it appears that substantially all the risks and rewards incidental to ownership are transferred from the lessor to the lessee, the associated leased assets are initially recognized as an asset at the lower of their fair value and the present value of the minimum lease payments and subsequently depreciated or impaired, as necessary. The associated financial obligations are reported in the line item “non-current financial debt” and “current financial debt.”

Details of property, plant and equipment

	Lands and Buildings	Technical equipment	Fixtures, fittings and other equipment	Assets under construction	Total
			€ in thousands		
Net book value as of January 1, 2014	**1,563**	**2,244**	**62**	**—**	**3,869**
Change in scope	—	(325)	—	—	(325)
Additions to tangible assets	—	337	7	—	344
Disposal of tangible assets	—	(7)	—	—	(7)
Depreciation expense	(397)	(879)	(28)	—	(1,304)
Translation adjustments	—	33	—	—	33
Net book value as of December 31, 2014	**1,166**	**1,403**	**41**	**—**	**2,610**
Gross value at end of period	2,381	8,552	418	—	11,351
Accumulated depreciation and impairment at end of period	(1,215)	(7,150)	(377)	—	(8,742)
Net book value as of January 1, 2015	**1,166**	**1,403**	**41**	**—**	**2,610**
Additions to tangible assets	1,331	2,242	298	168	4,038
Disposal of tangible assets	—	(106)	—	—	(106)
Depreciation expense	(614)	(922)	(52)	—	(1,587)
Reclassification		(17)	18	—	1
Translation adjustments	20	61	7	—	88
Net book value as of December 31, 2015	**1,903**	**2,661**	**312**	**168**	**5,043**
Gross value at end of period	3,734	10,734	768	168	15,403
Accumulated depreciation and impairment at end of period	(1,831)	(8,074)	(456)	—	(10,361)
Net book value as of January 1, 2016	**1,903**	**2,661**	**312**	**168**	**5,043**
Additions to tangible assets	10,089	973	508	815	12,384
Disposal of tangible assets	—	(2)	(1)	(165)	(168)
Reclassification	—	2	(2)	—	—
Depreciation expense	(670)	(973)	(151)	—	(1,794)
Translation adjustments	476	52	6	34	569
Net book value as of December 31, 2016	**11,798**	**2,712**	**671**	**852**	**16,033**
Gross value at end of period	14,311	10,088	1,047	852	26,299
Accumulated depreciation and impairment at end of period	(2,513)	(7,376)	(376)	—	(10,266)

The column 'Change in scope' corresponds to the removal of Cellectis AB from the scope of consolidation following its sale in August 2014.

No assets have been pledged as security for financial liabilities. There is no restriction on title of property, plant and equipment, except for assets recognized under finance lease agreements.

For the year ended December 31, 2016, additions to tangible assets include the purchase by Calyxt, Inc. of a 10-acre parcel of land in Roseville, Minnesota for $5.6 million and the construction of greenhouses on this land for $4.3 million. In addition we made investments in R&D equipment in both the United States and France. The addition in tangible assets under construction corresponds to expenses linked with the Montvale facility, which is in progress at the closing date.

Details of finance lease

	As of December 31,	
	2015	2016
	€ in thousands	
Gross value	5,377	3,957
Accumulated depreciation	(4,893)	(3,744)
Net	**484**	**213**

The finance leases relate mainly to laboratory equipment and IT equipment.

Note 7. Financial assets and liabilities

7.1 Accounting principles

Financial assets

Non-current financial assets are recorded at the amortized cost and correspond to security deposits mainly relating to our facilities rents.

Current financial assets correspond to investments and are recorded at fair value through profit and loss, which is the nominal value of the investment adjusted with the daily mark-to-market value.

Trade and other receivables are recorded at fair value, which is the nominal value of invoices unless payment terms require a material adjustment for the time value discounting effect at market interest rates. Trade receivables are subsequently measured at amortized cost. A valuation allowance for trade and other receivables is recognized if their recoverable amount is less than their carrying amount.

Receivables are classified as current assets, except for those with a maturity exceeding 12 months after the reporting date.

Government grants to Cellectis related to research and development expenses for research programs are recognized as subsidies receivables in the period in which the expenses subject to the subsidy have been incurred, provided there is a reasonable assurance that we will comply with conditions attached to the subsidy and that the subsidy will be received.

Financial liabilities

Financial liabilities comprise of trade and other payables, finance leases and conditional advances.

We initially recognize financial liabilities on the transaction date, which is the date that we become a party to the contractual provisions of the instrument.

We derecognize financial liabilities when our contractual obligations are discharged, canceled or expire.

Financial liabilities are valued at amortized cost. The amount of interest recognized in financial expenses is calculated by applying the financial liability's effective interest rate to its carrying amount. Any difference between the expense calculated using the effective interest rate and the actual interest payment impacts the value at which the financial liability is recognized.

Liabilities for short term employee benefit are included in financial liabilities. They are recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if we have a present legal or constructive obligation to pay the amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

7.2 Detail of financial assets and liabilities

The following table shows the carrying amounts and fair values of financial assets and financial liabilities. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

	Accounting category			
2015	Fair value through profit and loss	Amortized cost	Book value on the statement of financial position	Fair Value
		€ in thousands		
Financial assets				
Non-current financial assets	—	845	845	845
Trade receivables	—	6,035	6,035	6,035
Subsidies receivables	—	9,102	9,102	9,102
Cash and cash equivalents	314,238	—	314,238	314,238
Total financial assets	**314,238**	**15,982**	**330,219**	**330,219**
Financial liabilities				
Non-current financial liabilities	—	66	66	66
Current financial liabilities	—	1,921	1,921	1,921
Trade payables	—	6,611	6,611	6,611
Other current liabilities	—	12,697	12,697	12,697
Total financial liabilities	**—**	**21,295**	**21,295**	**21,295**

	Accounting category			
2016	Fair value through profit and loss	Amortized cost	Book value on the statement of financial position	Fair Value
		€ in thousands		
Financial assets				
Non-current financial assets	—	656	656	656
Trade receivables	—	3,441	3,441	3,441
Subsidies receivables	—	8,276	8,276	8,276
Current financial assets	34,714	—	34,714	34,714
Cash and cash equivalents	241,502	—	241,502	241,502
Total financial assets	**276,216**	**12,372**	**288,588**	**288,588**
Financial liabilities				
Non-current financial liabilities	—	28	28	28
Current financial liabilities	1,605	36	1,641	1,641
Trade payables	—	9,223	9,223	9,223
Other current liabilities	—	4,930	4,930	4,930
Total financial liabilities	**1,605**	**14,217**	**15,822**	**15,822**

7.3. Financial risks management

We have exposure to the following risks arising from financial instruments:

Foreign exchange risk

A portion of our revenue is generated in currencies other than euro. Although our strategy is to favor the euro as our transaction currency when signing contracts, some agreements have been signed in US dollars (primarily our agreement signed with Pfizer Inc. ("Pfizer").

As of December 31, 2015, 17% of our cash and cash equivalents were denominated in euros. As of December 31, 2016, 64% of our cash and cash equivalents were denominated in US dollars and 69% of our current financial assets and cash and cash equivalents were denominated in US dollars.

As of December 31, 2016, we held the following derivative financial instruments, denominated in US dollars:

2016	Notional	Fair Value	Maturity
USD forward sale contracts	42,430	(1,605)	2017 to 2018
USD forward purchase contracts	—	—	
Total derivative financial instruments		**(1,605)**	
of which :			
Derivative financial assets		—	
Derivative financial liabilities		(1,605)	

We do not apply hedge accounting to these instruments.

Liquidity risk

Our financial debt consists of finance lease liabilities (€64 thousand as of December 31, 2016).

We have incurred losses and cumulative negative cash flows from operations since our inception in 2000, and we anticipate that we will continue to incur losses for at least the next several years. As of December 31, 2016, we held €241.5 million in cash and cash equivalents.

Interest rate risk

As of December 31, 2015, we were only liable for governmental conditional advances with either no interest or interest at a fixed, generally below market rate. Consequently, we were not significantly exposed to fluctuations in interest rates for our liabilities. These governmental conditional advances have been settled during the year 2016.

We seek to engage in prudent management of our cash and cash equivalents, mainly cash on hand and common financial instruments (typically short- and mid-term deposits). Furthermore, the interest rate risk related to cash, cash equivalents and common financial instruments is not significant based on the quality of the financial institutions with which we work.

Credit risk

Credit risk is the risk of our financial loss if a customer or counterparty to a financial instrument defaults on its contract commitments. We are exposed to credit risk due to our trade receivables, subsidies receivables and cash equivalents.

Our policy is to manage our risk by dealing with third parties with good credit standards.

Note 8. Inventories

Accounting policy

Inventories are measured at the lower of cost and net realizable value. Cost is determined using the first in first out method.

Description of inventories

They consist of €112 thousands in raw materials and laboratory consumables (representing pharmaceutical and chemical products). No provision for impairment has been recorded as of December 31, 2015 and 2016.

Note 9. Trade receivables and other current assets

Accounting policies on trade receivables and other current assets are described in Note 7.1.

9.1 Trade receivables

	As of December 31,	
	2015	2016
	€ in thousands	
Trade receivables	6,266	3,713
Valuation allowance	(231)	(273)
Total net value of trade receivables	**6,035**	**3,441**

All trade receivables have payment terms of less than one year.

9.2 Subsidies receivables

	As of December 31,	
	2015	2016
	€ in thousands	
Research tax credit	8,227	7,959
Other subsidies	1,981	1,423
Valuation allowance for other subsidies	(1,106)	(1,106)
Total	**9,102**	**8,276**

Research tax credit as at December 31, 2015 includes €3.1 million related to the 2014 research tax credits and €5.1 million related to the 2015 research tax credits.

Research tax credit receivables as of December 31, 2016 include the accrual for a French research tax credit related to 2016 for €7.2 million and the remaining amount relates to tax credits in the United States.

The valuation allowance for other subsidies corresponds to the CellMill grant, which was fully reserved in 2014.

9.3 Other current assets

	As of December 31, 2015	2016
VAT receivables	461	1,523
Prepaid expenses and other prepayments	3,778	6,277
Other current assets	446	615
Total	**4,685**	**8,414**

Prepaid expenses and other prepayments primarily include advances to our sub-contractors on research and development activities. They mainly relate to advance payments to suppliers of biological raw materials and to third parties participating in product manufacturing.

During 2016, we prepaid certain manufacturing costs related to our products UCART123 and UCART CS1 of which delivery is expected in the coming years.

Note 10. Current financial assets and Cash and cash equivalents

As of December 31, 2015	Carrying amount	Unrealized Gains/(Losses)	Estimated fair value
		€ in thousands	
Current financial assets	—	—	—
Cash and cash equivalents	314,238	—	314,238
Current financial assets and cash and cash equivalents	**314,238**	**—**	**314,238**

As of December 31, 2016	Carrying amount	Unrealized Gains/(Losses)	Estimated fair value
		€ in thousands	
Current financial assets	34,714	—	34,714
Cash and cash equivalents	241,502	—	241,502
Current financial assets and cash and cash equivalents	**276,216**	**—**	**276,216**

10.1 Current financial assets

Accounting policies

Current financial assets that are measured at fair value through profit or loss in accordance with IAS 39 include the following:

- Financial assets including embedded derivatives for which Cellectis elected to designate at fair value through profit or loss;
- Financial assets managed on a fair value basis; and
- Derivative instruments that are not documented in hedging relationships.

IFRS 13 (Fair Value Measurement) requires counterparty and own credit risk to be taken into account when measuring the fair value of financial instruments. This risk is estimated on the basis of observable, publicly-available statistical data.

Details of current financial assets

Current financial assets are measured at fair value through profit or loss and are classified as follows within the fair value hierarchy:

- Instruments classified under level 1 are measured with reference to quoted prices in active markets; they consist of notes indexed to equity index. Their nominal value amount to $37.5 million (€35.6 million) and their fair value amount to €34.7 million.

As of December 31, 2016, there is no instrument classified under level 2.

10.2 Cash and cash equivalents

Accounting policy

Cash and cash equivalents are held for the purpose of meeting short-term cash commitments rather than for the purpose of investment or for other purposes. They are readily convertible into a known amount of cash and are subject to an insignificant risk of changes in value. Cash and cash equivalents include cash, bank accounts, money market funds and fixed bank deposits that meet the definition of a cash equivalent. Cash equivalents are fair valued at the end of each reporting period.

Details of cash and cash equivalents

	As of December 31,	
	2015	2016
	€ in thousands	
Cash and bank accounts	283,877	210,690
Money market funds	11,361	11,812
Fixed bank deposits	19,000	19,000
Total cash and cash equivalents	**314,238**	**241,502**

Money market funds earn interest and are refundable overnight. Fixed bank deposits have fixed terms that are less than three months or are readily convertible to a known amount of cash.

Note 11. Financial liabilities

11.1 Detail of financial liabilities

	As of December 31,	
	2015	2016
Finance leases	64	28
Other	2	—
Total non-current financial liabilities	**66**	**28**
Conditional advances	1,839	—
Finance leases	82	36
Derivative instruments	—	1,605
Total current financial liabilities	**1,921**	**1,641**
Trade payables	6,611	9,223
Other current liabilities	12,697	4,930
Total Financial liabilities	**21,295**	**15,822**

Conditional advances were payments made to Cellectis by Bpifrance (formerly named OSEO Innovation) to co-finance research programs.

Derivative instruments consist of fair value of zero premium collar instruments and accumulators (note 7.3. Financial risks management).

11.2 Due dates of the financial liabilities

Balance as of December 31, 2015	Gross Amount	Less than One Year	One to Five Years	More than Five Years
		€ in thousands		
Conditional advances	1,839	1,839	—	—
Finance leases	146	82	64	—
Other	2	—	2	—
Financial liabilities	**1,986**	**1,921**	**66**	**—**
Trade payables	6,611	6,611	—	—
Other current liabilities	12,697	12,697	—	—
Total financial liabilities	**21,295**	**21,229**	**66**	**—**

Balance as of December 31, 2016	Gross Amount	Less than One Year	One to Five Years	More than Five Years
		€ in thousands		
Conditional advances	—	—	—	—
Finance leases	64	36	28	—
Derivative instruments	1,605	1,605	—	—
Financial liabilities	**1,669**	**1,641**	**28**	**—**
Trade payables	9,223	9,223	—	—
Other current liabilities	4,930	4,930	—	
Total financial liabilities	**15,822**	**15,794**	**28**	**—**

11.3 Conditional advances

Accounting policy

We receive government grants for advanced research programs we conduct alone or in connection with other unrelated entities. This government aid is provided for and managed by French state-owned entities, and specifically "Banque Publique d'Investissement" ("Bpifrance"), formerly named OSEO Innovation.

We, alone or with other unrelated entities, enter into multi-year contractual arrangements for the financing of a specific research program. This arrangement may consist of subsidies only, conditional advances only or both subsidies and conditional advances. Subsidies and conditional advances are paid in fixed installments at predetermined contractual dates, subject generally to milestones based on progress of the research and documentation.

Subsidies received are non-refundable. Conditional advances received are subject to nil or low interest rate depending on contractual provisions. If and when the research program has generated an amount of revenues equal to or higher than the amount set forth in the original contract, contractual repayment is required. In addition, if we decide to stop the research program, the conditional advance may be repayable.

Subsidies that relate to expenses we incur for those research programs are recognized in the line item "Other income" in the period in which the expenses subject to the subsidy have been incurred.

For conditional advances, and in accordance with IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*, the advantage resulting from nil or low interest rate as compared to a market interest rate is considered and accounted for as a government grant. A financial liability is recognized for proceeds received from the conditional advance less the grant, and interest expense is subsequently imputed at market interest rate.

Details of conditional advances

	OSEO A0609014Q	OSEO ACTIVE	OSEO I1107018W	OSEO I1010001W	TOTAL
			€ in thousands		
Opening Balance as of January 1, 2015	**150**	**1,524**	**746**	**944**	**3,364**
+ receipts	—	—	—	—	—
- repayments	(150)	—	(746)	—	(896)
Reallocation	—	(528)	—	(101)	(629)
Balance as of December 31, 2015	**—**	**996**	**—**	**843**	**1,839**
Of which:					
Non-current portion	—	—	—	—	—
Current portion	—	996	—	843	1,839
Opening Balance as of January 1, 2016	**—**	**996**	**—**	**843**	**1,839**
+ receipts		—	—	—	—
- repayments	—	(500)	—	—	(500)
Reallocation	—	(496)	—	(843)	(1,339)
Balance as of December 31, 2016	**—**	**—**	**—**	**—**	**—**

OSEO ACTIVE

In 2016, following the settlement closing the research program, a portion has been reclassified in Other revenue, and another portion has been reimbursed.

OSEO PRINICPS

In 2016, following the settlement closing the research program, the conditional advance has been reclassified in other revenue.

Note 12. Other current liabilities

	As of December 31,	
	2015	2016
	€ in thousands	
VAT Payables	6,314	182
Accruals for personnel related expenses	3,958	3,928
Other	2,425	819
Total	**12,697**	**4,930**

As of December 31, 2015, VAT payables were mainly due to invoicing to Les Laboratoires Servier related collaboration programs.

For both years, accruals for personnel are related to annual bonuses, vacations accruals and social expenses on redundancy plans.

As of December 31, 2015 and 2016, "Other" include subsidies liabilities for €1.8 million and €0.5 million, respectively. The decrease is mainly due to reimbursements to BpiFrance during 2016.

Note 13. Deferred revenues and deferred income

Accounting policies

As disclosed in Note 3, non-refundable upfront payments are deferred and recognized as revenue over the period of the collaboration agreement.

Details of deferred revenues and differed income

	As of December 31,	
	2015	2016
	€ in thousands	
Deferred revenues	54,422	36,778
Lease incentive	336	153
Total Deferred revenue and deferred income	**54,758**	**36,931**

Deferred revenues

Since 2014, most of the deferred revenues corresponds to upfront payments for the collaboration agreements with Les Laboratoires Servier and Pfizer Inc.

Lease incentive

In November 2011, when we entered into an operating lease agreement for our headquarters in Paris (BioPark), we received a lease incentive of €1.1 million from the lessor, which is deferred and amortized over 6 years lease term. This amount is booked as a reduction in operating lease expenses.

Note 14. Capital

14.1 Share capital issued

Accounting policy

Share capital comprises ordinary shares and shares with double voting rights classified in equity. Costs directly attributable to the issue of ordinary shares or share options are recognized as a reduction in equity. Repurchased own shares are classified as treasury shares and deducted from equity.

Nature of the Transactions	Share Capital	Share premium	Number of shares	Nominal value
		€ in thousands		in €
Balance as of January 1, 2014	**1,054**	**133,908**	**21,082,320**	**0.05**
Capital increase by issuance of common shares	200	19,446	4,000,000	—
Capital increase by issuance of ordinary shares (Pfizer)	139	25,640	2,786,924	—
Capital increase by issuance of ordinary shares (BSA & Free shares)	79	13,301	1,577,477	—
Share based compensation	—	548	—	—
Balance as of December 31, 2014	**1,472**	**192,842**	**29,446,721**	**0.05**
Balance as of January 1, 2015	**1,472**	**192,842**	**29,446,721**	**0.05**
Capital increase by issuance of common shares (IPO Nasdaq)	275	194,382	5,500,000	—
Capital increase by issuance of ordinary shares (BSA & Free shares)	12	4,066	231,893	—
Non-cash stock-based compensation expense	—	29,392	—	—
Balance as of December 31, 2015	**1,759**	**420,682**	**35,178,614**	**0.05**
Balance as of January 1, 2016	**1,759**	**420,682**	**35,178,614**	**0.05**
Capital increase by issuance of ordinary shares (BSA, BSPCE and free shares)	8	642	156,446	—
Non-cash stock-based compensation expense	—	51,982	—	—
Balance as of December 31, 2016	**1,767**	**473,306**	**35,335,060**	**0.05**

Capital evolution in 2016

- During the year ended December 31, 2016, we issued 156,446 ordinary shares resulting from exercise of 50,000 BSA and 6,700 BSPCE and acquisition of 99,488 free shares.

Capital evolution in 2015

- On March 30, 2015, we issued 5,500,000 ordinary shares in the form of American Depositary Shares on the Nasdaq Global Market for gross proceeds of €211.5 million. In connection with this issuance, €16.9 million in fees were deducted from the share premium.
- During the twelve month period ended December 31, 2015, we issued 101,893 ordinary shares related to the conversion of warrants, 70,000 ordinary shares related to stock options's exercises and 60,000 ordinary shares corresponding to free shares granted in 2013.

Capital evolution in 2014

- On March 19, 2014, we entered into an agreement with Trout Capital LLC to act as placement agent to provide financial advisory services in connection with a private placement of our ordinary shares to "qualified institutional buyers" or "institutional accredited investors." On March 24, 2014, we issued 4,000,000 ordinary shares in the private placement for net proceeds of €20.5 million. Fees paid to Trout Capital LLC amounted to €965 thousand, including the fair value of €174 thousand of the 50,000 non-employee warrants issued on March 27, 2014 and €791 thousand in cash. Such fees were deducted from the share premium.
- On July 31, 2014, we issued 2,786,924 ordinary shares in the context of a share capital increase to the benefit of Pfizer OTC B.V. for a total subscription amount of €25.8 million.
- On September 29, 2014, the vesting period for 82,123 free shares expired and such shares were issued accordingly.
- On November 13, 2014, we issued 1,495,357 ordinary shares in connection with the exercise of non-employees warrants for a total subscription of €13.4 million.

BSA 2011:

On October 28, 2011, using the delegation of authority granted by the General Assembly held the same day, we issued 12,195,113 warrants (Bon de Souscription d'Actions or "BSA") to the existing shareholders with a ratio of one BSA for one share. October 28, 2014 was the closing date for the exercise of the "BSA 2011." Pursuant to the terms of the plan, we issued 1,470,836 ordinary shares for gross proceeds of €13.2 million.

Voting rights:

After a shareholder continuously holds ordinary shares for two years, each ordinary share held by such shareholder is entitled to two votes.

- At December 31, 2014, we had 29,446,721 ordinary shares outstanding of which 8,762,458 had a double voting right.
- At December 31, 2015, we had 35,178,614 ordinary shares outstanding of which 7,470,898 had a double voting right.
- At December 31, 2016, we had 35,333,060 ordinary shares outstanding of which 4,531,047 had a double voting right.

Otherwise, our ordinary shares are not entitled to any preferential voting right or restriction.

14.2 Share warrants and non-employee warrants

Share warrants and non-employee warrants consist of Bon de Souscription d'Action ("BSAs") which are granted to our board members and consultants.

Holders of vested stock options and warrants are entitled to subscribe to a capital increase of Cellectis at predetermined exercise price.

Date	Type	Number of warrants/shares oustanding as of 01/01/2016	Number of warrants/shares granted	Number of warrants/shares vested/exercised	Number of warrants/shares voided	Number of warrants/shares oustanding as of 12/31/2016	Maximum of shares to be issued	Number of warrants/shares exercisable as of 12/31/2016
07/20/2007	BSPCE C	**132 992**	—	(6 700)	—	**126 292**	131 182	126 292
02/28/2008	BSPCE D	**1 867**	—	—	—	**1 867**	1 939	1 867
07/27/2010	BSPCE E	**19 702**	—	—	—	**19 702**	20 464	19 702
09/18/2012	Free shares	**2 976**	—	(1 488)	(1 488)	**—**	—	—
03/19/2013	Free shares	**10 000**	—	—	(8 000)	**2 000**	2 000	—
03/24/2014	BSA	**50 000**	—	(50 000)	—	**—**	—	—
04/10/2014	Free shares	**98 000**	—	(98 000)	—	**—**	—	—
01/08/2015	Free shares	**50 000**	—	—	—	**50 000**	50 000	—
03/12/2014	Free shares	**450 100**	—	—	(9 550)	**440 550**	440 550	—
03/24/2015	Stock Options	**1 815 330**	—	—	(51 490)	**1 763 840**	1 763 840	771 680
03/27/2015	BSA	**180 000**	—	—	—	**180 000**	180 000	60 000
05/18/2015	BSA	**50 000**	—	—	—	**50 000**	50 000	16 667
09/08/2015	BSA	**274 200**	—	—	—	**274 200**	274 200	91 400
09/08/2015	Stock Options	**1 932 300**	—	—	(63 500)	**1 868 800**	1 868 800	584 000
03/14/2016	BSA	**—**	229 361	—	(42 161)	**187 200**	187 200	—
03/14/2016	Stock Options	**—**	2 060 602	—	(30 015)	**2 030 587**	2 030 587	—
10/28/2016	BSA	**—**	188 000	—	—	**188 000**	188 000	—
10/28/2016	Stock Options	**—**	2 773 028	—	—	**2 773 028**	2 773 028	—
						—		
	Total	**5 067 467**	**5 250 991**	**(156 188)**	**(206 204)**	**9 956 066**	**9 961 790**	**1 671 608**

- In April 2016, our subsidiary Calyxt Inc. granted options in Calyxt Inc. representing as of December 31, 2016 a 8.6% interest of that subsidiary if fully exercised to a small group of its employees, directors and executive officers. The compensation expense for 2016 amounted to €0.7 million (see Note 15).
- In September 2015, our subsidiary Calyxt Inc. granted options in Calyxt Inc. representing as of December 31, 2016 a 0.6% interest of that subsidiary if fully exercised to a small group of its employees, directors and executive officers. The compensation expense for 2016 amounted to €0.3 million (see Note 15).
- In December 2014, our subsidiary Calyxt Inc. granted options in Calyxt Inc. representing as of December 31, 2016 a 1.2% interest of that subsidiary if fully exercised to a small group of its employees and two of our directors and executive officers, and it reserved an additional 0.1% for further grants. Calyxt Inc. made these grants to provide incentives for these employees that are directly linked to the performance of Calyxt Inc., rather than Cellectis as a whole. The compensation expense for 2016 was null (see Note 15).

14.3 Non-controlling interests

On December 19, 2013, Cellectis S.A. contributed its 75% investment in Ectycell S.A.S. to Cellectis Bioresearch S.A.S., and Caisse des Dépôts et Consignations contributed €3.5 million to Cellectis Bioresearch S.A.S. As a result, Ectycell S.A.S. became a wholly-owned subsidiary of Cellectis Bioresearch S.A.S, of which, in turn, Cellectis owns 75.5% and Caisse des Dépôts et Consignations owns 24.5%. This transaction was accounted for as an equity transaction between us and the non-controlling interest, resulting in the transfer of a 24.5% of the consolidated equity of Cellectis Bioresearch S.A.S. to a non-controlling interest for an amount of €3.3 million.

On May 18, 2015, Cellectis S.A. repurchased the Cellectis Bioresearch S.A.S. shares held by Caisse des Dépôts et Consignations for €3.5 million. Thereafter, no non-controlling interest has been recorded.

The following table summarizes the information relating to each of our subsidiaries that reported non-controlling interest ("NCI"):

	ECTYCELL		CELLECTIS BIORESEARCH		CELLECTIS BIORESEARCH Inc.	
	2015	2016	2015	2016	2015	2016
Revenue	—	—	327	—	(32)	—
Net Profit (Loss)	228	—	2,062	—	58	—
Net Profit (Loss) attributable to NCI	**56**	**—**	**60**	**—**	**55**	**—**
Other comprehensive income	—	—	1	—	(196)	—
Total comprehensive income	228	—	2,063	—	(138)	—
Total comprehensive income attributable to NCI	**56**	**—**	**60**	**—**	**(10)**	**—**

The statement of comprehensive income discloses an amount attributable to non-controlling interests. For the years ended December 31, 2015 and 2016, they relates to the change in currency translation adjustment linked with the cumulative non-stock share-based compensation recorded for Calyxt.

As these three entities has been merged into Cellectis S.A. in 2015, they have no balance sheet as of December 31, 2015 and 2016.

14.4 Treasury shares

In 2008, Cellectis executed a liquidity contract with Natixis Securities ("Natixis"). This contract entitles Natixis to transact on Euronext, on our behalf, in order to enhance the liquidity of transactions and regularity of quotation of our ordinary shares, in an independent way, without hindering the functioning of the market or misleading investors.

The initial advance payment made to Natixis Securities for the purpose of making transactions under this contract was €0.4 million. As of December 31, 2016, €0.3 million are classified in treasury shares (€0.2 million as of December 31, 2015) and the balance is presented in the line item "Other non-current financial assets" in the statements of consolidated financial position.

Note 15. Share-based payments

Accounting policy

The grant-date fair value of share warrants, employee warrants, stock options and free shares granted to employees is recognized as a payroll expense with a corresponding increase in equity, over the vesting period. The amount recognized as an expense is adjusted to reflect the actual number of awards for which the related service conditions are expected to be met.

Determining the fair value of share-based awards at the grant date requires judgment, we use the Black-Scholes option-pricing model to determine the fair value of share options. The determination of the grant date fair value of options using an option-pricing model is affected by our ordinary share fair value as well as assumptions regarding a number of other complex and subjective variables. These variables include the fair value of our ordinary shares, the expected term of the options, our expected share price volatility, risk-free interest rates, and expected dividends, which are estimated as follows:

- Fair value of our ordinary shares. We use the closing sales price per ordinary share as quoted on Alternext market of Euronext in Paris on the grant date for Cellectis grants and valuations reviewed by third parties for Calyxt grants.
- Expected term. The expected term represents the period that our share-based awards are expected to be outstanding. As we do not have sufficient historical experience for determining the expected term of the ordinary share option awards granted, we have based our expected term on the simplified method, which represents the average period from vesting to the expiration of the award.
- Expected volatility. For Cellectis grants, the expected share price volatility takes into account the Cellectis closing share prices and closing share price of industry peers for the remaining expected term of the ordinary share option grant. For the Calyxt grants, the expected volatility is based on comparable transactions method.
- Risk-free rate. The risk-free interest rate is based on the yields of French government securities with maturities similar to the expected term of the options for each option group for Cellectis grants and US Treasury bonds for Calyxt grants.
- Dividend yield. We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future. Consequently, we used an expected dividend yield of zero.

Service and performance conditions attached to the transactions are not taken into account in determining fair value. If any of the assumptions used in the Black-Scholes model changes significantly, share-based compensation for future awards may differ materially compared with the awards granted previously.

Details of share-based compensation

Share warrants and employee warrants consist of Bon de Souscription d'Action ("BSAs") and Bon de Souscription de Parts de Créateur d'Entreprise ("BSPCEs") which are granted to our employees.

Under these programs, holders of vested options are entitled to subscribe to a capital increase of Cellectis at predetermined exercise price.

The following table provides the impact related to these programs in the statement of consolidated operations per fiscal year.

The new instruments issued during the year ended December 31, 2016, are the following:

- March 14, 2016, 2,060,602 Cellectis stock options were granted to certain of our employees and officers. Non-cash stock-based compensation expense recorded during the year ended December 31, 2016 was €11.6 million.
- March 14, 2016, 229,361 Cellectis warrants were granted to members of our board of directors. Non-cash stock-based compensation expense recorded the year ended December 31, 2016 was €0.9 million.
- April 7, 2016, 6,850 Calyxt stock options were granted to certain of our employees, officers and consultants. Non-cash stock-based compensation expense recorded during the year ended December 31, 2016 was €0.7 million.
- October 28, 2016, 2,773,028 Cellectis stock options were granted to certain of our employees and officers. Non-cash stock-based compensation expense recorded during the twelve months ended December 31, 2016 was €2.5 million.
- October 28, 2016, 188,000 Cellectis warrants were granted to members of our board of directors. Non-cash stock-based compensation expense recorded the twelve months ended December 31, 2016 was €0.2 million.

Share warrants and employee warrants which are referred to as Bon de Souscription d'Action ("BSAs") are granted to our board members and consultants.

Holders of vested Cellectis stock options and warrants are entitled to exercise such options and warrants to purchase Cellectis Ordinary shares at a fixed exercise price established at the time of such options and warrants are granted.

The following table provides the expenses related to share-based compensation instruments during the years ended December 31, 2014, 2015 and 2016:

Non-cash share-based compensation expense

For the year ended	Free shares 2014 and before	Free shares 2015	Stock options 2015	BSA 2015	Stock options Calyxt 2015	Stock options 2016	BSA 2016	Stock options Calyxt 2016	Total
					€ in thousands				
December 31, 2014	548	—	—	—	—	—	—	—	548
December 31, 2015	367	4,271	22,715	2,038	712	—	—	—	30,103
December 31, 2016	93	6,471	27,096	3,105	290	14,112	1,106	702	52,974

The key terms and conditions related to these BSAs and BSPCEs are provided in the Notes 15.1 to 15.5.

15.1 Detail of Cellectis S.A. BSPCE

Date of grant: July 27, 2010

The BSPCEs were vested before January 1, 2012 up to 19,702 BSPCEs and vested for post January 1, 2012 on the basis of the following vesting schedule:

- Up to 19,702 BSPCE on July 27, 2012
- Up to 19,704 BSPCE on July 27, 2013

Date of grant (Board of Directors)	07/27/2010	07/27/2010	07/27/2010
Vesting period (years)	1	2	3
Plan expiration date	07/27/2020	07/27/2020	07/27/2020
Number of BSPCE granted	19,702	19,702	19,704
Share entitlement per BSPCE	1	1	1
Exercise price	8.28	8.28	8.28
Valuation method used	Black-Scholes	Black-Scholes	Black-Scholes
Grant date share fair value (in € per share)	8.28	8.28	8.28
Expected volatility	54%	54%	54%
Average life of BSPCE	5.5	6.0	6.5
Discount rate	3.14%	3.14%	3.14%
Expected dividends	0%	0%	0%
Performance conditions	NA	NA	NA
Fair value per BSPCE (in € per share)	5.52	5.52	5.52

15.2 Detail of Cellectis S.A. free shares

The free shares are subject to a two-year acquisition period followed by a two-year vesting period for French employees and a four years vesting period for foreign citizens.

Date of grant (Board of Directors)	09/18/2012	03/19/2013	03/19/2014	01/08/2015	05/18/2015	05/18/2015
Vesting period (years)	2	2	2	2	2	4
Number of Free shares granted	102,099	102,000	100,000	50,000	426,300	24,100
Share entitlement per Free share	1	1	1	1	1	1
Grant date share fair value (in € per share)	5.37	6.86	6.16	19.1	28.17	28.17
Expected dividends	0%	0%	0%	0%	0%	0%
Performance conditions	n.a	n.a	n.a	n.a	n.a	n.a

15.3 Detail of Cellectis S.A. stock options

The stock options are subject to a two-year vesting period for French employees and four years for foreign citizens.

Date of grant	03/24/2015	09/08/2015	03/14/2016	10/28/2016
Vesting period	Graded	Graded	Graded	Graded
Plan expiration date	03/24/2025	09/08/2025	03/14/2026	10/28/2026
Number of options granted	1,892,300	1,982,300	2,060,602	2,773,028
Share entitlement per options	1	1	1	1
Exercise price (in € per share)	38.45	27.55	22.44	17.90
Valuation method used	Black-Scholes	Black-Scholes	Black-Scholes	Black-Scholes
Grant date share fair value (in € per share)	40.00	28.59	22.48	16.42
Expected volatility	59.8%	59.9%	62.8%	63.2%
Average life of options	6.11	6.11	6.11	6.12
Discount rate	0.16%	0.42%	0.03%	0.00%
Expected dividends	0%	0%	0%	0%
Performance conditions	n.a	n.a	n.a	n.a
Fair value per options (in € per share)	22.02	15.86	12.65	8.96

15.4 Detail of Cellectis S.A. warrants

The key terms and conditions related to these warrants are provided in the table below.

Date of grant	03/27/2015	03/27/2015	05/18/2015	09/08/2015	03/14/2016	10/28/2016
Vesting period (years)	Graded	Graded	Graded	Graded	Graded	Graded
Plan expiration date	03/27/2025	03/27/2025	05/18/2025	09/08/2025	03/14/2026	10/28/2026
Number of warrants granted	130,000	50,000	50,000	274,200	229,361	188,000
Share entitlement per warrant	1	1	1	1	1	1
Exercise price (in € per share)	38.45	38.45	29.58	28.01	27.37	18.68
Valuation method used	Black-Scholes	Black-Scholes	Black-Scholes	Black-Scholes	Black-Scholes	Black-Scholes
Grant date share fair value (in € per share)	32.15	28.17	28.17	28.59	22.48	16.42
Expected volatility	59.1%	59.1%	59.1%	60.5%	62.8%	63.1%
Average life of warrant	6.00	5.83	6.00	6.00	6.00	6.00
Discount rate	0.42%	0.94%	0.94%	0.43%	0.04%	0.00%
Expected dividends	0%	0%	0%	0%	0%	0%
Performance conditions	n.a	n.a	n.a	n.a	n.a	n.a
Fair value per warrant (in € per share)	13.95	11.1	13.51	14.24	10.51	7.88

15.5 Detail of Calyxt Inc. stock options

The key terms and conditions related to these options are provided in the table below.

Date of grant	Employees 12/03/2014 (a)	Managers 12/03/2014 (b)	09/08/2015 (c)	04/07/2016 (d)
Vesting period	Graded	Graded	Graded	Graded
Plan expiration date	12/03/2024	12/03/2024	09/08/2025	04/07/2016
Number of options granted	290	650	465	6,850
Share entitlement per options	1	1	1	1
Exercise price (in $ per share)	910	910	5349	879
Valuation method used	Black-Scholes	Black-Scholes	Black-Scholes	Black-Scholes
Grant date share fair value (in $ per share)	910	910	5349	879
Expected volatility	48.0%	48.0%	54.3%	30.0%
Average life of options	6.16	6.04	5.53	5.74
Discount rate	1.74%	1.74%	1.65%	1.41%
Expected dividends	0%	0%	0%	0%
Performance conditions	Trigger event*	Trigger event*	Trigger event*	Trigger event*
Fair value per options (in $ per share)	436	432	2677	273

* The plan pursuant to which Calyxt stock options are issued require the occurrence of an IPO or a "triggering event" as a condition for the exercise of vested stock options and, in some circumstances, as a condition to vesting. If the condition is expected to occur during the service period, then it is a non-market performance condition. A triggering event is designed as any transaction that would result in Cellectis losing control of Calyxt Inc.

(a) the options granted on December 3, 2014, shall vest as follows for employees

- 25% of the total number of shares on April 10, 2015;
- 6.25% of the total number of shares on the last day of each calendar quarter beginning from third quarter of 2015 (or 12.5% of the total number of shares on the last day of each calendar quarter beginning after a triggering event or initial public offering);
- 25% at the date of a triggering event or initial public offering;
- 100% in the event of termination without cause or resignation for good reason in the case of a change of control.

(b) the options granted on December 3, 2014, shall vest as follows for managers and consultants

- 20% of the total number of shares on January 3, 2015;
- 20% of the total number of shares on April 10, 2015;
- 5% of the total number of shares on the last day of each calendar quarter beginning from third quarter of 2015 (or 10% of the total number of shares on the last day of each calendar quarter beginning after a triggering event or initial public offering);
- 25% at the date of a triggering event or initial public offering.
- 100% in the event of termination without cause or resignation for good reason in the case of a change of control.

(c) the options granted on September 8, 2015 shall vest as follows:

- 20% of the total Number of Shares on 8 September 2015;
- 20% of the total Number of Shares on 8 September 2016; and
- 5% of the Total Number of Shares on the last day of each calendar quarter beginning from the fourth quarter of 2016;
- 25% at the date of a triggering event or initial public offering.

The vested portion of such options shall only become exercisable in the event that a triggering event or initial public offering occurs prior to the expiration date, in which case, an additional 25% of the total number of shares shall immediately vest. The total of vested options cannot exceed 100% of the number of options initially granted. A triggering event is designed as any transaction that would result in Cellectis losing control of Calyxt Inc.

(d) the options granted on April 7, 2016 shall vest as follows:

- C-Level; "VP" and Consultants
  - 20% of the total Number of Shares on April 7, 2016;
  - 10% of the total Number of Shares on April 7, 2017;
  - 5% of the total Number of Shares on the last day of each calendar quarter beginning from the second quarter 2017;
  - 25% of additional vesting in case of triggering event or initial public offering; and
  - 100% in the event of termination without cause or resignation for good reason in the case of a change of control.
- Heads of department and Analysts
  - 20% of the total Number of Shares on April 7, 2017;
  - 10% of the total Number of Shares on April 7, 2018;
  - 5% of the total Number of Shares on the last day of each calendar quarter beginning from the second quarter 2018; and
  - 25% of additional vesting in case of triggering event or initial public offering.

Note 16. Earnings per share

Accounting policy

Basic earnings per share are calculated by dividing profit attributable to our ordinary shareholders by the weighted average number of ordinary shares outstanding during the period, adjusted to take into account the impact of treasury shares.

Diluted earnings per share is calculated by adjusting profit attributable to ordinary shareholders and the weighted average number of ordinary shares outstanding, for the effects of all potentially dilutive ordinary shares (stock-options, free shares, share warrants, employee warrants).

Detail of earnings per share

	For the year ended December 31,		
	2014	2015	2016
Net profit (loss) attributable to shareholders of Cellectis (€ in thousands)	20	(20,544)	(60,776)
Adjusted weighted average number of outstanding shares	26,071,709	34,149,908	35,289,932
Adjusted weighted average number of outstanding shares, net of effects of dilutive potential ordinary shares	26,192,652	34,522,910	35,811,772
Basic / Diluted earnings per share (€ / share)			
Basic earnings from continuing operations per share (€ /share)	0.11	(0.60)	(1.72)
Basic earnings from discontinued operations per share (€ /share)	(0.11)	—	—
Diluted earnings from continuing operations per share (€ /share)	0.11	(0.60)	(1.72)
Diluted earnings from discontinued operations per share (€ /share)	(0.11)	—	—

Note 17. Provisions

Accounting policy

A provision is recognized if, as a result of a past event, we have a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation.

The amount recognized as a provision is the best estimate of the expenditure required to settle the present obligation at the reporting date.

Provisions for retirement and other benefits

Our defined benefit obligations, and their cost, are determined using the projected unit credit method.

The method consists in measuring the obligation based on a projected end-of-career salary and vested rights at the measurement date, according to the provisions of the collective bargaining agreement, corporate agreements and applicable law.

Actuarial assumptions used to determine the benefit obligations are specific to each country and each benefit plan. The discount rate used is the yield at the reporting date on AA credit-rated bonds with maturity dates that approximate the expected payments for our obligations.

Actuarial gains or losses are recognized in the statement of comprehensive loss for the year in which they occur.

Other long-term employee benefits

Our net obligation for long-term employee benefits other than retirement plans is equal to the value of employees' future benefits vested in exchange for services rendered in the current and prior periods. The benefits are discounted and the fair value of any plan assets is deducted.

The obligation is measured using the projected unit credit method. The discount rate is the same as the one used for the provisions for retirement and other benefits. Actuarial gains or losses are recognized in profit or loss for the year in which they occur.

Termination benefits

Termination benefits are recognized as a liability and expense at the earlier of the following dates:

- When the entity can no longer withdraw the offer of those benefits; and

- When the entity recognizes costs for a restructuring that is within the scope of IAS 37 Provisions and involves the payment of termination benefits.

Details of provisions

	1/1/2016	Additions	Amounts used during the period	Reversals	OCI	12/31/2016
			€ in thousands			
Pension	437	67	—	—	27	532
Employee litigation and severance	699	249	(579)	(254)	—	115
Commercial litigation	223	338	—	(117)	—	444
Redundancy plan	32	—	(16)	(11)	—	5
Total	**1,391**	**654**	**(594)**	**(382)**	**27**	**1,096**
Non-current provisions	437	67	—	—	27	532
Current provisions	953	587	(594)	(382)	—	563

During the year ended December 31, 2016 we recorded (i) provisions for commercial litigation that amounted to €338 thousand, (ii) provisions for employees' severance expenses for €173 thousand and (iii) provisions for personnel litigation for €75 thousand. Amounts used during the year ended December 31, 2016 mainly consist of personnel related payments. The reversals mainly relate to ordinary course litigation relating to both personnel matters and commercial litigations.

Commitments for compensation payable to employees upon their retirement

France

In France, pension funds are generally financed by employer and employee contributions and are accounted for as defined contribution plans, with the employer contributions recognized as expense as incurred. There are no actuarial liabilities in connection with these plans. Expenses recorded in the years ended December 31, 2014, 2015 and 2016 amounted to €0.6 million, €0.7 million and €0.7 million, respectively.

French law also requires payment of a lump sum retirement indemnity to employees based on years of service and annual compensation at retirement. Benefits do not vest prior to retirement. We are paying this defined benefit plan. It is calculated as the present value of estimated future benefits to be paid, applying the projected unit credit method whereby each period of service is seen as giving rise to an additional unit of benefit entitlement, each unit being measured separately to build up the final.

As part of the estimation of the retirement indemnity to employee, the following assumptions were used for all categories of employees:

	2015	2016
% social security contributions	45.00%	45.00%
Salary increases	2.00%	2.00%
Discount rate	2.00%	1.75%
Terms of retirement	voluntary retirement	
Retirement age	65 years old	65 years old

The discount rates are based on the market yield at the end of the reporting period on high quality corporate bonds.

The following table shows reconciliation from the opening balances to the closing balances for net defined benefit liability and its components.

	€ in thousands
As of January 1, 2014	**(437)**
Current service cost	(71)
Interest cost	(11)
Actuarial gains and losses	121
As of December 31, 2014	**(398)**
Current service cost	(49)
Interest cost	(6)
Actuarial gains and losses	(14)
Reclassification/CTA	29
As of December 31, 2015	**(437)**
Current service cost	(59)
Interest cost	(9)
Actuarial gains and losses	(27)
As of December 31, 2016	**(532)**

United States of America

There is no defined benefit plan for Cellectis S.A.'s subsidiaries located in the United States.

Note 18. Commitments

Accounting policy

The commitment amounts are associated with contracts that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum or variable price provisions, and the approximate timing of the actions under the contracts. They do not include obligations under agreements that we can cancel without a significant penalty.

Details of commitments

As of December 31, 2016	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
			€ in thousands		
Facility lease agreements	15,069	2,867	5,524	3,484	3,194
License agreements	19,493	1,172	2,345	2,345	13,631
Manufacturing agreements	13,652	11,255	2,397	—	—
Total contractual obligations	**48,214**	**15,294**	**10,266**	**5,829**	**16,825**

Obligations under the terms of the facility lease agreements

Facility lease agreements along with the letters of credit provided to the landlords of our facilities in New York and in New Brighton are off balance sheets commitments. Obligations under the terms of license agreements

Obligations under the terms of license agreements

We have entered into various license agreements with third parties that subject us to certain fixed license fees, as well as fees based on future events, such as research and sales milestones.

We have collaboration agreements whereby we are obligated to pay royalties and milestones based on future events that are uncertain and therefore they are not included in the table above.

Obligations under the terms of manufacturing agreements

We have manufacturing agreements whereby we are obligated to pay services rendered in the two years regarding our products UCART 123 and UCART CS1.

Note 19. Related parties

Key management personnel remuneration

Key management personnel include members of the Board of Directors and the CODM as of December 31, 2016 as described in Note 3.6.

Short-term employee benefits paid to key management personnel totaled to €1.3 million in the fiscal year 2014, to €2.0 million in the fiscal year 2015 and to €2.2 million in the fiscal year 2016.

On September 4, 2014, the Board of Directors adopted a change of control plan which applies to the members of the CODM. This plan defines the conditions under which a severance package will be paid after a change of control of our company. Key management personnel employment agreements include a termination indemnity or additional post-employment compensation.

Key management personnel received an aggregate of 2,623,686 securities in share-based remuneration (free shares, warrants and stock options) over the year ended December 31, 2016. The associated non-cash stock-based compensation expense of €7.6 million was recognized for 2016.

Other transactions with related parties

Mr. Godard, a member of the Board of Directors, entered into two service agreements with us and provided consultancy services in the area of (i) global development strategy and (ii) specific development of agricultural biotechnology activities. Compensation paid for those services in the years ended December 31, 2014, 2015 and 2016 amounted to €32 thousand, €35 thousand and €33 thousand respectively. No balances were outstanding at the end of each fiscal year. As of December 31, 2016, Mr. Godard held 180,175 non-employee warrants that could be exercised to obtain 50,000 shares at a strike price of €38.45, 50,000 shares at a strike price of €28.01 for 50,000 warrants, 40,175 shares at a strike price of €27.37 for 40,175 warrants and 40,000 shares at a strike price of €18.68 for 40,000 warrants

Bpifrance is a shareholder of Cellectis S.A. and "Caisse des Dépôts et Consignations" ("CDC") was a shareholder of Cellectis Bioresearch. OSEO, which is the former name of Bpifrance and is indirectly related to CDC, granted conditional advances and subsidies to us, as described in Note 11.3. On May 18, 2015, we signed with the "Caisse des Dépôts et Consignations" a contract for our repurchase of its participation in Cellectis Bioresearch., which represented 25% of the total shares thereof for an amount of €3.5 million. At the time of the merger with Cellectis S.A., Cellectis S.A. was the sole stockholder of Cellectis Bioresearch.

Note 20. Subsequent events

On February 6, 2017, Cellectis has received an Investigational New Drug (IND) approval from the U.S. Food and Drug Administration (FDA) to conduct Phase I clinical trials with UCART123, the Company's most advanced, wholly-controlled TALEN® gene-edited product candidate, in patients with acute myeloid leukemia (AML) and blastic plasmacytoid dendritic cell neoplasm (BPDCN). This marks the first allogeneic, "off-the-shelf" gene-edited CAR T-cell product candidate that the FDA has approved for clinical trials. Cellectis intends to initiate Phase I trials in the first half of 2017.

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SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

CELLECTIS S.A.

/s/ André Choulika

By: André Choulika
Title: Chairman and Chief Executive Officer

Date: March 23, 2017

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Exhibit Index

Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
1.1#	By-laws (*status*) of the registrant (English translation)	F-1	333-202205	3.1	March 10, 2015
2.1#	Form of Deposit Agreement	F-1	333-202205	4.1	March 10, 2015
2.2#	Form of American Depositary Receipt (included in Exhibit 2.1)	F-1	333-202205	Included in 4.1	March 10, 2015
4.1#*	Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated June 19, 2000 (English translation)	F-1	333-202205	10.1	March 12, 2015
4.1.1#	Amendment No. 1 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated December 20, 2002 (English translation)	F-1	333-202205	10.1.1	March 12, 2015
4.1.2#*	Amendment No. 2 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.1.2	March 12, 2015
4.1.3#	Amendment No. 3 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated February 26, 2008	F-1	333-202205	10.1.3	March 12, 2015
4.1.4#	Amendment No. 4 to Patent License Agreement #C-00061901 between L'Institut Pasteur and Cellectis S.A., dated April 11, 2013 (English translation)	F-1	333-202205	10.1.4	March 12, 2015
4.2#*	Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated October 19, 2000 (English translation)	F-1	333-202205	10.2	March 12, 2015
4.2.1#*	Amendment No. 1 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.2.1	March 12, 2015
4.2.2#*	Amendment No. 2 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated June 24, 2004 (English translation)	F-1	333-202205	10.2.2	March 12, 2015
4.2.3#*	Amendment No. 3 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated August 24, 2005 (English translation)	F-1	333-202205	10.2.3	March 12, 2015
4.2.4#*	Amendment No. 4 to Patent License Agreement #C-00061906 between L'Institut Pasteur and Cellectis S.A., dated December 27, 2007 (English translation)	F-1	333-202205	10.2.4	March 12, 2015
4.3#*	Patent License Agreement #C-00061905 between L'Institut Pasteur and Cellectis S.A., dated June 19, 2000 (English translation)	F-1	333-202205	10.3	March 12, 2015
4.3.1#*	Amendment No. 1 to Patent License Agreement #C-00061905 between L'Institut Pasteur and Cellectis S.A., dated September 8, 2003 (English translation)	F-1	333-202205	10.3.1	March 12, 2015
4.4#*	Research and Collaboration Agreement between Pfizer Inc. and Cellectis S.A., dated June 17, 2014	F-1	333-202205	10.4	March 12, 2015
4.5#*	Research, Product Development, Option, License and Commercialization Agreement, among Les Laboratoires Servier SAS, Institut de Recherches Internationales Servier SAS and Cellectis S.A., dated February 17, 2014	F-1	333-202205	10.5	March 12, 2015

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Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
4.5.1#*	Amendment to the Product Development, Option, License and Commercialization Agreement, among Les Laboratoires Servier SAS, Institut de Recherches Internationales Servier SAS and Cellectis S.A., dated November 18, 2015	20-F	001-36891	4.5.1	March 21, 2015
4.6#*	Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated January 10, 2011	F-1	333-202205	10.6	March 12, 2015
4.6.1#*	First Amendment to the Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated May 24, 2012	F-1	333-202205	10.6.1	March 12, 2015
4.6.2#*	Second Amendment to the Exclusive Patent License Agreement between Regents of the University of Minnesota and Cellectis S.A., dated April 1, 2014	F-1	333-202205	10.6.2	March 12, 2015
4.7#*	Patent & Technology License Agreement between Ohio State Innovation Foundation and Cellectis S.A., dated October 23, 2014	F-1	333-202205	10.7	March 12, 2015
4.8#	Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated December 20, 2012 (English translation)	F-1	333-202205	10.8	March 10, 2015
4.8.1#	First Amendment to Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated June 6, 2013 (English translation)	F-1	333-202205	10.8.1	March 10, 2015
4.8.2#	Second Amendment to Warrants Issue Agreement between Cellectis S.A. and Kepler Capital Markets SA, dated October 7, 2013 (English translation)	F-1	333-202205	10.8.2	March 10, 2015
4.9#	Warrant Agreement between Cellectis S.A. and Trout Capital LLC, dated March 24, 2014	F-1	333-202205	10.9	March 10, 2015
4.10†#	Change of Control Plan, effective as of September 4, 2014 (English translation)	F-1	333-202205	10.10	March 10, 2015
4.11†#	Summary of BSA Plan	F-1	333-202205	10.11	March 10, 2015
4.12†#	Summary of BSPCE Plan	F-1	333-202205	10.12	March 10, 2015
4.13†#	2012 Free Share Plan	F-1	333-202205	10.13	March 10, 2015
4.14†#	2013 Free Share Plan	F-1	333-202205	10.14	March 10, 2015
4.15†#	2014 Free Share Plan	F-1	333-202205	10.15	March 10, 2015
4.16†	2015 Free Share Plan	20-F	001-36891	4.16	March 10, 2015
4.17†	2016 Free Share Plan	20-F	001-36891	4.17	March 10, 2015
4.18†	2016 Stock Option Plan	S-8	333-214884	99.1	December 2, 2016
8.1	List of subsidiaries of the registrant				Filed Herewith
12.1	Certificate of Principal Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed Herewith
12.2	Certification by the Principal Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed Herewith

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Exhibit Number	Description of Exhibit	Schedule/ Form	File Number	Exhibit	File Date
13.1	Certification by the Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Filed Herewith
13.2	Certification by the Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Filed Herewith
15.1	Consent of Ernst & Young et Autres				Filed Herewith

† Indicates a management contract or any compensatory plan, contract or arrangement.
# Indicates a document previously filed with the Commission.
* Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment.

Exhibit 8.1

Subsidiaries of Cellectis S.A.

Name of Subsidiary	State or Other Jurisdiction of Incorporation
Cellectis, Inc.	Delaware
Calyxt, Inc.	Delaware

Exhibit 12.1

Certification by the Principal Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, André Choulika, certify that:

1. I have reviewed this annual report on Form 20-F of Cellectis S.A.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and

5. The Company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: March 23, 2017

/s/ André Choulika

Name: André Choulika
Title: Chief Executive Officer *(Principal Executive Officer)*

Exhibit 12.2

Certification by the Principal Financial Officer pursuant to
Securities Exchange Act Rules 13a-14(a) and 15d-14(a)
as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Eric Dutang, certify that:

1. I have reviewed this annual report on Form 20-F of Cellectis S.A.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and

5. The Company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: March 23, 2017

/s/ Eric Dutang
Name: Eric Dutang
Title: Chief Financial Officer *(Principal Financial Officer)*

EXHIBIT 13.1

Certification by the Principal Executive Officer pursuant to
18 U.S.C. Section 1350, as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of Cellectis S.A. (the "Company") on Form 20-F for the fiscal year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, André Choulika, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 23, 2017

/s/ André Choulika
Name: André Choulika
Title: Chief Executive Officer *(Principal Executive Officer)*

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 13.2

Certification by the Principal Financial Officer pursuant to
18 U.S.C. Section 1350, as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Annual Report of Cellectis S.A. (the "Company") on Form 20-F for the fiscal year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Eric Dutang, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 23, 2017

/s/ Eric Dutang
Name: Eric Dutang
Title: Chief Financial Officer (*Principal Financial Officer*)

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 15.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-204205) pertaining to the 2015 Stock Option Plan and the 2015 Free Share Plan of Cellectis S.A.;

(2) Registration Statement (Form S-8 No 333-214884) pertaining to the 2016 Stock Option Plan of Cellectis S.A.; and

(3) Registration Statement (Form F-3 No. 333-211202) of Cellectis S.A.;

of our reports dated March 22, 2017, with respect to the consolidated financial statements of Cellectis S.A. and the effectiveness of internal control over financial reporting of Cellectis S.A., included in this annual report (Form 20-F) of Cellectis S.A. for the year ended December 31, 2016.

/s/ ERNST & YOUNG et Autres

Paris La Défense, France

March 22, 2017