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As filed with the Securities and Exchange Commission on May 15, 2018

Registration No. 333-

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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CALYXT, INC.
(Exact name of Registrant as specified in its charter)

Not Applicable
(Translation of Registrant's name into English)

Delaware	**2870**	**27-1967997**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

600 County Road D West, Suite 8
New Brighton, MN 55112
(651) 683-2807
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Calyxt, Inc.
600 County Road D West, Suite 8
New Brighton, MN 55112
(651) 683-2807
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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450 Lexington Avenue
New York, NY 10017
(212) 450-4000

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	☐
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has not elected to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title Of Each Class Of Securities To Be Registered	**Amount to be Registered(1)**	**Proposed Maximum Offering Price Per Share(2)**	**Proposed Maximum Offering Price(1)(2)**	**Amount of Registration Fee(2)**
Common stock, par value $0.0001 per share	3,507,500	$15.94	$55,909,550	$6,961

(1) Includes 457,500 shares of common stock that underwriters have the option to purchase.
(2) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(c) under the Securities Act of 1933, as amended, and is based on the average of the high and low sales price of the Registrant's common stock as reported on the Nasdaq Global Market on May 9, 2018.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. We may not offer these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 15, 2018

PRELIMINARY PROSPECTUS

Calyxt, Inc.

3,050,000 Shares of Common Stock

We are offering 3,050,000 shares of our common stock.

Our common stock is listed on the NASDAQ Global Market (the "NASDAQ") under the symbol "CLXT." On May 14, 2018, the last reported sale price of our common stock on the NASDAQ was $17.09 per share.

We are an "emerging growth company" as that term is defined in the Jumpstart Our Business Startups Act of 2012 and, as such, are subject to certain reduced public company reporting requirements. See "Summary—Implications of Being an Emerging Growth Company."

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 13.

	Per Share	Total
Public offering price	$	$
Underwriting discounts	$	$
Proceeds to us before expenses	$	$

Cellectis S.A., which, as of March 31, 2018, owned 79.1% of our outstanding common stock, has indicated to us that it may choose to purchase additional shares of common stock in this offering. The shares, if any, would be purchased directly from Calyxt and not through the underwriters and there would be no payment of any underwriting discount.

The underwriters have the option to purchase up to 457,500 shares of additional common stock from us at the public offering price less the underwriting discount within 30 days from the date of this prospectus.

The underwriters expect to deliver the shares of common stock to purchasers on or about , 2018 through the book-entry facilities of The Depository Trust Company.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

Citigroup **Goldman Sachs & Co. LLC** **Jefferies**

Wells Fargo Securities

BMO Capital Markets

The date of this prospectus is , 2018

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We, Cellectis and the underwriters have not authorized anyone to provide any information or to make any representations other than those contained in, or incorporated by reference into, this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We, Cellectis and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide you. We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in, or incorporated by reference into, this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of the shares of common stock.

For investors outside the United States: Neither we nor any of the underwriters have taken any action that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

When we use the terms “we,” “us,” the “Company,” or “our” in this prospectus, unless the context otherwise requires, we are referring to Calyxt, Inc. When we use the term “Cellectis” we are referring to Cellectis S.A., our parent company.

We have made rounding adjustments to some of the figures included in this prospectus. Accordingly, numerical figures shown as totals in some tables may not be an arithmetic aggregation of the figures that precede them.

Currency amounts in this prospectus are stated in U.S. dollars, unless otherwise indicated.

This prospectus includes, and incorporates by reference, industry and market data that we obtained from periodic industry publications, third-party studies and surveys, filings of public companies in our industry and internal company surveys. These sources include government and industry sources. Industry publications and surveys generally state that the information contained therein has been obtained from sources believed to be reliable. Although we believe the industry and market data to be reliable as of its date, this information could prove to be inaccurate. Industry and market data could be wrong because of the method by which sources obtained their data and because information cannot always be verified with complete certainty due to the limits on the availability and reliability of raw data, the voluntary nature of the data gathering process and other limitations and uncertainties. We do not know all of the assumptions regarding general economic conditions or growth that were used in preparing the forecasts from the sources relied upon or cited herein. Assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in, and incorporated by reference into, the section entitled "Risk Factors." These and other factors could cause future performance to differ materially from our assumptions and estimates. See "Special Note Regarding Forward-Looking Statements and Industry Data."

The name and trademark, "Cellectis®" and "TALEN®", and other trademarks, trade names and service marks of Cellectis appearing in, or incorporated by reference into, this prospectus are the property of Cellectis. We own the name and trademark, "Calyxt™", and own or license other trademarks, trade names and service marks of Calyxt appearing in, or incorporated by reference into, this prospectus. This prospectus also contains additional trade names, trademarks and service marks belonging to other companies. We do not intend our use or display of other parties' trademarks, trade names or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties.

SUMMARY

This summary highlights information included elsewhere and incorporated by reference in this prospectus and does not contain all of the information you should consider in making an investment decision. You should read this entire prospectus carefully, including the sections entitled "Risk Factors," "Special Note Regarding Forward-Looking Statements and Industry Data" and "Selected Historical Financial Information" and the information in our filings with the Securities and Exchange Commission, or the SEC, incorporated by reference into this prospectus before making an investment decision regarding our common stock.

Our Company

Overview

We are a consumer-centric, food- and agriculture-focused company. We are pioneering a paradigm shift to deliver healthier food ingredients, such as healthier oils and high fiber wheat, for consumers and crop traits that benefit the environment and reduce pesticide applications, such as disease tolerance, for farmers. We develop non-transgenic crops leveraging processes that occur in nature by combining our leading gene-editing technology and technical expertise with our innovative commercial strategy. While the traits that enable these characteristics may occur naturally and randomly through evolution—or under a controlled environment through traditional agricultural technologies—those processes are imprecise and take many years, if not decades. Our technology enables us to precisely and specifically edit a plant genome to elicit the desired traits and characteristics, resulting in a final product that has no foreign DNA. We believe the precision, specificity, cost effectiveness and development speed of our gene-editing technologies will enable us to provide meaningful disruption to the food and agriculture industries. Food-related issues, including obesity and diabetes, are some of the most prevalent health issues today and continue to grow rapidly. As awareness of diet-related health issues grows, consumers have emphasized a healthier lifestyle and a desire for nutritionally rich foods that are better tasting, less processed and more convenient. This trend is leading to an increase in the demand for higher valued, premium segments of the food industry, such as higher fiber, reduced gluten and reduced fat products. As a result of these trends, food companies are looking for specialty ingredients and solutions that can help them satisfy their customers' evolving needs and drive growth in market share and new value-added products.

Our first product candidate, which we expect to be commercialized by the end of 2018, is a high oleic soybean designed to produce a healthier oil that has increased heat stability with zero trans fats. Among our other product candidates are high fiber wheat and herbicide tolerant wheat. We are developing a high fiber wheat to create flour with up to three times more dietary fiber than standard white flour while maintaining the same flavor and convenience of use. Our high fiber wheat may provide benefits associated with a high fiber diet, including reduced risk of coronary heart disease. Our herbicide tolerant wheat is designed to provide farmers with better weed control options to increase yields. We believe each of these three product candidates addresses a multibillion dollar market opportunity.

While food companies are focused on health and nutrition trends, we believe the legacy agriculture companies have overlooked society's food-related issues and are not properly equipped with a business model to address health-driven consumer food trends. These legacy agriculture companies have historically focused on increasing yields and volume—to address population growth—while increasing profit margins and market share by reducing input costs. They have been burdened by high research and development costs and a high degree of commoditization in their deep, farmer-focused supply chains.

We believe that our proprietary gene-editing technologies and innovative commercial strategy will allow us to bridge the divide between evolving consumer preferences and the historical approach by the large legacy companies in the agriculture supply chain.

Using our proprietary technologies and expertise, we edit the genome of food crops by using our "molecular scissors" to precisely cut DNA in a single plant cell, use the plant's natural repair machinery to make our desired edit and finally regenerate the single cell into a full plant. We believe we are able to develop targeted traits—some of which would be nearly impossible to develop using traditional trait-development methods—quicker, more efficiently and more cost effectively than traditional trait-development methods. Our technology positions us to assess the probability of success early on in the research and development process, potentially eliminating expensive late stage failures and allowing for a larger breadth of products to be developed. We have a strong track record with respect to our technologies and expertise as we have successfully edited more than 20 unique genes in 6 plant species since our inception in 2010.

Our commercial strategy is centered on two core elements: developing healthier specialty food ingredients to enable the food industry to address evolving consumer trends and developing agriculturally advantageous traits with potential to protect the environment, such as potential to reduce pesticide applications, for farmers. This will involve developing and leveraging our supply chain to effectively bring our consumer- and environmentally conscious farmer-centric products to the marketplace. For our consumer-centric products we intend to repurpose and leverage existing supply chain capacity by contracting, tolling or partnering with players in the existing supply chain, such as seed production companies, farmers, crushers, refiners or millers, which we expect will allow us to apply our resources to maximizing innovation and product development while minimizing our capital expenditures and overhead. For our farmer-centric products, we intend to broadly out-license our products to the seed industry.

Our Competitive Strengths

We believe that we are strategically well-positioned to develop high-value and innovative products. Our competitive strengths include:

- ***Proprietary technologies creating a powerful platform to design and develop new products.*** Since our founding, we have been at the forefront of the research, development and application of plant-based gene-editing technologies. Our capabilities enable us to precisely edit specific genes from a target food crop to improve the nutritional composition or provide agricultural and environmental benefits to farmers. Three examples of our technological innovation include:
  - *High Oleic Soybean*: We deactivated key genes associated with fatty acid biosynthesis to achieve a healthier soybean oil.
  - *High Fiber Wheat*: We simultaneously deactivated all six copies of a gene within a single wheat plant with the purpose of increasing fiber content.
  - *Disease Resistant Wheat*: We have achieved Powdery Mildew disease resistance in two wheat varieties, one spring and one winter. We were able to deactivate the same gene six times to achieve disease resistance in both varieties. We believe we can develop crop varieties that will be tolerant to certain diseases by identifying and making subtle edits, which we believe will be sufficient to confer disease tolerance. We expect to be able to replicate this process to combine multiple disease targets in wheat.
- ***Innovative portfolio of product candidates with an accelerated path to market.*** We are currently developing a diversified portfolio spanning across five core crops—soybean, wheat, canola, potato and alfalfa—and a multitude of product candidates. These include innovative consumer-centric product candidates like our high-fiber wheat that is designed to produce flour with up to three times the fiber content of standard white flour, as well as innovative, farmer-centric solutions like disease resistant wheat and products with valuable supply chain benefits like cold storable potatoes that are designed to store longer and produce much less acrylamide in the frying process, a human health concern that has been linked to cancer. We believe our portfolio of product candidates, coupled with our ability to quickly develop future product candidates, affords us the opportunity to disrupt the food industry.

- ***Significant barriers to entry through our first-mover advantage and strong intellectual property.*** We command a first-mover advantage in the editing of genes in plants. As a pioneer in gene-editing technologies, we are building on more than two decades of hands-on experience and process optimization which we believe cannot be easily replicated by competitors. Our proprietary technologies and product candidates benefit from the licensing of a portfolio of approximately 84 issued patents and 179 pending patent applications.
- ***Faster, cheaper and innovative product development process focused on end user needs.*** Genetic modification has traditionally taken an average of approximately 13 years and costs more than $130 million to develop a commercially viable product. By contrast, a key advantage of our gene-editing technology platform is that we believe we can develop products from concept to commercialization in three to six years and at a fraction of the cost. For example, we created our high oleic soybean product candidate by generating fewer than 20 independent plants that were edited with TALEN. This contrasts with traditional genetic modification methods which we believe require thousands of plants to achieve the same result. We developed our high oleic soybean from concept to field in under four years and expect to commercialize this product by the end of 2018. We believe we will continue to be able to react quickly to consumer and farmer needs that we identify.
- ***Supply chain flexibility enabling us to capture significant downstream value.*** We plan to develop consumer traits and leverage existing supply chain capacity and our existing relationships to provide differentiated specialty ingredients to food companies. By doing so, we believe that we will be able to capture significant value as our innovative products move from “field to fork.” Our supply chain is flexible, enabling us to layer on new products to our existing ones and capture additional value. By stacking additional characteristics on the same seeds, we believe we can create additional value without necessarily increasing acreage, volumes of grain produced or the amount of oil commercialized, but rather by aiming to increase the value of our products on a per unit basis. For example, we believe this value creation could be implemented in our high oleic soybean product candidate if we were to stack a trait that improves the protein composition of the meal, a trait that further improves the soybean oil fatty acid profile or a farmer-focused trait such as disease resistance and other agricultural productivity traits.
- ***A world-class management team with deep industry expertise.*** Our executive team has more than 120 years of collective experience in the agriculture and gene-editing fields. This includes over 95 years of collective experience in agricultural supply chain, product development and commercial operations, during which several members of our executive team have managed billions of dollars of revenue and cost at large multinational corporations. Several members of our executive team previously worked at well-known technology and agri-business companies, such as Monsanto, Syngenta, Stine Seed Company and Cargill. As pioneers in plant-based gene editing, members of our management team invented TALEN, one of the premier gene-editing tools. Dr. Daniel Voytas, our Chief Science Officer, is a Professor of Genetics, Cell Biology and Development at the University of Minnesota and Director of the Beckman Center for Genome Engineering. He is best known for his pioneering work to develop methods for precisely editing DNA sequences in living plant cells.

Our Growth Strategy

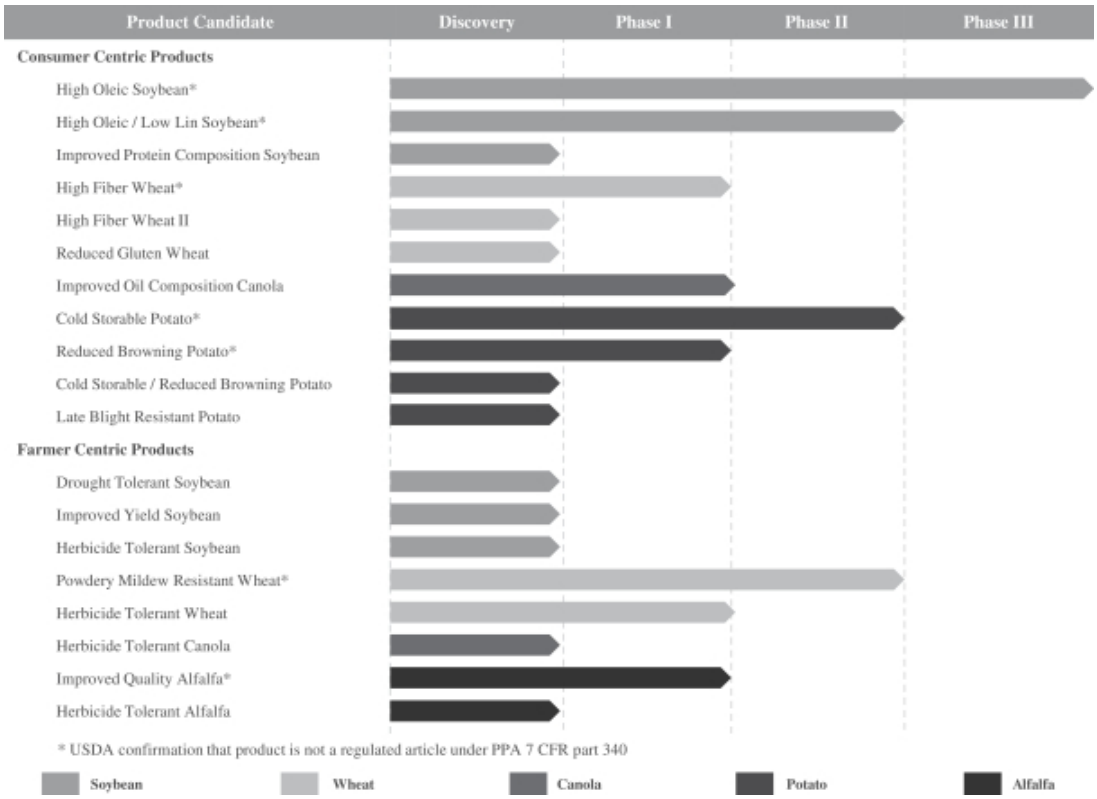
We believe that there are significant opportunities to grow our business both domestically and internationally by executing on the following key elements of our strategy:

- ***Commercialize our current product candidates in North America.*** Our near-term focus is to launch our product candidates in North America where we believe the markets for healthier specialty food ingredients for consumers and unique, plant-trait solutions for farmers are significant and the existing supply chain enables us to accelerate growth.

- ***Identify new opportunities through our consumer- and farmer-centric approaches.*** We intend to continue to elicit desired traits and to include additional crops in our product pipeline. We continuously evaluate the evolving needs of the consumer and the farmer and seek to apply our technologies and expertise to provide better solutions to meet their demands. We also expect to be able create additional opportunities from our existing product candidates once they are commercialized through combining traits, which may allow us to create products with additional benefits without adding significant cost.
- ***Accelerate our R&D productivity with enhanced automation and high throughput capabilities.*** We consistently strive to optimize our product development processes. Through our planned facility expansion, we are combining gene-editing automation with food science capabilities to enable us to rapidly identify new growth opportunities. To facilitate these opportunities, we will soon open our nearly 40,000-square-foot concept-to-fork facility, which will house a test kitchen, state-of-the-art research labs and our headquarters adjacent to our recently completed 11,000+ square-foot greenhouse facility and existing outdoor demonstration plots. We believe that this automation and our high-throughput platform will allow for greater standardization in our processes. We expect this standardization to increase our research and development productivity significantly and add a greater number of projects to our product pipeline.
- ***Expand through R&D agreements and acquisitions.*** We plan to selectively partner, in-license or acquire key enabling technologies and businesses across the value chain. This may include acquiring complementary technologies and intellectual property or fully developed products. In each case, we plan to look for R&D partners and acquisitions that give us a significant presence in the health focused specialty food ingredient markets where we will be able to accelerate the launch and commercialization of our innovative products.
- ***Leverage our North American market presence to globalize our products.*** While we believe the North American market opportunity remains attractive and extensive, in the future we plan to explore the possibility of expanding our business globally. This may involve exporting our products to international markets or establishing new supply chains in other attractive markets.

Our Product Pipeline

We have several products under development including: high oleic soybeans, powdery mildew resistant wheat, cold storable potato, high fiber wheat, reduced browning potato and herbicide tolerant wheat. Our current product candidates are depicted in the figure below:



We have submitted petitions to the Animal and Plant Health Inspection Service, or APHIS, for seven of our product candidates to date: high oleic soybeans, high oleic/low linoleic soybeans, cold storable potatoes, reduced browning potatoes, powdery mildew resistant wheat, improved quality alfalfa and high fiber wheat. As of the date of this prospectus, we have received confirmation from APHIS for all seven product candidates that APHIS does not consider such product candidate to be a “regulated article” under the Plant Protection Act.

We categorize our stages of pre-commercial development from Phase I to Phase III. Prior to entering Phase I, in Discovery, we identify genes of interest. In Phase I, we edit the identified genes of interest, target edits we desire to make, and produce an initial seed that contains the desired edit. Phase II is trait validation, where we perform small-scale and large-scale tests to confirm phenotype and ingredient functionality. In this phase we also perform replicated, multi-location field testing, after confirming that the product is not a regulated article by the USDA. In Phase III, we develop the first commercial-scale pilot production, begin to build out the supply chain and inventory and perform customer testing prior to commercialization.

High Oleic Soybean (Consumer Trait)

Soybean oil has historically been partially hydrogenated to enhance its oxidative stability in order to increase shelf life and improve frying characteristics. This process, however, creates trans-unsaturated fatty acids, or trans fats, which have been demonstrated to raise low-density lipoprotein (LDL) cholesterol levels and lower high-density lipoprotein (HDL), both of which contribute to cardiovascular disease.

We developed a soybean trait that has produced oils with a fatty acid profile that contains 80% oleic acid, 20% less saturated fatty acids compared to commodity soybean oil and zero trans fats. Our high oleic soybean oil enhances oxidative stability more than fivefold when compared to commodity oil and also offers a threefold increase in fry-life. Our high oleic soybean product candidate was created using our TALEN gene-editing technology. We designed TALEN to specifically target two fatty acid desaturase genes (designated *FAD2-1A* and *FAD2-1B*). By key measures, including yield, our high oleic soybean variety performs comparably to its unedited counterpart. Our soybean product candidate is in Phase III of our development process. During the third quarter of 2017, we completed the harvest of our high oleic soybean and produced more high-quality seeds than needed to meet our commercialization target date. We are currently completing our commercialization plan and anticipate commercialization by the end of 2018.

In December 2017, we executed an agreement with Farmer's Business Network, Inc., or FBN, to expand the distribution and grower base of our identity-preserved high oleic soybeans. FBN will distribute our high oleic soybean seeds to growers in its network and register farmers for our program which allows them to enter into contracts for growing our premium products. This relationship will help develop a dedicated, high-quality grower base and bolster our supply chain operations in the upper Midwest.

As of April 5, 2018, we had contracted over 16,000 acres for our high-oleic soybean variety with 75 farmers in the Midwest region of the United States. Over 90% of farmers that planted our high-oleic soybeans in 2017 have renewed their Calyxt high-oleic soybeans contracts this year. In addition, we are engaging with small- to large-food company customers, who are evaluating our high-oleic soybean oil for end-use applications.

High Fiber Wheat (Consumer Trait)

Research has shown that fiber may play a large role in maintaining bowel health, lowering cholesterol, stabilizing blood glucose levels and controlling weight gain. In recent years, the awareness of the health benefits of high fiber diets has increased. This has translated to a strong growth in demand for high fiber food products, with 38% of grocery shoppers now seeking high fiber foods.

We are developing high fiber wheat traits that could be used to produce white flour with up to three times more dietary fiber than standard white flour. We anticipate that by altering the proportion of certain slower digested carbohydrates in the wheat grain, we will increase dietary fiber. We believe our high fiber wheat flour will be incorporated into many food products—from pasta to bread. The product candidate is currently in Phase I of our development process and may launch as early as 2020 - 2021.

Improved Oil Composition Canola (Consumer Trait)

Our improved oil composition canola is our first canola product candidate. The development of this first canola product expands our improved oils franchise, in line with our mission to create healthier specialty ingredients and become a preferred partner of the food industry. In September 2017, we successfully advanced our improved oil composition canola program from discovery stage into Phase I development.

Other Products in Our Development Pipeline

Our extensive product pipeline includes a variety of consumer centric and farmer centric traits for soybean, wheat, canola, alfalfa and potato. We will conduct further development programs to build upon our current

pipeline. In the future, we anticipate expanding our product pipeline to include other food crops. As of March 31, 2018, Calyxt had a total of nine product candidates in Phase I or higher across its five crops, which is reflective of our rapidly advancing product pipeline.

We plan to develop gene-editing automation processes that will enable us to implement a high throughput discovery platform to identify new growth opportunities. This high-throughput platform is intended to allow us to discover more gene traits and make more complex edits, enabling us to drive innovation at a significantly faster rate. We believe all of these steps will enable us to remain at the forefront of food and agriculture innovation.

Recent Developments

In December 2013, we entered into a Research and Commercial License Agreement (the "License Agreement") with a subsidiary of Bayer Aktiengesellschaft ("Bayer"), pursuant to which we granted Bayer a license to certain patents for the research and commercialization of products developed with TALEN® technology. We believe that Bayer has breached the License Agreement and, on March 12, 2018, we filed a complaint in Delaware Chancery Court requesting a declaration that the License Agreement has terminated for material breach and an order of specific performance requiring Bayer to comply with its post-termination obligations.

On May 15, 2018, Bayer agreed to settle the lawsuit that we brought. Under the settlement terms, the parties agreed that the License Agreement is terminated, that Bayer will destroy any technology, related product and confidential information covered by the License Agreement, and that Bayer will permanently abandon patent applications that are based on or include data related to the covered technology. This settlement confirms that Bayer and its subsidiaries have no access to Calyxt technology or intellectual property. The settlement was filed in Delaware Chancery Court on May 15, 2018.

Relationship with Cellectis

Prior to the completion of our initial public offering, we were a wholly owned subsidiary of Cellectis. As of March 31, 2018, Cellectis owned approximately 79.1% of our outstanding common stock. We and Cellectis are party to several agreements that provide a framework for our continuing relationship, as described under "Certain Relationships and Related Party Transactions, and Director Independence—Relationship with Cellectis" in our definitive proxy statement, incorporated by reference herein.

Risk Factors

There are a number of risks that you should understand before making an investment decision regarding this offering. These risks are discussed more fully in, and incorporated by reference into, the section entitled "Risk Factors" following this prospectus summary. These risks include, but are not limited to:

- Our limited operating history;
- Our lack of commercial products and our inexperience with the commercialization of product candidates;
- Our incurrence of significant losses since our inception and likelihood that we will continue to incur significant losses for the foreseeable future;
- Our reliance on contractual counterparties;
- Significant competition from competitors with substantially greater resources than us;
- Public perceptions of genetically engineered products and ethical, legal, environment, health and social concerns;
- Uncertain and evolving regulatory requirements within and outside of the United States;

- Government policies and regulations affecting the agricultural sector and related industries;
- Commodity prices and other market risks facing the agricultural sector;
- Our product development efforts use complex integrated technology platforms and require substantial time and resources;
- Our success in obtaining or maintaining necessary rights to product components and processes for our development pipeline through acquisitions and in-licenses;
- Our reliance on gene-editing technologies that may become obsolete in the future;
- Our need to raise additional funding and the availability of additional capital or capital on acceptable terms;
- Our reliance on third parties in connection with our field trials and research services;
- The recognition of value in our products by farmers, and the ability of farmers and food processors to work effectively with our crops;
- Our ability to produce high-quality plants and seeds cost-effectively on a large scale;
- Our ability to accurately forecast demand for our products;
- The needs of food manufacturers and the recognition of shifting consumer preferences;
- Adverse natural conditions and the highly seasonal and weather-sensitive nature of our business;
- Our exposure to product liability claims;
- The geographic concentration of our business activities;
- Our ability to use net operating losses to offset future taxable income;
- The adequacy of our patents and patent applications;
- Our licensing of intellectual property from Cellectis S.A. and reliance on Cellectis S.A. to prosecute, maintain, defend or enforce such intellectual property;
- Uncertainty relating to our patent positions that involve complex scientific, legal and factual analysis;
- The limited lifespan of our patents and limitations in intellectual property protection in some countries outside the United States;
- Developments in patent and other intellectual property law;
- Our ability to identify relevant third party patents and to interpret the relevance, scope and expiration of third party patents;
- Potential assertions of infringement, misappropriation or other violations of intellectual property rights, including licensing agreements;
- Loss or damage to our germplasm libraries;
- Our ability to retain and attract senior management and key employees;
- Our independent registered public accounting firm has identified a material weakness relating to our lack of a control in place to review forward purchase derivative contracts entered into by us, and this will require remediation;
- Our relationship with Cellectis S.A., our controlling stockholder, and its ability to control the direction of our business;

- Our being a "controlled company" and, as a result, qualifying for, and intending to rely on, exemptions from certain corporate governance requirements; and
- Our status as an emerging growth company.

Corporate Information

We were incorporated in Delaware on January 8, 2010. The address of our principal executive offices is currently 600 County Road D West, Suite 8, New Brighton, MN 55112. Our website is currently www.calyxt.com. Information on, or accessible through, our website is not part of this prospectus.

Implications of Being an Emerging Growth Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we have elected to take advantage of certain reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act;
- only two years of audited financial statements are required in addition to any required interim financial statements, and correspondingly reduced disclosure in management's discussion and analysis of financial condition and results of operations; and
- (i) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and (ii) exemptions from the requirements of holding a non-binding advisory vote on executive compensation, including golden parachute compensation.

We may take advantage of these provisions for up to five years from our initial public offering or until such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company upon the earliest to occur of (1) the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; (2) the date we qualify as a "large accelerated filer," with at least $700 million of equity securities; (3) the issuance, in any three-year period, by us of more than $1.0 billion in non-convertible debt securities held by non-affiliates; and (4) December 31, 2022.

In addition, Section 107 of the JOBS Act also provides that an emerging growth company can use the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended (the "Securities Act") for complying with new or revised accounting standards. This permits an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies.

We have elected to take advantage of the exemptions discussed above, including the extended transition period for complying with new or revised accounting standards. Accordingly, the information contained herein, and the documents incorporated herein by reference, may be different than the information you receive from other public companies.

THE OFFERING

Common stock offered by us	3,050,000 shares of common stock
Total shares of common stock to be outstanding after this offering	31,004,781 shares (31,462,281 if the underwriters exercise their option in full)
Underwriters' option to purchase additional shares	The underwriters have a 30-day option from the date of this prospectus to purchase up to 457,500 of additional common stock from us as described under the heading "Underwriting."
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $48.3 million, or $55.6 million if the underwriters exercise in full their option to purchase additional shares of our common stock, in each case after deducting estimated underwriting discounts and commissions and estimated offering expenses. We intend to use the net proceeds of this offering to fund research and development, to build out commercial capabilities and for working capital and general corporate purposes, as described in greater detail under "Use of Proceeds."
Voting rights	Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholder. See "Description of Capital Stock—Common Stock" for a description of the material terms of our common stock.
Risk factors	You should carefully read "Risk Factors" beginning on page 13 and other information included in, and incorporated by reference into, this prospectus for a discussion of factors that you should consider before deciding to invest in shares of our common stock.
NASDAQ symbol	Our shares of common stock are listed on the NASDAQ under the symbol "CLXT."

The number of shares of our common stock outstanding after this offering is based on 27,954,781 shares outstanding as of March 31, 2018 and excludes:

- 1,619,117 shares of common stock issuable upon the exercise of outstanding stock options under the Calyxt, Inc. Equity Incentive Plan (the "Existing Plan") and 2,000,389 shares of common stock issuable upon the exercise of outstanding stock options under the equity compensation plan that we adopted on June 14, 2017 in connection with our initial public offering (the "Omnibus Plan") at a blended weighted-average exercise price of $9.60 per share;
- 1,297,658 shares of common stock deliverable upon the vesting and settlement of outstanding restricted stock units under the Omnibus Plan;

- 152,477 shares of common stock reserved for future grants or for sale under the Existing Plan; and
- 2,762,753 shares of common stock reserved for future grants or for sale under the Omnibus Plan.

Unless we specifically state otherwise or the context otherwise requires, the information in this prospectus (i) reflects the 100-for-1 stock split completed on June 14, 2017 as described in note 1 to our unaudited condensed financial statements included elsewhere in this prospectus, (ii) reflects the 2.45-for-1 stock split completed on July 25, 2017, as described in note 1 to our unaudited condensed financial statements included elsewhere in this prospectus and (iii) assumes:

- no exercise of the outstanding options described above;
- no purchase of shares in this offering by Cellectis; and
- the underwriters' option to purchase up to an additional 457,500 shares of common stock from us is not exercised.

SUMMARY HISTORICAL FINANCIAL INFORMATION

The summary historical financial information appearing below for the years ended December 31, 2017, 2016 and 2015 has been derived from our audited financial statements incorporated by reference into this prospectus. The summary historical financial information appearing below for the three-month periods ended March 31, 2018 and 2017 has been derived from our unaudited interim financial statements incorporated by reference into this prospectus. The summary historical financial information below should be read together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in conjunction with the financial statements, related notes and other information, each of which is included in our Annual Report on Form 10-K for the year ended December 31, 2017 and our Quarterly Report on Form 10-Q for the three-month period ended March 31, 2018, in each case, incorporated by reference into this prospectus.

Our historical results are not necessarily indicative of our future results. The summary historical financial information below does not contain all the information included in our financial statements, which are incorporated by reference into this prospectus.

Statements of Operations
(in thousands, except per share data)

	Year Ended December 31,			Three Months Ended March 31,	
	2017	2016	2015	2018	2017
				(unaudited)	
Revenue	$ 508	$ 399	$ 1,272	$ 11	$ 55
Operating expenses:					
Cost of revenue	—	200	751	—	—
Research and development	11,556	5,638	2,766	1,093	1,266
Sales, general, and administrative	14,741	6,670	3,569	3,214	1,578
Total Operating expenses	26,297	12,508	7,086	4,307	2,844
Loss from operations	(25,789)	(12,109)	(5,814)	(4,296)	(2,789)
Interest expense, net	(1)	(5)	(261)	(68)	(14)
Foreign currency transaction (loss) gain	(190)	28	186	(6)	(29)
Loss before income taxes	(25,980)	(12,086)	(5,889)	(4,370)	(2,832)
Income tax expense	—	—	—	—	—
Net loss	$ (25,980)	$ (12,086)	$ (5,889)	$ (4,370)	$ (2,832)
Basic and diluted loss per share(1)	$ (1.12)	$ (0.62)	$ (0.88)	$ (0.16)	$ (0.14)
Weighted average shares outstanding—basic and diluted	23,153,661	19,600,000	6,725,740	27,851,162	19,600,000

Balance Sheet Data

	As of December 31, 2017	As of March 31, 2018	
	Actual	Unaudited	As Adjusted(2)
		(in thousands)	
Cash and cash equivalents	$ 56,664	$ 50,703	$ 98,960
Total assets	72,167	71,867	120,124
Accumulated deficit	(54,548)	(58,918)	(58,918)
Total stockholders' equity	57,476	53,860	102,117
Total liabilities and stockholders' equity	72,167	71,867	120,124

(1) See note 8 to our audited financial statements incorporated by reference into this prospectus, for an explanation of the method used to calculate basic and diluted net loss per share.

(2) As adjusted to give effect to the sale by us of 3,050,000 shares of our common stock in this offering at an assumed public offering price of $17.09 per share, which was the last reported sale price of our common stock on NASDAQ on May 14, 2018, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the risks described in Part II, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2017, and the following risks, together with all the other information contained in or incorporated by reference into this prospectus, including our financial statements and notes thereto, before you invest in our common stock. If any of the following risks actually materializes, our operating results, financial condition and liquidity could be materially adversely affected. As a result, the trading price of our common stock could decline and you could lose all or part of your investment.

Risk Related to this Offering

If you purchase common stock in this offering, you will experience substantial and immediate dilution.

If you purchase common stock in this offering, you will experience substantial and immediate dilution of $13.79 per share in the net tangible book value after giving effect to the offering at an assumed public offering price of $17.09 per share, which was the last reported sale price of our common stock on the NASDAQ on May 14, 2018 because the price that you pay will be substantially greater than the net tangible book value per share that you acquire. For a further description of the dilution that you will experience immediately after this offering, see the section of this prospectus titled "Dilution."

Our management will have broad discretion over the use of the proceeds we receive in this offering and might not apply the proceeds in ways that increase the value of your investment.

Our management will have broad discretion to use the net proceeds from this offering, including for any of the purposes described in the section entitled "Use of Proceeds," and you will be relying on the judgment of our management regarding the application of these proceeds. You will not have the opportunity to influence our decisions on how to use the proceeds, and we may not apply the net proceeds of this offering in ways that increase the value of your investment. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we intend to invest the net proceeds from this offering in marketable securities that may include investment-grade interest-bearing securities, money market accounts, certificates of deposit, commercial paper and guaranteed obligations of the U.S. government. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

We have made statements in this prospectus and in documents incorporated by reference into this prospectus under the captions “Summary,” “Risk Factors,” “Use of Proceeds,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Business” and in other sections in and incorporated by reference into this prospectus that are forward-looking statements within the meaning of the federal securities laws, including Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We have made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In some cases, you can identify these statements by forward-looking words such as “may,” “might,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential” or “continue,” the negative of these terms and other comparable terminology. These forward-looking statements, which are subject to risks, uncertainties and assumptions about us, may include projections of our future financial performance, our anticipated growth strategies and anticipated trends in our business. These statements are only predictions based on our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from the results, level of activity, performance or achievements expressed or implied by the forward-looking statements, including those factors discussed under, and incorporated by reference into, the section entitled “Risk Factors.” You should specifically consider the numerous risks outlined under, and incorporated by reference into, the section entitled “Risk Factors.”

Although we believe the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, level of activity, performance or achievements. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. We are under no duty to update any of these forward-looking statements after the date of this prospectus to conform our prior statements to actual results or revised expectations.

Unless otherwise indicated, information contained in, and incorporated by reference into, this prospectus concerning our industry and the markets in which we operate is based on information from various sources, including independent industry publications. In presenting this information, we have also made assumptions based on such data and other similar sources, and on our knowledge of, and our experience to date in, the potential markets for our product. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in, and incorporated by reference into, the section entitled “Risk Factors.” These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds to us from this offering will be approximately $48.3 million, or approximately $55.6 million if the underwriters exercise in full their option to purchase additional shares of common stock, after deducting estimated underwriting discounts and commissions and estimated offering expenses.

We intend to use the net proceeds of this offering (including any net proceeds from the underwriters' exercise of their option to purchase additional shares of common stock) as follows:

- approximately $20 million to fund research and development costs to advance our existing product candidates and accelerate our capabilities to develop new products in our new facility, with a focus on producing food ingredient products such as healthier oil composition, higher fiber content, better proteins and reduced allergens for example. We anticipate working in a variety of crops including soybean, wheat, potatoes, alfalfa and canola;
- approximately $12 million to build out commercial capabilities, which includes incremental expansion of our sales force to build commercial relationships with supply chain and food companies, furnishing a demonstration kitchen, and producing demonstration and promotional products, such as high oleic oil and meal samples, to help drive demand creation;
- approximately $10 million for working capital to accelerate our commercial efforts , which are primarily high oleic grain purchases and associated processing and handling costs to produce oil and meal and could include some working capital investments for seed production; and
- the remainder will be used for general corporate purposes.

We may also use a portion of the net proceeds to acquire or invest in complementary products, technologies or businesses, although we currently have no agreements or binding commitments to complete any such transaction.

However, due to the uncertainties inherent in the product development process, it is difficult to estimate with certainty the exact amounts of the net proceeds from this offering that may be used for the above purposes. The amount and timing of our actual expenditures will depend upon numerous factors, including the results of our research and development efforts, the timing and success of our ongoing field tests or field tests we may commence in the future and the timing of regulatory submissions. As a result, our management will have broad discretion over the use of the net proceeds from this offering, and investors will be relying on our judgment regarding the application of the net proceeds. In addition, we might decide to postpone or not pursue certain activities or field tests if the net proceeds from this offering and our other sources of cash are less than expected.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments. Taking into account the proceeds of this offering and our anticipated cash burn rate, we believe our cash and cash equivalents will be sufficient to fund our operations through late 2020. However, there can be no assurance that we will be able to do so or that we will ever operate profitably.

DIVIDEND POLICY

We do not anticipate declaring or paying any cash dividends to holders of our common stock in the foreseeable future. We currently intend to retain future earnings, if any, to finance the growth of our business. If we decide to pay cash dividends in the future, the declaration and payment of such dividends will be at the sole discretion of our Board of Directors and may be discontinued at any time. In determining the amount of any future dividends, our Board of Directors will take into account any legal or contractual limitations, our actual and anticipated future earnings, cash flow, debt service and capital requirements and other factors that our Board of Directors may deem relevant.

MARKET PRICE OF OUR COMMON STOCK

Shares of our common stock have been trading on the NASDAQ under the symbol “CLXT” since July 2017.

The following table sets forth for the period indicated the reported high and low closing sale prices per ordinary share on the NASDAQ.

	High	Low
Third Quarter 2017 (from July 20, 2017)	$ 28.31	$ 10.44
Fourth Quarter 2017	$ 31.48	$ 17.13
First Quarter 2018	$26.42	$13.12
Second Quarter 2018 (through May 14, 2018)	$17.38	$13.37

On May 14, 2018, the reported closing sale price of shares of our common stock on the NASDAQ was $17.09 per share.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of March 31, 2018:

- on an actual basis; and
- on an as adjusted basis to give effect to the sale and issuance by us of 3,050,000 shares of our common stock in this offering at an assumed public offering price of $17.09 per share, which was the last reported sale price of our common stock on the NASDAQ on May 14, 2018, after deducting estimated underwriting discounts and commissions and estimated offering expenses, and assuming that the net proceeds of this offering are held as cash.

The As Adjusted information below is illustrative only, and our capitalization following completion of this offering will be adjusted based on the actual public offering price and other terms of the offering determined at pricing. You should read this table in conjunction with our unaudited interim financial statements and the notes thereto and the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Quarterly Report on Form 10-Q for the three-month period ended March 31, 2018, each of which is incorporated by reference herein, as well as the section entitled "Use of Proceeds" included elsewhere in this prospectus.

	As of March 31, 2018	
	Actual	As Adjusted
	(in thousands)	
Cash and cash equivalents	$ 50,703	$ 98,960
Financing lease obligation	$ 14,757	$ 14,757
Stockholders' equity:		
Preferred stock, $0.0001 par value, no shares authorized, actual; 50,000,000 shares authorized and no shares issued and outstanding on an as adjusted basis	—	—
Common stock, $0.0001 par value, 275,000,000 shares authorized and 27,954,781 shares issued and outstanding; 275,000,000 shares authorized and 31,004,781 shares issued and outstanding on an as adjusted basis	3	3
Additional paid-in capital	112,775	161,031
Accumulated (deficit)	(58,918)	(58,918)
Total stockholders' equity	$ 53,860	$ 102,117
Total capitalization	$ 71,867	$ 120,124

DILUTION

Our net tangible book value as of March 31, 2018 was $53.9 million, or $1.93 per share of common stock. Net tangible book value per share represents tangible assets, less liabilities, divided by the aggregate number of shares outstanding. After giving effect to the sale by us of 3,050,000 shares of common stock in this offering, at an assumed public offering price of $17.09 per share, which was the last reported sale price of our common stock on the NASDAQ on May 14, 2018, and the receipt and application of the net proceeds, our adjusted net tangible book value as of March 31, 2018 would have been $102.1 million or $3.30 per share. This represents an immediate increase in adjusted net tangible book value to our existing stockholders of $1.37 per share and immediate dilution to new investors of $13.79 per share. Dilution per share represents the difference between the price per share to be paid by new investors for the shares of common stock sold in this offering and the adjusted net tangible book value per share immediately after this offering. The following table illustrates this per share dilution:

Assumed public offering price per share		$17.09
Net tangible book value per share as of March 31, 2018	$1.93	
Increase in net tangible book value per share attributable to new investors	$1.37	
Adjusted net tangible book value per share as of March 31, 2018 after this offering		$ 3.30
Dilution per share to new investors in this offering		$13.79

If the underwriters exercise their option in full to purchase 457,500 additional shares of common stock in this offering, the adjusted net tangible book value per share after the offering would be $3.48 per share, the increase in adjusted net tangible book value per share to our existing stockholders would be $1.55 per share and the adjusted dilution to new investors participating in this offering would be $13.61 per share.

The following table sets forth, on an adjusted basis as described above, as of March 31, 2018, the number of shares of common stock purchased from us, the total consideration paid, or to be paid, and the average price per share paid, or to be paid, by our existing stockholders (assuming no existing stockholders, including Cellectis, purchase any shares in this offering) and by the new investors, at the assumed public offering price of $17.09 per share, which was the last reported sale price of our common stock on the NASDAQ on May 14, 2018 after deducting estimated underwriting discounts and commissions and offering expenses payable by us:

	Shares Purchased		Total Consideration		
	Number	Percent	Amount (in thousands)	Percent	Average Price Per Share
Existing stockholders	27,954,781	90.2%	$ 112,775	68.4%	$ 4.03
New investors	3,050,000	9.8%	$ 52,125	31.6%	$ 17.09
Total	31,004,781	100.0%	$ 164,900	100.0%	$ 5.32

DESCRIPTION OF CAPITAL STOCK

Below is a description of the material terms and provisions of our amended and restated certificate of incorporation, which we refer to as our Certificate of Incorporation, and our amended and restated bylaws, which we refer to as our By-laws, as well as relevant terms and provisions of our indemnification agreements with directors and officers and Delaware law affecting the rights of our stockholders. This summary does not purport to be complete and is qualified in its entirety by the provisions of our Certificate of Incorporation, By-laws and such indemnification agreements. Copies of our Certificate of Incorporation, By-laws and indemnification agreements have been filed with the SEC and are incorporated by reference into the registration statement of which this prospectus forms a part.

General

Our authorized capital stock consists of:

- 275,000,000 shares of common stock, par value $0.0001 per share; and
- 50,000,000 shares of preferred stock, par value $0.0001 per share.

As of March 31, 2018, there were 27,954,781 shares of common stock outstanding, of which 22,100,000 were held by Cellectis. At that date, there were no shares of preferred stock outstanding. Immediately after the completion of this offering, 31,004,781 will be outstanding, assuming the underwriters' option to purchase additional shares is not exercised, and no shares of preferred stock will be outstanding.

Common Stock

Voting Rights. The holders of our common stock are entitled to one vote per share on all matters to be voted upon by the stockholders. Holders of our common stock do not have cumulative voting rights in the election of directors. Accordingly, the holders of a majority of the voting power of our common stock could, if they so choose, elect all the directors.

Dividend Rights. Holders of common stock are entitled to receive dividends if, as and when declared by our Board of Directors, out of our legally available assets, in cash, property, shares of our common stock or other securities, after payments of dividends required to be paid on outstanding preferred stock, if any.

Distributions in Connection with Mergers or Other Business Combinations. Upon a merger, consolidation or substantially similar transaction, holders of common stock will be entitled to receive equal per share payments or distributions.

Liquidation Rights. Upon our liquidation, dissolution or winding up, any business combination or a sale or disposition of all or substantially all of our assets, the assets legally available for distribution to our stockholders will be distributable ratably among the holders of the common stock, subject to prior satisfaction of all outstanding debts and other liabilities and the preferential rights and payment of liquidation preferences, if any, on any outstanding preferred stock.

Stockholders Agreement. In connection with our initial public offering, we entered into a stockholders agreement with Cellectis, pursuant to which Cellectis has certain rights so long as it beneficially owns at least 15% of the then-outstanding shares of our common stock, as described in "Certain Relationships and Related Party Transactions, and Director Independence—Relationship with Cellectis—Stockholders Agreement" in our definitive proxy statement, incorporated by reference herein.

Other Matters. Our Certificate of Incorporation does not entitle holders of our common stock to preemptive rights. No redemption or sinking fund provisions apply to our common stock. All outstanding shares of our common stock are, and the shares of common stock offered in this offering will be upon payment and delivery in accordance with the underwriting agreement, fully paid and non-assessable.

Preferred Stock

Our Certificate of Incorporation authorizes our Board of Directors to issue preferred stock in one or more series and to determine the preferences, limitations and relative rights of any shares of preferred stock that we choose to issue, without vote or action by the stockholders.

Anti-Takeover Effects of Delaware Law, Our Certificate of Incorporation and Our By-laws

The following provisions may make a change in control of our business more difficult and could delay, defer or prevent a tender offer or other takeover attempt that a stockholder might consider to be in its best interest, including takeover attempts that might result in the payment of a premium to stockholders over the market price for their shares. These provisions also may promote the continuity of our management by making it more difficult for a person to remove or change the incumbent members of our Board of Directors.

Authorized but Unissued Shares; Undesignated Preferred Stock. The authorized but unissued shares of our common stock will be available for future issuance without stockholder approval. These additional shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital, acquisitions and employee benefit plans. In addition, our Board of Directors may authorize, without stockholder approval, the issuance of undesignated preferred stock with voting rights or other rights or preferences designated from time to time by our Board of Directors. The existence of authorized but unissued shares of common stock or preferred stock may enable our Board of Directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.

Election and Removal of Directors. Our Board of Directors consists of not less than five nor more than eleven directors, excluding any directors elected by holders of preferred stock pursuant to provisions applicable in the case of defaults, if any. The exact number of directors will be fixed from time to time by resolution of our Board of Directors. Our Board of Directors currently has five members.

Pursuant to the Stockholders Agreement, Cellectis has the right to nominate the greater of three directors or a majority of directors to our Board of Directors so long as it continues to own at least 15% of our then-outstanding shares of our common stock.

At any time after Cellectis beneficially owns less than 50% of our then outstanding common stock, our Certificate of Incorporation provides that directors may be removed only for cause and only by the affirmative vote of holders of a majority of our then outstanding stock. Prior to such time, directors may be removed with or without cause.

Classified Board of Directors. Our Board of Directors currently is not classified. However, our Certificate of Incorporation and our By-laws provide that our Board of Directors will be classified with approximately one-third of the directors elected each year at such time as Cellectis no longer holds at least 50% of our then outstanding common stock. The number of directors will be fixed from time to time by a majority of the total number of directors that we would have at the time such number is fixed if there were no vacancies. The directors will be divided into three classes, designated class I, class II and class III. Each class will consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. At each annual meeting of stockholders, successors to the class of directors whose term expires at that annual meeting will be elected for a three-year term and until their successors are duly elected and qualified. In addition, if the number of directors is changed, any increase or decrease will be apportioned by our Board of Directors among

the classes so as to maintain the number of directors in each class as nearly equal as possible, and any additional director of any class elected to fill a vacancy resulting from an increase in such class or from the removal from office, death, disability, resignation or disqualification of a director or other cause will hold office for a term that will coincide with the remaining term of that class, but in no case will a decrease in the number of directors have the effect of removing or shortening the term of any incumbent director.

Director Vacancies. Our Certificate of Incorporation authorizes only our Board of Directors to fill vacant directorships.

No Cumulative Voting. Our Certificate of Incorporation provides that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders. At any time after Cellectis beneficially owns less than 50% of our then outstanding common stock, our By-laws and our Certificate of Incorporation provide that special meetings of our stockholders may only be called by the Board of Directors. Prior to such time, a special meeting may also be called by the secretary of the Company at the request of stockholders holding a majority of the outstanding shares entitled to vote.

Advance Notice Procedures for Director Nominations. Our By-laws establish advance notice procedures for stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders. Although our By-laws do not give the Board of Directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, our By-laws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the Company.

Action by Written Consent. At any time after Cellectis beneficially owns less than 50% of our then outstanding common stock, our By-laws and our Certificate of Incorporation provide that any action required or permitted to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by any consent in writing in lieu of a meeting of such stockholders, subject to the rights of the holders of any series of preferred stock. Prior to such time, such actions may be taken without a meeting by written consent.

Amending Our Certificate of Incorporation and Bylaws. At any time after Cellectis beneficially owns less than 50% of our then outstanding common stock, our Certificate of Incorporation and By-laws may be amended by the affirmative vote of the holders of at least two-thirds of our common stock. Prior to such time, our Certificate of Incorporation and By-laws may be amended by the affirmative vote of the holders of a majority of the voting power of our common stock.

Exclusive Jurisdiction. Our Certificate of Incorporation provides that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers, or other employees to us or to our stockholders, any action asserting a claim arising pursuant to the DGCL, or any action asserting a claim governed by the internal affairs doctrine.

Business Combinations with Interested Stockholders. Subject to certain exceptions, Section 203 of the DGCL prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an “interested stockholder” (defined generally as any person who beneficially owns 15% or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless (i) prior to such time the Board of Directors of such corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (ii) upon consummation of the transaction that resulted in

the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of such corporation at the time the transaction commenced (excluding for purposes of determining the voting stock of such corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (A) by persons who are directors and also officers of such corporation and (B) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer); or (iii) at or subsequent to such time the business combination is approved by the Board of Directors of such corporation and authorized at a meeting of stockholders (and not by written consent) by the affirmative vote of at least 66 2/3% of the outstanding voting stock of such corporation not owned by the interested stockholder.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have expressly elected not to be governed by the "business combination" provisions of Section 203 of the DGCL, until after such time as Cellectis no longer beneficially owns at least 50% of our common stock. At that time, such election shall be automatically withdrawn and we will thereafter be governed by the "business combination" provisions of Section 203 of the DGCL.

Conflicts of Interest

Delaware law permits corporations to adopt provisions renouncing any interest or expectancy in certain opportunities that are presented to the corporation or its officers, directors or stockholders. Our Certificate of Incorporation renounces, to the maximum extent permitted from time to time by Delaware law, any interest or expectancy that we have in, or right to be offered an opportunity to participate in, specified business opportunities that are from time to time presented to our officers, directors or stockholders or their respective affiliates, other than those officers, directors, stockholders or affiliates who are our or our subsidiaries' employees. Our Certificate of Incorporation provides that, to the fullest extent permitted by law, none of Cellectis or any of its affiliates or any director who is not employed by us or his or her affiliates has any duty to refrain from (i) engaging in a corporate opportunity in the same or similar lines of business in which we or our affiliates now engage or propose to engage or (ii) otherwise competing with us or our affiliates. In addition, to the fullest extent permitted by law, in the event that Cellectis or any non-employee director acquires knowledge of a potential transaction or other business opportunity which may be a corporate opportunity for itself or himself or its or his affiliates or for us or our affiliates, such person has no duty to communicate or offer such transaction or business opportunity to us or any of our affiliates and they may take any such opportunity for themselves or offer it to another person or entity. Our Certificate of Incorporation does not renounce our interest in any business opportunity that is expressly offered to a non-employee director solely in his or her capacity as a director of Calyxt. To the fullest extent permitted by law, no business opportunity will be deemed to be a potential corporate opportunity for us unless we would be permitted to undertake the opportunity under our Certificate of Incorporation, we have sufficient financial resources to undertake the opportunity and the opportunity would be in line with our business.

Registration Rights

The stockholders agreement provides Cellectis with registration rights relating to shares of our common stock held by Cellectis. See "Certain Relationships and Related Party Transactions, and Director Independence—Relationship with Cellectis—Stockholders Agreement" in our definitive proxy statement, incorporated by reference herein.

Indemnification and Limitations on Directors' Liability

Section 145 of the DGCL grants each Delaware corporation the power to indemnify any person who is or was a director, officer, employee or agent of a corporation, against expenses, including attorneys' fees,

judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of the corporation, by reason of serving or having served in any such capacity, if he or she acted in good faith in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. A Delaware corporation may similarly indemnify any such person in actions by or in the right of the corporation if he or she acted in good faith in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification may be made in respect of any claim, issue or matter as to which the person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or the court in which the action was brought determines that, despite adjudication of liability, but in view of all of the circumstances of the case, the person is fairly and reasonably entitled to indemnity for expenses which the Delaware Court of Chancery or other court shall deem proper.

Section 102(b)(7) of the DGCL enables a corporation in its certificate of incorporation, or an amendment thereto, to eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for violations of the director's fiduciary duty as a director, except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the DGCL (providing for director liability with respect to unlawful payment of dividends or unlawful stock purchases or redemptions) or (iv) for any transaction from which a director derived an improper personal benefit.

Our Certificate of Incorporation and By-laws indemnify our directors and officers to the full extent permitted by the DGCL and our Certificate of Incorporation also allows our Board of Directors to indemnify other employees. This indemnification extends to the payment of judgments in actions against officers and directors and to reimbursement of amounts paid in settlement of such claims or actions and may apply to judgments in favor of the corporation or amounts paid in settlement to the corporation. This indemnification also extends to the payment of attorneys' fees and expenses of officers and directors in suits against them where the officer or director acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of Calyxt, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. This right of indemnification is not exclusive of any right to which the officer or director may be entitled as a matter of law and shall extend and apply to the estates of deceased officers and directors.

We maintain a directors' and officers' insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses us for those losses for which we have lawfully indemnified the directors and officers. The policy contains various exclusions that are normal and customary for policies of this type.

We have entered into indemnification agreements with our directors and officers providing for certain advancement and indemnification rights. In each indemnification agreement, we agreed, subject to certain exceptions, to indemnify and hold harmless the director or officer to the maximum extent then authorized or permitted by the DGCL or by any amendment(s) thereto.

We believe that the limitation of liability and indemnification provisions in our Certificate of Incorporation, By-laws, indemnification agreements and insurance policies are necessary to attract and retain qualified directors and officers. However, these provisions may discourage derivative litigation against directors and officers, even though an action, if successful, might benefit us and other stockholders. Furthermore, a stockholder's investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers as required or allowed by these limitation of liability and indemnification provisions.

At present, there is no pending litigation or proceeding involving any of our directors, officers, employees or agents as to which indemnification is sought from us, nor are we aware of any threatened litigation or proceeding that may result in an indemnification claim.

Listing

Our shares of common stock are listed on the NASDAQ under the symbol “CLXT.”

Transfer Agent and Registrar

The transfer agent and registrar for the common stock is Computershare Trust Company, N.A.

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of substantial amounts of shares of our common stock, including shares issued upon the exercise of outstanding options, in the public market after this offering, or the possibility of these sales occurring, could adversely affect the prevailing market price for our common stock from time to time or impair our ability to raise equity capital in the future.

Based on the number of shares of common stock outstanding as of March 31, 2018, upon completion of this offering, 31,004,781 shares of common stock will be outstanding, assuming no exercise of the underwriter's option to purchase additional shares and no exercise of outstanding options. All of the shares sold in our initial public offering, excluding any portion of such shares purchased by certain of our existing principal stockholders, as well as all of the shares sold in this offering, excluding any shares purchased by Cellectis, will be freely tradable.

The remaining shares of common stock outstanding after this offering are restricted as a result of securities laws or lock-up agreements, as described below. Following the expiration of the lock-up period, all shares will be eligible for resale in compliance with Rule 144 or Rule 701. "Restricted securities" as defined under Rule 144 were issued and sold by us in reliance on exemptions from the registration requirements of the Securities Act. These shares may be sold in the public market only if registered or pursuant to an exemption from registration, such as Rule 144 or Rule 701 under the Securities Act.

Rule 144

In general, a person who has beneficially owned restricted shares of our common stock for at least six months would be entitled to sell such securities, provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale and (ii) we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Persons who have beneficially owned restricted shares of our common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 310,048 shares immediately after this offering, assuming no exercise of the underwriters' option to purchase additional shares; or
- the average weekly trading volume of shares of our common stock on the NASDAQ during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144 to the extent applicable.

Rule 701

In general, under Rule 701, most of our employees, directors, officers, consultants or advisors who purchases shares from us in connection with a compensatory stock or option plan or other written agreement before our initial public offering are entitled to resell such shares in reliance on Rule 144, without having to comply with the holding period requirements or other restrictions contained in Rule 701.

The SEC has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after the date of our initial public offering. Securities issued in reliance on Rule 701 are restricted securities and, subject to the contractual restrictions described above may be sold by persons other than "affiliates," as defined in Rule 144, subject only to the manner of sale provisions of Rule 144 and by "affiliates" under Rule 144 without compliance with its one-year minimum holding period requirement.

Registration Rights

Cellectis is entitled to various rights with respect to the registration of its shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Certain Relationships and Related Party Transactions, and Director Independence—Relationship with Cellectis—Stockholders Agreement” in our definitive proxy statement, incorporated by reference herein.

Stock Options and RSUs

As of March 31, 2018, options to purchase a total of 3,619,506 shares of common stock and RSUs with respect to 1,297,658 shares of common stock were outstanding.

Registration Statement

We have filed a registration statement on Form S-8 under the Securities Act covering all shares of common stock subject to outstanding options and RSUs or otherwise issuable in the future pursuant to our equity incentive plans. Subject to Rule 144 volume limitations applicable to affiliates, shares registered under any registration statements are available for sale in the open market except to the extent that the shares are subject to vesting restrictions with us or the contractual restrictions described below.

Lock-up Agreements

Our directors, executive officers and Cellectis have agreed, subject to certain exceptions, not to offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, or enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock for a period of 90 days after the date of the underwriting agreement, without the prior written consent of the representatives of the underwriters. During the lock-up period, stock options and RSUs with respect to approximately 506 thousand shares of our common stock will vest. In connection with such vesting, a portion of these shares may be sold on the open market, including pursuant to existing 10b5-1 trading plans, or to us or Cellectis, in each case to satisfy certain tax obligations in connection with the vesting of such awards. See “Underwriting.”

MATERIAL U.S. FEDERAL TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a discussion of the material U.S. federal income tax consequences of the ownership and disposition of our common stock acquired in this offering by a "Non-U.S. Holder" that does not own, and has not owned, actually or constructively, more than 5% of our common stock. You are a Non-U.S. Holder if for U.S. federal income tax purposes you hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes) and you are a beneficial owner of our common stock that is:

- an individual that is not a citizen or resident of the United States;
- a corporation that is not created or organized in or under the laws of the United States, any state thereof, or the District of Columbia; or
- foreign estate or trust that in either case is not subject to U.S. federal income tax on a net-income basis on income or gain from our common stock.

You are not a Non-U.S. Holder if you are a nonresident alien individual present in the United States for 183 days or more in the taxable year of disposition, or if you are a former citizen or former resident of the United States for U.S. federal income tax purposes. If you are such a person, you should consult your tax advisor regarding the U.S. federal income tax consequences of the ownership and disposition of our common stock. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- tax-exempt organizations;
- dealers in securities;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons who hold our common stock as a position in a hedging transaction, "straddle," "conversion transaction," or other risk reduction transaction;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- regulated investment companies or real estate investment trusts;
- controlled foreign corporations;
- passive foreign investment companies; or
- pension plans.

If you are a partnership or other pass-through entity (including an entity or arrangement treated as a partnership or other type of pass-through entity for U.S. federal income tax purposes) that owns our common stock, the U.S. federal income tax treatment of a partner or beneficial owner will generally depend on the status of the partner or beneficial owner and your activities. Partnerships, partners and beneficial owners in partnerships or other pass-through entities that own our common stock should consult their tax advisors as to the particular U.S. federal income tax consequences of the ownership and disposition of our common stock

This discussion is based on the current provisions of the Code, administrative pronouncements, judicial decisions and final, temporary and proposed Treasury regulations, changes to any of which subsequent to the date of this prospectus may affect the tax consequences described herein, possibly with retroactive effect, which may result in tax consequences different from those discussed below. This discussion does not describe all aspects of U.S. federal income taxation that may be relevant to you in light of your particular circumstances, does not discuss estate, gift, alternative minimum tax or Medicare contribution tax consequences and does not address any aspect of state, local or non-U.S. taxation. You should consult your tax advisor with regard to the application of the U.S. federal tax laws to your particular situation, as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

Distributions

As discussed above under "Dividend Policy," we do not anticipate declaring or paying any cash dividends to holders of our common stock in the foreseeable future. Distributions of cash or other property, if any (other than certain distributions of stock), will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed our current and accumulated earnings and profits, they will constitute a return of capital, which will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of our common stock and will be treated as described below under "—Gain on Disposition of Our Common Stock."

Dividends paid to you that are not effectively connected with your conduct of a trade or business in the United States generally will be subject to withholding tax at a 30% rate or a reduced rate specified by an applicable income tax treaty. In order to obtain a reduced rate of withholding, you will be required to provide us or our paying agent with a properly executed applicable IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable (or appropriate successor form), certifying under penalties of perjury that you are not a United States person and you are eligible for the benefits under the applicable tax treaty. If a Non-U.S. Holder holds our common stock through a financial institution or other intermediary, the Non-U.S. Holder generally will be required to provide the appropriate documentation to the financial institution or other intermediary. A Non-U.S. Holder eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty who fails to timely provide an IRS Form W-8BEN or W-8BEN-E may obtain a refund of any excess amounts withheld by timely filing an appropriate claim with the IRS.

If dividends paid to you are effectively connected with your conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base maintained by you in the United States), you will generally be taxed on the dividends in the same manner as a U.S. person. In this case, you will be exempt from the withholding tax discussed in the preceding paragraph, although you will be required to provide a properly executed IRS Form W-8ECI (or appropriate successor form) in order to claim an exemption from withholding. Dividends received by a corporate Non-U.S. Holder that are effectively connected with such Non-U.S. Holder's conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, attributable to a permanent establishment or fixed base maintained by the Non-U.S. Holder in the United States) may be subject to an additional branch profits tax at a 30% rate (or such lower rate as may be specified by an applicable income tax treaty). You should consult your tax advisor with respect to other U.S. tax consequences of the ownership and disposition of our common stock, including the possible imposition of the branch profits tax.

Gain on Disposition of Our Common Stock

Subject to the discussions below under "—Information Reporting and Backup Withholding" and "—FATCA," you generally will not be subject to U.S. federal income or withholding tax on gain realized on a sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with your conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by you in the United States), or
- we are or have been a "United States real property holding corporation," as defined in the Code, at any time within the five-year period preceding the disposition or your holding period, whichever period is shorter, and our common stock is not regularly traded on an established securities market within the meaning of the applicable Treasury regulations prior to the beginning of the calendar year in which the sale or disposition occurs.

We believe that we are not, and do not anticipate becoming, a United States real property holding corporation.

If you recognize gain on a sale or other disposition of our common stock that is effectively connected with your conduct of a trade or business in the United States (and if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by you in the United States), you will generally be taxed on such gain in the same manner as a U.S. person. If you are a corporation, you may be subject to the branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. You should consult your tax advisor with respect to other U.S. tax consequences of the ownership and disposition of our common stock, including the possible imposition of the branch profits tax.

Information Reporting and Backup Withholding

Information returns will be filed with the IRS in connection with payments of dividends on our common stock. Unless you comply with certification procedures to establish that you are not a U.S. person, information returns may also be filed with the IRS in connection with the proceeds from a sale or other disposition of our common stock. You may be subject to backup withholding on payments on our common stock or on the proceeds from a sale or other disposition of our common stock unless you comply with certification procedures to establish that you are not a U.S. person or otherwise establish an exemption. Compliance with the certification procedures required to claim a reduced rate of withholding under a treaty (including properly certifying your non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate version of IRS Form W-8 (or a successor form)) generally will satisfy the certification requirements necessary to avoid backup withholding as well. Amounts withheld under the backup withholding rules are not additional taxes and may be refunded or credited against your U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

FATCA

Provisions of the Code commonly referred to as "FATCA" require withholding of 30% on payments of dividends on our common stock, as well as payments of gross proceeds of dispositions occurring after December 31, 2018 of our common stock, to "foreign financial institutions" (which is broadly defined for this purpose and in general includes investment vehicles) and certain other non-U.S. entities unless various U.S. information reporting and due diligence requirements (generally relating to ownership by U.S. persons of interests in or accounts with those entities) have been satisfied, or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. If FATCA withholding is imposed, a beneficial owner that is not a foreign financial institution generally may obtain a refund of any amounts withheld by filing a U.S. federal income tax return (which may entail significant administrative burden). You should consult your tax advisor regarding the effects of FATCA on your investment in our common stock.

We will not pay any additional amounts to Non-U.S. Holders with respect to any amounts withheld, including pursuant to FATCA.

THE PRECEDING DISCUSSION OF U.S. FEDERAL TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY. IT IS NOT TAX ADVICE. YOU SHOULD CONSULT YOUR OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS AND THE CONSEQUENCES OF THE NEWLY ENACTED TAX REFORM LEGISLATION KNOWN AS THE TAX CUTS AND JOBS ACT.

UNDERWRITING

Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Jefferies LLC are acting as representatives of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
Citigroup Global Markets Inc.	
Goldman Sachs & Co. LLC	
Jefferies LLC	
Wells Fargo Securities, LLC	
BMO Capital Markets Corp.	
Total	

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus and to dealers at that price less a concession not in excess of $ per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	$	$	$
Underwriting discount	$	$	$
Proceeds, before expenses, to us	$	$	$

The expenses of the offering, not including the underwriting discount, are estimated at approximately $740,000 and are payable by us. We have also agreed to reimburse the underwriters for certain of their expenses, including up to an aggregate of $25,000 in connection with the clearance of this offering with the Financial Industry Regulatory Authority, as set forth in the underwriting agreement. The underwriters have agreed to reimburse certain of our expenses incurred in connection with this offering.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus, to purchase up to 457,500 additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We have agreed that, during a period of 90 days from the date of the underwriting agreement, we will not, without the prior written consent of the representatives of the underwriters, (i) directly or indirectly, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock or file any registration statement under the Securities Act with respect to any of the foregoing or (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of our common stock, whether any such swap or transaction described in clause (i) or (ii) above is to be settled by delivery of our common stock or other securities, in cash or otherwise. The foregoing sentence will not apply to (A) the shares of common stock to be sold in this offering, (B) any shares of our common stock issued by us upon the exercise of an option or warrant or the conversion of a security outstanding on the date of this prospectus and referred to in this prospectus, (C) any shares of our common stock issued or options to purchase our common stock granted pursuant to our existing employee benefit plans referred to in this prospectus, (D) any shares of our common stock issued pursuant to any non-employee director stock plan or dividend reinvestment plan referred to in this prospectus, (E) shares of our common stock or other securities issued by us in connection with joint ventures, commercial relationships or other strategic transactions, provided that (x) the aggregate number of securities issued pursuant to this clause (E) shall not exceed 7.5% of the total number of outstanding shares of our common stock immediately following the issuance and sale of the shares of our common stock in this offering and (y) such securities issued pursuant to this clause (E) during the 90-day restricted period described above shall be subject to the restrictions described in the form of lock-up agreement attached to the underwriting agreement for the remainder of such restricted period and the recipient of any such securities shall enter into an agreement substantially in such form, (F) shares sold to Cellectis in connection with the vesting of equity compensation awards, or (G) the filing by us of a registration statement on Form S-8 covering the registration of securities issued under our existing employee benefit plans referred to in this prospectus.

In addition, Cellectis and all of our directors and executive officers, whose shares, options and RSUs represent substantially all of our outstanding equity on a fully diluted basis, have agreed that, during the 90-day restricted period described above, such holder will not, without the prior written consent of the representatives of the underwriters, (i) directly or indirectly, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock, whether now owned or hereafter acquired by such holder or with respect to which such holder has or hereafter acquires the power of disposition (collectively, the "lock-up securities"), or exercise any right with respect to the registration of any of the lock-up securities, or file or cause to be filed any registration statement in connection therewith, under the Securities Act, or (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence

of ownership of the lock-up securities, whether any such swap or transaction is to be settled by delivery of our common stock or other securities, in cash or otherwise.

Notwithstanding the immediately preceding paragraph, and subject to the conditions below, such holder may transfer the lock-up securities without the prior written consent of the representatives of the underwriters, provided that (1) the representatives receive a signed lock-up agreement for the balance of the lockup period from each donee, trustee, distributee, or transferee, as the case may be, (2) any such transfer shall not involve a disposition for value, (3) such transfers are not required to be reported with the SEC on Form 4 in accordance with Section 16 of the Securities Exchange Act of 1934, as amended, and (4) such holder does not otherwise voluntarily effect any public filing or report regarding such transfers:

(i) as a bona fide gift or gifts; or

(ii) to any trust for the direct or indirect benefit of such holder or the immediate family of such holder (for this purpose, "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin); or

(iii) to a member of the immediate family of such holder; or

(iv) to a corporation, partnership, limited liability company or other entity of which such holder and the immediate family of such holder are the direct or indirect legal and beneficial owners of all the outstanding equity securities or similar interests of such corporation, partnership, limited liability company or other entity; or

(v) by will or intestate succession upon the death of such holder; or

(vi) by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement; or

(vii) as a distribution to limited partners or stockholders of such holder; or

(viii) to such holder's affiliates or to any investment fund or other entity controlled or managed by such holder; or

(ix) to a nominee or custodian of a person or entity to whom disposition or transfer would be permissible under (i)—(viii) above.

Notwithstanding the foregoing, nothing in the lock-up agreements for such holders will prohibit them from:

(i)(x) entering into a written plan meeting the requirements of Rule 10b5-1 under the Exchange Act of 1934, as amended, relating to the sale of our securities (a "10b5-1 Plan"), provided that the securities subject to such plan may not be sold and no public disclosure of any such action shall be required or shall be voluntarily made by any person until after the expiration of the 90-day lock-up period or (y) transferring our securities pursuant to any existing 10b5-1 Plan that has been entered into by the holder prior to the date of the lock-up agreement, provided that if the holder is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock, the holder shall include a statement in such report to the effect that such transfer is pursuant to an existing 10b5-1 Plan; or

(ii) exercising any stock option to purchase shares of our common stock, or any securities convertible into or exercisable or exchangeable for our common stock, or other similar awards granted on or prior to the date of this prospectus or granted pursuant to our equity incentive plans described in this prospectus; *provided* that the lock-up agreement shall apply to any securities issued upon such exercise, except to the extent such securities are transferred pursuant to clause (i)(y) above; or

(iii) transferring (or, in the case of Cellectis, acquiring) shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock from such holder (and, in the case of Cellectis, the acquisition thereof) to us or Cellectis (or (a) the purchase of the same by us or (b) the purchase of the same (directly or indirectly) by Cellectis) upon a vesting event of our securities or upon the exercise of options to purchase shares of our common stock, which options expire during the 90-day lock-up period, by such holder, in each case on a "cashless" or "net exercise" basis or to cover tax withholding obligations of such holder in connection with such vesting or exercise, whether by means of a "net settlement" or otherwise, in each case pursuant to employee benefit plans disclosed in this prospectus; *provided* that if the holder is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of our common stock the holder shall include a statement in such report to the effect that such transfer is made for such purpose; or

(iv) transferring shares of our common stock or any security convertible into or exercisable or exchangeable for shares of our common stock that occurs by any order or settlement resulting from any legal proceeding pursuant to a qualified domestic order or in connection with a divorce settlement; *provided* that in the case of any transfer or distribution pursuant to this clause, any filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of our common stock shall state that such transfer is pursuant to an order of a court or a settlement resulting from a legal proceeding unless such a statement would be prohibited by any applicable law or order of a court; or

(v) if such holder is a corporation, partnership, limited liability company or other entity, transferring shares of our common stock in connection with the sale or other bona fide transfer in a single transaction or all or substantially all of such holder's capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of such holder's assets, in any such case not undertaken for the purpose of avoiding the restrictions imposed by the lock-up agreement; *provided* that each transferee shall sign and deliver a lock-up letter substantially in the form contemplated by the underwriting agreement; or

(vi) transferring shares of our common stock or any security convertible into or exercisable or exchangeable for shares of our common stock pursuant to an order of a court or regulatory agency; *provided* that each transferee shall sign and deliver a lock-up letter substantially in the form contemplated by the underwriting agreement, unless prohibited by any applicable law or order of a court; and *provided further* that any filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of our common stock shall state that such transfer is pursuant to an order of a court or a settlement resulting from a legal proceeding unless such a statement would be prohibited by any applicable law or order of a court; or

(vii) transferring shares of our common stock or any security convertible into or exercisable or exchangeable for shares of our common stock after the date of this prospectus pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the shares of our common stock involving a change of control of us; *provided* that all of such holder's common stock subject to the lock-up agreement that are not so transferred, sold, tendered or otherwise disposed of remain subject to the lock-up agreement; *provided further* that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the shares of our common stock owned by such holder shall remain subject to the restrictions contained in the lock-up agreement (for this purpose, "change of control" shall mean the transfer (whether by tender offer, merger, consolidation, or other similar transaction), in one transaction or a series of related transactions, to a person or a group of affiliated persons, of shares of capital stock if, after such transfer, such person or group of affiliated persons would hold more than 50% of our outstanding voting securities (or the surviving entity)).

During the lock-up period, stock options and RSUs with respect to approximately 506 thousand shares of our common stock will vest. In connection with such vesting, a portion of these shares may be sold on the open market, including pursuant to existing 10b5-1 trading plans, or to us or Cellectis, in each case to satisfy certain tax obligations in connection with the vesting of such awards.

Market Listing

Our shares of common stock are listed on the NASDAQ under the symbol “CLXT.”

Price Stabilization and Short Positions

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. “Naked” short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the NASDAQ, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Passive Market Making

In addition, in connection with this offering, some of the underwriters (and selling group members) may engage in passive market making transactions in the shares on the NASDAQ, prior to the pricing and completion of the offering. Passive market making consists of displaying bids on the NASDAQ no higher than the bid prices of independent market makers and making purchases at prices no higher than those independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are limited to a specified percentage of the passive market maker’s average daily trading volume in the shares during a specified period and must be discontinued when that limit is reached. Passive market making may cause the price of the shares to be higher than the price that otherwise would exist in the open market in the absence of those transactions. If the underwriters commence passive market making transactions, they may discontinue them at any time.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

European Economic Area

In relation to each member state of the European Economic Area, no offer of ordinary shares which are the subject of the offering has been, or will be made to the public in that Member State, other than under the following exemptions under the Prospectus Directive:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the representatives for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of ordinary shares referred to in (a) to (c) above shall result in a requirement for the Company or any representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive, or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person located in a Member State to whom any offer of ordinary shares is made or who receives any communication in respect of an offer of ordinary shares, or who initially acquires any ordinary shares will be deemed to have represented, warranted, acknowledged and agreed to and with each representative and the Company that (1) it is a “qualified investor” within the meaning of the law in that Member State implementing Article 2(1)(e) of the Prospectus Directive; and (2) in the case of any ordinary shares acquired by it as a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, the ordinary shares acquired by it in the offer have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Member State other than qualified investors, as that term is defined in the Prospectus Directive, or in circumstances in which the prior consent of the representatives has been given to the offer or resale; or where ordinary shares have been acquired by it on behalf of persons in any Member State other than qualified investors, the offer of those ordinary shares to it is not treated under the Prospectus Directive as having been made to such persons.

The Company, the representatives and their respective affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgments and agreements.

This prospectus has been prepared on the basis that any offer of shares in any Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no

obligation arises for the Company or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the representatives have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the representatives to publish a prospectus for such offer.

For the purposes of this provision, the expression an "offer of ordinary shares to the public" in relation to any ordinary shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the ordinary shares to be offered so as to enable an investor to decide to purchase or subscribe the ordinary shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (as amended) and includes any relevant implementing measure in each Member State.

The above selling restriction is in addition to any other selling restrictions set out below.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission ("ASIC"), in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the "Corporations Act"), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the "Exempt Investors") who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The securities have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the securities has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or

invitation for subscription or purchase, of Non-CIS Securities may not be circulated or distributed, nor may the Non-CIS Securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Non-CIS Securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Non-CIS Securities pursuant to an offer made under Section 275 of the SFA except:

(a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law;

(d) as specified in Section 276(7) of the SFA; or

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Notice to Prospective Investors in Canada

The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the representatives are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the issuance of the shares of common stock offered hereby and certain matters of U.S. federal and New York State law will be passed upon for Calyxt, Inc. by Jones Day, New York, New York, and for the underwriters by Davis Polk & Wardwell LLP, New York, New York.

EXPERTS

The financial statements of Calyxt, Inc. as of December 31, 2017 and 2016, and for each of the years in the three-year period ended December 31, 2017 incorporated by reference into this prospectus and Registration Statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon incorporated by reference herein in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the U.S. Securities and Exchange Commission a registration statement (including amendments and exhibits to the registration statement) on Form S-1 under the Securities Act. This prospectus, which is part of the registration statement, does not contain all of the information set forth in the registration statement and the exhibits and schedules to the registration statement. For further information, we refer you to the registration statement and the exhibits and schedules filed as part of the registration statement. If a document has been filed as an exhibit to the registration statement, we refer you to the copy of the document that has been filed. Each statement in this prospectus relating to a document filed as an exhibit is qualified in all respects by the filed exhibit.

We are subject to the informational requirements of the Exchange Act. Accordingly, we are required to file reports and other information with the SEC, including annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K. You may inspect and copy reports and other information filed with the SEC at the Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet website that contains reports and other information about issuers, like us, that file electronically with the SEC. The address of that website is *www.sec.gov*.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (SEC File No. 001-38161):

- our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on March 14, 2018;
- our Quarterly Report on Form 10-Q for the period ended March 31, 2018, filed with the SEC on May 7, 2018;
- our Definitive Proxy Statement on Schedule 14A (to the extent incorporated by reference into our Annual Report on Form 10-K), filed with the SEC on April 19, 2018; and
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on July 20, 2017, including any amendments or reports filed for the purposes of updating this description.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to Investor Relations, Calyxt, Inc., 600 County Road D West, Suite 8, New Brighton, MN 55112; telephone: (651) 683-2807.

You also may access these filings on our website at www.calyxt.com. We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus).

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus modifies, supersedes or replaces such statement.

Table of Contents

Calyxt, Inc.

3,050,000 Shares of Common Stock

PRELIMINARY PROSPECTUS

, 2018

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

	Amount to Be Paid
SEC registration fee	$ 6,961
FINRA filing fee	9,125
NASDAQ listing fee	5,000
Transfer agent's and registrar's fees	5,000
Printing and engraving expenses	50,000
Legal fees and expenses	300,000
Accounting fees and expenses	175,000
Miscellaneous	188,914
	$ 740,000

Each of the amounts set forth above, other than the registration fee, the NASDAQ filing fee and the FINRA filing fee, is an estimate.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any threatened, pending or completed actions, suits or proceedings in which such person is made a party by reason of such person being or having been a director, officer, employee or agent to the registrant. The Delaware General Corporation Law provides that Section 145 is not exclusive of other rights to which those seeking indemnification may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise. The registrant's By-laws provide for indemnification by the registrant of its directors, officers and employees to the fullest extent permitted by the Delaware General Corporation Law. The registrant has entered into indemnification agreements with each of its directors and officers to provide these directors additional contractual assurances regarding the scope of the indemnification set forth in the registrant's Certificate of Incorporation and amended and restated By-laws and to provide additional procedural protections. There is no pending litigation or proceeding involving a director or executive officer of the registrant for which indemnification is sought.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases, redemptions or other distributions, or (iv) for any transaction from which the director derived an improper personal benefit. The registrant's Certificate of Incorporation provides for such limitation of liability.

The registrant maintains standard policies of insurance under which coverage is provided (a) to its directors and officers against loss arising from claims made by reason of breach of duty or other wrongful act, and (b) to the registrant with respect to payments which may be made by the registrant to such officers and directors pursuant to the above indemnification provision or otherwise as a matter of law.

The proposed form of underwriting agreement filed as Exhibit 1.1 to this registration statement will provide for indemnification of directors and officers of the registrant by the underwriters against certain liabilities.

Item 15. Recent Sales of Unregistered Securities

We have not sold any unregistered securities within the past three years, except for the following:

On October 1, 2015, we entered into an amended and restated contribution with Cellectis pursuant to which Cellectis contributed $40 million to us in exchange for 17,150,000 shares of our common stock. The $40 million contribution consisted of $30 million of cash and the conversion to equity of $10 million of loans and outstanding obligations owed by us to Cellectis. The issuance of the shares was made pursuant to the exemption provided by Section 4(a)(2) of the Securities Act of 1933.

In fiscal year 2017 prior to our initial public offering, the Registrant granted to its directors, employees and consultants options to purchase an aggregate of 2,119,698 shares under its equity compensation plans at an exercise price of $13.29 per share and the Registrant granted 1,452,333 restricted stock units to its directors, employees and consultants, 1,413,133 of which remain unvested and all of which had a grant price of $13.29.

In fiscal year 2016, the Registrant granted to its director, employees and consultants options to purchase an aggregate of 1,678,250 shares under its equity compensation plans at an exercise price of $3.59 per share.

In fiscal year 2015, the Registrant granted to its director, employees and consultants options to purchase an aggregate of 113,925 shares under its equity compensation plans at an exercise price of $21.83 per share.

Option grants, restricted stock unit grants and the issuances of common stock upon exercise of such options were exempt pursuant to Rule 701, Regulation D and Section 4(a)(2) of the Securities Act.

Item 16. Exhibits and Financial Statement Schedules

Reference is herein made to the attached Exhibit Index, which is incorporated herein by reference.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(a) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions referenced in Item 14 of this registration statement, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered hereunder, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(b) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Exhibit Number	Description
1.1	Form of Underwriting Agreement
3.1****	Amended and Restated Certificate of Incorporation
3.2*****	Amended and Restated Bylaws, as amended
5.1	Opinion of Jones Day
10.1*	Management Services Agreement between Cellectis S.A., Cellectis, Inc. and Calyxt, Inc., dated as of January 1, 2016
10.2****	Management Services Agreement Amendment dated July 25, 2017 between Cellectis S.A. and Calyxt, Inc.
10.3****	Separation Agreement dated July 25, 2017 between Cellectis S.A. and Calyxt, Inc.
10.4****	Stockholders Agreement dated July 25, 2017 between Cellectis S.A. and Calyxt, Inc.
10.4.1*****	Amendment No. 1 to Stockholders Agreement, dated May 7, 2018 between Cellectis S.A. and Calyxt, Inc.
10.5****	License Agreement dated July 25, 2017 between Cellectis S.A. and Calyxt, Inc.
10.6**#	Exclusive Patent License Agreement between Regents of the University of Minnesota and Calyxt Inc. (f.k.a. Cellectis Plant Sciences, Inc.), dated December 15, 2014
10.7**#	Commercial License Agreement between Two Blades Foundation and Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.), dated December 9, 2014
10.8**#	First Amendment to the Commercial License Agreement between Two Blades Foundation and Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.), dated December 1, 2016
10.9**#	Letter Agreement between Two Blades Foundation and Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.), dated December 31, 2015
10.10**#	Exclusive License Agreement between Plant Bioscience Limited and Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.), dated April 25, 2015
10.11*	Calyxt, Inc. Equity Incentive Plan
10.12*	Form of Stock Option Agreement pursuant to the Calyxt, Inc. Equity Incentive Plan
10.13*	Offer Letter between Calyxt, Inc. and Federico A. Tripodi, dated May 6, 2016

Exhibit Number	Description
10.14****	Offer Letter between Calyxt, Inc. and Manoj Sahoo, dated February 3, 2017
10.15*	Consulting Agreement between Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.) and Daniel Voytas, dated January 1, 2010
10.16*	Amendment 1 to Consulting Agreement between Calyxt, Inc. (f.k.a. Cellectis Plant Sciences, Inc.) and Daniel Voytas, dated December 21, 2012
10.17**	Calyxt, Inc. 2017 Omnibus Incentive Plan
10.18**	Calyxt, Inc. 2017 Stock Option Sub-Plan for French Employees and Directors
10.19**	Form of Stock Option Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan
10.20**	Form of Restrictive Stock Unit Agreement pursuant to the Calyxt, Inc. 2017 Omnibus Incentive Plan
10.21**	Form of Resolution with regard to the Grant of Warrants to purchase shares of Cellectis S.A.
10.22**	Calyxt, Inc. 2017 Restricted Stock Unit Sub-Plan for French Employees and Directors
10.23***	Lease Agreement between Calyxt, Inc., as Tenant, and NLD Mount Ridge LLC, as Landlord, dated September 6, 2017
10.24****	Form of Indemnification Agreement
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Jones Day (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature page to this registration statement)

* Previously filed as an exhibit to the Registration Statement on Form S-1 filed by the Company on June 23, 2017.
** Previously filed as an exhibit to the Registration Statement on Form S-1 filed by the Company on July 3, 2017.
*** Previously filed as an exhibit to the Current Report on Form 8-K filed by the Company on September 7, 2017.
**** Previously filed as an exhibit to the Annual Report on Form 10-K filed by the Company on March 14, 2018.
***** Previously filed as an exhibit to the Quarterly Report on Form 10-Q filed by the Company on May 7, 2018.
# Confidential treatment has been granted for certain information contained in this exhibit. Such information has been omitted and filed separately with the Securities and Exchange Commission.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in New Brighton, State of Minnesota, on the 15th day of May, 2018.

CALYXT, INC.

By: /s/ Federico A. Tripodi
Name: Federico A. Tripodi
Title: Chief Executive Officer

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Federico A. Tripodi and Bryan W. J. Corkal each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement and any and all additional registration statements pursuant to Rule 462(b) of the Securities Act of 1933, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agents full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or their or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Federico A. Tripodi Federico A. Tripodi	Chief Executive Officer (principal executive officer)	May 15, 2018
/s/ Bryan W. J. Corkal Bryan W. J. Corkal	Chief Financial Officer (principal financial and accounting officer)	May 15, 2018
/s/ André Choulika André Choulika	Chairman	May 15, 2018
/s/ Philippe Dumont Philippe Dumont	Director	May 15, 2018
/s/ Alain Godard Alain Godard	Director	May 15, 2018
/s/ Anna Ewa Kozicz-Stankiewicz Anna Ewa Kozicz-Stankiewicz	Director	May 15, 2018
/s/ Laurent Arthaud Laurent Arthaud	Director	May 15, 2018

Exhibit 1.1

CALYXT, INC.

(a Delaware corporation)

[•] Shares of Common Stock

UNDERWRITING AGREEMENT

Dated: May [•], 2018

Exhibit 1.1

CALYXT, INC.

(a Delaware corporation)

[•] Shares of Common Stock

UNDERWRITING AGREEMENT

May [•], 2018

Citigroup Global Markets Inc.
Goldman Sachs & Co. LLC
Jefferies LLC
as Representatives of the several Underwriters
named on Schedule A hereto

c/o Citigroup Global Markets Inc.
388 Greenwich Street,
New York, New York 10013

c/o Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282-2198

c/o Jefferies LLC
520 Madison Avenue
New York, New York 10022

Ladies and Gentlemen:

Calyxt, Inc. (the "Company"), a Delaware corporation and subsidiary of Cellectis S.A., a *société anonyme* incorporated in the French Republic ("Parent"), confirms its agreement with Citigroup Global Markets Inc. ("Citigroup"), Goldman Sachs & Co. LLC and Jefferies LLC ("Jefferies") and each of the other Underwriters named in Schedule A hereto (collectively, the "Underwriters," which term shall also include any underwriter substituted as hereinafter provided in Section 10 hereof), for whom Citigroup, Goldman Sachs & Co. LLC and Jefferies are acting as representatives (in such capacity, the "Representatives"), with respect to (i) the sale by the Company and the purchase by the Underwriters, acting severally and not jointly, of an aggregate of [•] shares of Common Stock, par value $0.0001 per share, of the Company ("Common Stock"), as set forth in Schedule A hereto, and (ii) the grant by the Company to the Underwriters, acting severally and not jointly, of the option described in Section 2(b) hereof to purchase all or any part of [•] additional shares of Common Stock from the Company. [In the same offering, the Company is also selling [•] shares of Common Stock to Parent as set forth in Schedule A hereto (the "Parent Securities").][1] The aforesaid [•] shares of Common Stock (the "Initial Securities") to be purchased by the Underwriters and all or any part of the [•] shares of Common Stock subject to the option described in Section 2(b) hereof (the "Option Securities") [, along with the Parent Securities] are herein called, collectively, the "Securities."

1 To be included if CLLS participates.

The Company understands that the Underwriters propose to make a public offering of the Securities as soon as the Representatives deem advisable after this Agreement has been executed and delivered.

The Company has filed with the Securities and Exchange Commission (the "Commission") a registration statement on Form S-1 (No. 333-[•]), including the related preliminary prospectus or prospectuses, covering the registration of the sale of the Securities under the Securities Act of 1933, as amended (the "1933 Act"). Promptly after execution and delivery of this Agreement, the Company will prepare and file a prospectus in accordance with the provisions of Rule 430A ("Rule 430A") of the rules and regulations of the Commission under the 1933 Act (the "1933 Act Regulations") and Rule 424(b) ("Rule 424(b)") of the 1933 Act Regulations. The information included in such prospectus that was omitted from such registration statement at the time such registration statement became effective but that is deemed to be part of such registration statement at the time it became effective pursuant to Rule 430A(b) is herein called the "Rule 430A Information." Such registration statement, including the amendments thereto, the exhibits thereto and any schedules thereto, and the documents incorporated by reference therein pursuant to Item 12 of Form S-1 under the 1933 Act, at the time it became effective, and including the Rule 430A Information, is herein called the "Registration Statement." Any registration statement filed pursuant to Rule 462(b) of the 1933 Act Regulations is herein called the "Rule 462(b) Registration Statement" and, after such filing, the term "Registration Statement" shall include the Rule 462(b) Registration Statement. Each prospectus used prior to the effectiveness of the Registration Statement, and each prospectus that omitted the Rule 430A Information that was used after such effectiveness and prior to the execution and delivery of this Agreement, including the documents incorporated by reference therein pursuant to Item 12 of Form S-1 under the 1933 Act, is herein called a "preliminary prospectus." The final prospectus, in the form first furnished to the Underwriters for use in connection with the offering of the Securities, including the documents incorporated by reference therein pursuant to Item 12 of Form S-1 under the 1933 Act, is herein called the "Prospectus." For purposes of this Agreement, all references to the Registration Statement, any preliminary prospectus, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval system or any successor system ("EDGAR").

As used in this Agreement:

"Applicable Time" means [•] P.M., New York City time, on May [•], 2018 or such other time as agreed by the Company and the Representatives.

"General Disclosure Package" means any Issuer General Use Free Writing Prospectuses issued at or prior to the Applicable Time, the most recent preliminary prospectus (including any documents incorporated therein by reference) that is distributed to investors prior to the Applicable Time and the information included on Schedule B-1 hereto, all considered together.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433 of the 1933 Act Regulations ("Rule 433"), including without limitation any "free writing prospectus" (as defined in Rule 405 of the 1933 Act Regulations ("Rule 405")) relating to the Securities that is (i) required to be filed with the Commission by the Company, (ii) a "road show that is a written communication" within the meaning of Rule 433(d)(8)(i), whether or not required to be filed with the Commission, or (iii) exempt from filing with the Commission pursuant to Rule 433(d)(5)(i) because it contains a description of the Securities or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g).

"Issuer General Use Free Writing Prospectus" means any Issuer Free Writing Prospectus that is intended for general distribution to prospective investors, as evidenced by its being specified in Schedule B-2 hereto.

"Issuer Limited Use Free Writing Prospectus" means any Issuer Free Writing Prospectus that is not an Issuer General Use Free Writing Prospectus.

"Testing-the-Waters Communication" means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the 1933 Act.

"Written Testing-the-Waters Communication" means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the 1933 Act.

All references in this Agreement to financial statements and schedules and other information which is "contained," "included" or "stated" in the Registration Statement, any preliminary prospectus or the Prospectus (or other references of like import) shall include all such financial statements and schedules and other information which is incorporated by reference in or otherwise deemed by 1933 Act Regulations to be a part of or included in the Registration Statement, any preliminary prospectus or the Prospectus, as the case may be, prior to the execution and delivery of this Agreement; and all references in this Agreement to amendments or supplements to the Registration Statement, any preliminary prospectus or the Prospectus shall include the filing of any document under the Securities Exchange Act of 1934, as amended (the "1934 Act"), which is incorporated by reference in or otherwise deemed by 1933 Act Regulations to be a part of or included in the Registration Statement, such preliminary prospectus or the Prospectus, as the case may be, at or after the execution and delivery of this Agreement.

SECTION 1. Representations and Warranties.

(a) *Representations and Warranties by the Company*. The Company represents and warrants to each Underwriter as of the date hereof, the Applicable Time, the Closing Time (as defined below) and any Date of Delivery (as defined below), and agrees with each Underwriter, as follows:

(i) Registration Statement and Prospectuses. Each of the Registration Statement and any amendment thereto has become effective under the 1933 Act. No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued by the Commission under the 1933 Act, no order preventing or suspending the use of any preliminary prospectus or the Prospectus has been issued by the Commission and no proceedings for any of those purposes have been instituted by the Commission or are pending or, to the knowledge of the Company, contemplated by the Commission. The Company has complied with each request (if any) from the Commission for additional information.

The Registration Statement and any post-effective amendment thereto, at the time it became effective, complied in all material respects with the applicable requirements of the 1933 Act and the 1933 Act Regulations. Each preliminary prospectus, the Prospectus and any amendment or supplement thereto, at the time each was filed with the Commission, complied in all material respects with the applicable requirements of the 1933 Act and the 1933 Act Regulations. Each preliminary prospectus delivered to the Underwriters for use in connection with this offering and the Prospectus was or will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

The documents incorporated or deemed to be incorporated by reference in the Registration Statement, any preliminary prospectus and the Prospectus, at the time they were or hereafter are filed with the Commission, complied and will comply in all material respects with the requirements of the 1934 Act and the rules and regulations of the Commission under the 1934 Act (the "1934 Act Regulations").

(ii) Accurate Disclosure. Neither the Registration Statement nor any amendment thereto, at its effective time, at the Closing Time or at any Date of Delivery, contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Applicable Time, none of (A) the General Disclosure Package, (B) any individual Issuer Limited Use Free Writing Prospectus, when considered together with the General Disclosure Package and (C) any individual Written Testing-the-Waters Communication, when considered together with the General Disclosure Package, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. Neither the Prospectus nor any amendment or supplement thereto (including any prospectus wrapper), as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b), at the Closing Time or at any Date of Delivery, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, at the time the Registration Statement became effective or when such documents incorporated by reference were filed with the Commission, as the case may be, when read together with the other information in the Registration Statement, the General Disclosure Package or the Prospectus, as the case may be, did not and will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

The representations and warranties in this subsection shall not apply to statements in or omissions from the Registration Statement (or any amendment thereto), the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) made in reliance upon and in conformity with written information furnished to the Company by any Underwriter through the Representatives expressly for use therein. For purposes of this Agreement, the only information so furnished shall be the information relating to concessions in the first paragraph under the heading "Underwriting–Commissions and Discounts," the information in the second, third and fourth paragraphs under the heading "Underwriting–Price Stabilization and Short Positions" and the information under the heading "Underwriting–Electronic Distribution" in each case contained in such Registration Statement, General Disclosure Package or the Prospectus (collectively, the "Underwriter Information").

(iii) Forward-Looking Statements. Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the 1933 Act or Section 21E of the 1934 Act) contained in the Registration Statement, the General Disclosure Package or the Prospectus, including any document incorporated by reference therein, (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement.

(iv) Issuer Free Writing Prospectuses. No Issuer Free Writing Prospectus conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any document incorporated by reference therein, and any preliminary or other prospectus deemed to be a part thereof that has not been superseded or modified.

(v) Testing-the-Waters Materials. The Company (A) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of the Representatives with entities that are qualified institutional buyers within the meaning of Rule 144A under the 1933 Act or institutions that are accredited investors within the meaning of Rule 501 under the 1933 Act and (B) has not authorized anyone other than the Representatives to engage in Testing-the-Waters Communications. The Company reconfirms that the Representatives have been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed or approved for distribution any Written Testing-the-Waters Communications other than those listed on Schedule B-3 hereto.

(vi) Company Not Ineligible Issuer. At the time of filing the Registration Statement and any post-effective amendment thereto, at the earliest time thereafter that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) of the 1933 Act Regulations) of the Securities and at the date hereof, the Company was not and is not an "ineligible issuer," as defined in Rule 405, without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an ineligible issuer.

(vii) Emerging Growth Company Status. From the time of the initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged directly or through any Person authorized to act on its behalf in any Testing-the-Waters Communication) through the date hereof, the Company has been and is an "emerging growth company," as defined in Section 2(a) of the 1933 Act (an "Emerging Growth Company").

(viii) Independent Accountants. To the knowledge of the Company, the accountants who certified the financial statements and supporting schedules included in the Registration Statement, the General Disclosure Package and the Prospectus are independent public accountants as required by the 1933 Act, the 1933 Act Regulations and the Public Company Accounting Oversight Board.

(ix) Financial Statements; Non-GAAP Financial Measures. The financial statements included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, together with the related schedules, if any, and notes present fairly in all material respects the financial position of the Company at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company for the periods specified; said financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("GAAP") applied on a consistent basis throughout the periods involved. The supporting schedules, if any, present fairly in all material respects in accordance with GAAP the information required to be stated therein. The selected financial data and the summary financial information included in the Registration Statement, the General Disclosure Package and the Prospectus present fairly the information shown therein and have been compiled on a basis consistent with that of the audited financial statements included therein. Except as included therein, no historical or pro forma financial statements or supporting schedules are required to be included or incorporated by reference in the Registration Statement, the General Disclosure Package or the Prospectus under the 1933 Act or the 1933 Act Regulations or the 1934

Act or the 1934 Act Regulations. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(x) No Material Adverse Change in Business. Except as otherwise stated therein, since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, (A) there has been no material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company, whether or not arising in the ordinary course of business (a "Material Adverse Effect"), (B) there have been no transactions entered into by the Company, other than those in the ordinary course of business, which are material with respect to the Company, and (C) there has been no dividend or distribution of any kind declared, paid or made by the Company on any class of its capital stock.

(xi) Good Standing of the Company. The Company has been duly organized and is validly existing as a corporation in good standing under the laws of the state of Delaware and has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package and the Prospectus and to enter into and perform its obligations under this Agreement; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to be so qualified or to be in good standing would not result in a Material Adverse Effect. The Company does not have any subsidiaries.

(xii) Capitalization. The authorized, issued and outstanding shares of capital stock of the Company are as set forth in the Registration Statement, the General Disclosure Package and the Prospectus in the column entitled "Actual" under the caption "Capitalization" (except for subsequent issuances, if any, pursuant to this Agreement, pursuant to reservations, agreements or employee benefit plans referred to in the Registration Statement, the General Disclosure Package and the Prospectus or pursuant to the exercise of convertible securities or options referred to in the Registration Statement, the General Disclosure Package and the Prospectus). The outstanding shares of capital stock of the Company have been duly authorized and validly issued and are fully paid and non-assessable. None of the outstanding shares of capital stock of the Company were issued in violation of preemptive or other similar rights of any securityholder of the Company.

(xiii) Authorization of this Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(xiv) Authorization and Description of Securities. The Securities to be purchased by the Underwriters from the Company have been duly authorized for issuance and sale to the Underwriters pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement against payment of the consideration set forth herein, will be validly issued and fully paid and non-assessable; and the issuance of the Securities is not subject to preemptive or other similar rights of any securityholder of the Company. The Common Stock conforms to all statements relating thereto contained in the Registration Statement, the General Disclosure Package and the Prospectus and such description conforms in all material respects to the rights set forth in the instruments defining the same. No holder of Securities will be subject to personal liability by reason of being such a holder.

(xv) Registration Rights. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, there are no persons with registration rights or other similar rights to have any securities registered for sale pursuant to the Registration Statement or otherwise registered for sale or sold by the Company under the 1933 Act pursuant to this Agreement.

(xvi) Absence of Violations, Defaults and Conflicts. The Company is not (A) in violation of its charter, by-laws or similar organizational document, (B) in default (or with the giving of notice or lapse of time would be in default) in the performance or observance of any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company is a party or by which it or any of them may be bound or to which any of the properties or assets of the Company is subject (collectively, "Agreements and Instruments"), except for such defaults that would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect, or (C) in violation of any applicable law, statute, rule, regulation, judgment, order, writ or decree of any arbitrator, court, governmental body, regulatory body, administrative agency or other authority, body or agency having jurisdiction over the Company or any of its properties, products, product candidates, assets or operations, including the U.S. Food and Drug Administration ("FDA"), the United States Department of Agriculture ("USDA"), the United States Department of Health and Human Services ("HHS"), the European Commission, the European Medicines Agency (the "EMA"), the Competent Authorities of the Member States of the European Economic Area, or other comparable federal, state, local or foreign governmental and regulatory authorities (each, a "Governmental Entity"), except for such violations that would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. The execution, delivery and performance of this Agreement and the consummation of the transactions contemplated herein and in the Registration Statement, the General Disclosure Package and the Prospectus (including the issuance and sale of the Securities and the use of the proceeds from the sale of the Securities as described therein under the caption "Use of Proceeds") and compliance by the Company with its obligations hereunder have been duly authorized by all necessary corporate action and do not and will not, whether with or without the giving of notice or passage of time or both, conflict with or constitute a breach of, or default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any properties or assets of the Company pursuant to, the Agreements and Instruments (except for such conflicts, breaches, defaults or Repayment Events or liens, charges or encumbrances that would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect), nor will such action result in (A) any violation of the provisions of the charter, by-laws or similar organizational document of the Company or (B) the violation of any applicable law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Entity, except with respect to clause (B), such violations as would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. As used herein, a "Repayment Event" means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company.

(xvii) Absence of Labor Dispute. No labor dispute with the employees of the Company exists or, to the knowledge of the Company, is imminent, and to the knowledge of the Company, there are no existing or imminent labor disturbances by the employees of any of its principal suppliers, manufacturers, customers or contractors, which, in either case, would reasonably be expected to result in a Material Adverse Effect.

(xviii) Absence of Proceedings. There is no action, suit, proceeding, inquiry or investigation before or brought by any Governmental Entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company, which would reasonably be expected to result in a Material Adverse Effect, or which would reasonably be expected to materially and adversely affect their respective properties or assets or the consummation of the transactions contemplated in this Agreement or the performance by the Company of its obligations hereunder; and the aggregate of all pending legal or governmental proceedings to which the Company is a party or of which any of their respective properties or assets is the subject which are not described in the Registration Statement, the General Disclosure Package and the Prospectus, including ordinary routine litigation incidental to the business, would not reasonably be expected to result in a Material Adverse Effect.

(xix) Accuracy of Exhibits. There are no contracts or documents which are required to be described in the Registration Statement, the General Disclosure Package or the Prospectus or to be filed as exhibits to the Registration Statement which have not been so described in all material respects and filed as required.

(xx) Absence of Further Requirements. No filing with, or authorization, approval, consent, license, order, registration, qualification or decree of, any Governmental Entity is necessary or required for the performance by the Company of its obligations hereunder, in connection with the offering, issuance or sale of the Securities hereunder or the consummation of the transactions contemplated by this Agreement, except such as have been already obtained or as may be required under the 1933 Act, the 1933 Act Regulations, the rules of the Nasdaq Global Market, state securities laws or the rules of FINRA.

(xxi) Possession of Licenses and Permits. The Company possesses and is operating in compliance with such permits, licenses, franchises, exemptions, approvals, certifications, clearances, consents and other authorizations (collectively, "Governmental Licenses") issued by the appropriate Governmental Entities necessary to conduct the business now operated by it and as described in the Registration Statement, the General Disclosure Package and the Prospectus. All such Government Licenses are in full force and effect, except where the failure of such Governmental Licenses to be in full force and effect would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. To the Company's knowledge, the Company has fulfilled and performed all of its material obligations with respect to the Governmental Licenses, and no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination of such Governmental Licenses.

(xxii) Compliance with Regulatory Laws. The Company: (A) is and at all times has been in material compliance with all applicable statutes, rules or regulations of the Governmental Entities applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product candidate under development, manufactured or distributed by the Company ("Applicable Laws"), including, without limitation, the Federal Food, Drug and Cosmetic Act (21 U.S.C. § 301 et seq.) and the Plant Protection Act (7 U.S.C. § 7701 et seq.); (B) has not received any correspondence or notice from any Governmental Entity or court of competent jurisdiction alleging or asserting material noncompliance with any Applicable Laws or any Governmental Licenses; (C) possesses all material Governmental Licenses and such Governmental Licenses are valid and in full force and effect and the Company is not in material violation of any term of any such Governmental Licenses; (D) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any Governmental Entity or third party alleging that any product development activity is in

material violation of any Applicable Laws or Governmental Licenses and has no knowledge that any Governmental Entity or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E) has not received notice that any Governmental Entity has taken, is taking or intends to take action to suspend or revoke any material Governmental Licenses and has no knowledge that any Governmental Entity is considering such action; and (F) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Governmental Licenses and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission).

(xxiii) Title to Property. The Company has good and marketable title to all real property owned by them and good title to all other properties owned by them (excluding for the purpose of this Section 1(a)(xxiii), Intellectual Property, as defined below), in each case, free and clear of all mortgages, pledges, liens, security interests, claims, restrictions or encumbrances of any kind except such as (A) are described in the Registration Statement, the General Disclosure Package and the Prospectus or (B) do not, singly or in the aggregate, materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company; and all of the leases and subleases material to the business of the Company, and under which the Company holds properties described in the Registration Statement, the General Disclosure Package or the Prospectus, are in full force and effect, and the Company does not have any notice of any claim of any sort that has been asserted by anyone adverse to the rights of the Company under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company to the continued possession of the leased or subleased premises under any such lease or sublease, except to the extent that any claim or adverse effect on the Company's rights thereto would not reasonably be expected to have a Material Adverse Effect.

(xxiv) Intellectual Property. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus (A) the Company owns or otherwise possesses, holds or has obtained valid and enforceable licenses or other rights or believes that it can on commercially reasonable terms obtain such licenses or other rights under patent applications, patents, inventions, copyrights, know how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks (both registered and unregistered), service marks, trade names, software, domain names and other intellectual property, including registrations and applications for registration thereof (collectively, "Intellectual Property") used in or necessary to carry on the business now operated by the Company and as currently proposed to be operated by it as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, except as such failure to own or obtain such licenses or other rights would not reasonably be expected to result in a Material Adverse Effect; (B) to the knowledge of the Company, none of the Intellectual Property described in the Registration Statement, the General Disclosure Package and the Prospectus as owned by or licensed to the Company (collectively, the "Company Intellectual Property") has been adjudged invalid or unenforceable, in whole or in part; (C) there is no currently pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others challenging the validity, enforceability or scope of, or challenging the Company's ownership of or rights in or to, any Company Intellectual Property, and the Company is not aware of any facts or circumstances that would render any Company Intellectual Property invalid or unenforceable, or of inadequate scope to protect the interests of the Company in conducting its business, except in each case, as would not reasonably be expected to result in a Material Adverse Effect; (D) there is no currently

pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by a third party alleging that the Company infringes, misappropriates, or otherwise violates, or would, upon commercialization of any product candidate described in the Registration Statement, the General Disclosure Package and the Prospectus, infringe, misappropriate or otherwise violate, any Intellectual Property of third parties, and the Company has not received any notice alleging, or is otherwise aware of, any facts or circumstances that would give rise to such an action, proceeding or claim, except, in each case, where such infringement, misappropriation or other violation would not reasonably be expected to result in a Material Adverse Effect; (E) to the knowledge of the Company, no material technology employed by the Company has been obtained or is being used by the Company in violation of any contractual or legal obligation binding on the Company or any of its officers, directors or employees, which violation relates to the breach of a confidentiality obligation, obligation to assign Intellectual Property to a previous employer or obligation otherwise not to use the Intellectual Property of a third party.

(xxv) Environmental Laws. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus or as would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect, (A) the Company is not in violation of any applicable federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products, asbestos-containing materials or mold (collectively, "Hazardous Materials") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "Environmental Laws"), (B) the Company has all permits, authorizations and approvals required under any applicable Environmental Laws and are each in compliance with their requirements, (C) there are no pending or, to the knowledge of the Company, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigations or proceedings relating to any Environmental Law against the Company and (D) to the knowledge of the Company, there are no events or circumstances that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or Governmental Entity, against or affecting the Company relating to Hazardous Materials or any Environmental Laws.

(xxvi) Accounting Controls and Disclosure Controls. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, the Company maintains a system of internal accounting controls (as designed in Rule 13a-15(f) of the 1934 Act) sufficient to provide reasonable assurance that (A) transactions are executed in accordance with management's general or specific authorization; (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (C) access to assets is permitted only in accordance with management's general or specific authorization; (D) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (E) the interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, since the end of

the Company's most recent audited fiscal year, there has been (1) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (2) no change in the Company's internal control over financial reporting that has materially adversely affected, or is reasonably likely to materially adversely affect, the Company's internal control over financial reporting.

The Company maintains an effective system of disclosure controls and procedures (as defined in Rule 13a-15 and Rule 15d-15 under the 1934 Act Regulations) that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the 1934 Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, and is accumulated and communicated to the Company's management, including its principal executive officer or officers and principal financial officer or officers, as appropriate, to allow timely decisions regarding disclosure.

(xxvii) Compliance with the Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act").

(xxviii) Payment of Taxes. All United States federal income tax returns of the Company required by law to be filed have been filed and all taxes shown by such returns or otherwise assessed, which are due and payable, have been paid, except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided. The Company has filed all other material tax returns that are required to have been filed by it pursuant to applicable national, provincial, local and non-U.S. tax law, and has paid all material taxes due pursuant to such returns or pursuant to any assessment received by the Company, including any interest, fees or penalties, except for such taxes or assessments, if any, as are being contested in good faith and as to which adequate reserves have been established by the Company. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not reasonably be expected to result in a Material Adverse Effect.

(xxix) Insurance. The Company carries or is entitled to the benefits of insurance, with reputable insurers, in such amounts and covering such risks as is generally maintained by companies of established repute and of comparable size engaged in the same or similar business, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (A) to renew its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to result in a Material Adverse Effect. The Company has not been denied any insurance coverage which it has sought or for which it has applied.

(xxx) ERISA Compliance. Each "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "ERISA")) for which the Company or its "ERISA Affiliates" (as defined below) would have any liability (each, a "Plan") has been maintained in compliance in all material respects with its terms and with the requirements of all applicable statutes, rules and regulations, including ERISA and the Code. "ERISA Affiliate" means, with respect to the Company, any member of any group of organizations described in

Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (collectively, the "Code") of which the Company is a member. No Plan is, and none of the Company or any of its ERISA Affiliates (as defined below) has within the past six years sponsored, maintained, participated in, contributed to, or had any obligation (contingent or otherwise) with respect to any (A) "multiemployer plan" within the meaning of Section 3(37) of ERISA, (B) pension plan subject to Title IV or Part 3 of Title I of ERISA or Section 412 of the Code, (C) "multiple employer plan" within the meaning of Section 413(c) of the Code or (D) multiple employer welfare arrangement within the meaning of Section 3(40) of ERISA. None of the Company or any of its ERISA Affiliates has incurred or reasonably expects to incur any liability under Sections 412, 4971, 4975 or 4980B of the Code. No prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred, excluding transactions effected pursuant to a statutory or administrative exemption. Each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification. There is no pending audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other governmental agency or any foreign regulatory agency with respect to any Plan that could reasonably be expected to result in material liability to the Company.

(xxxi) Investment Company Act. The Company is not required, and upon the issuance and sale of the Securities as herein contemplated and the application of the net proceeds therefrom as described in the Registration Statement, the General Disclosure Package and the Prospectus will not be required, to register as an "investment company" under the Investment Company Act of 1940, as amended.

(xxxii) Absence of Manipulation. Neither the Company nor, to the knowledge of the Company, any affiliate of the Company has taken, nor will the Company or any affiliate controlled by the Company take, directly or indirectly, any action which is designed, or would reasonably be expected, to cause or result in, or which constitutes, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities or to result in a violation of Regulation M under the 1934 Act.

(xxxiii) Foreign Corrupt Practices Act. None of the Company or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or authorized representative of the Company is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (the "FCPA"), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any "foreign official" (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA and the Company and, to the knowledge of the Company, its affiliates have conducted their businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(xxxiv) Money Laundering Laws. The operations of the Company are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Entity (collectively, the "Money Laundering Laws"); and no action, suit or proceeding by or before any Governmental Entity involving the Company with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(xxxv) No Conflicts with Sanctions Laws. None of the Company or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or authorized representative of the Company is an individual or entity ("Person") currently the subject or target of any sanctions administered or enforced by the United States Government, including, without limitation, the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC"), the United Nations Security Council, the European Union, Her Majesty's Treasury, or other relevant sanctions authority (collectively, "Sanctions"), nor is the Company located, organized or resident in a country or territory that is the subject of Sanctions; and the Company will not directly or indirectly use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any joint venture partners or other Person, to fund any activities of or business with any Person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or in any other manner that will result in a violation by any Person (including any Person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions.

(xxxvi) Lending Relationship. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, the Company (i) does not have any material lending or other relationship with any bank or lending affiliate of any Underwriter and (ii) does not intend to use any of the proceeds from the sale of the Securities to repay any outstanding debt owed to any affiliate of any Underwriter.

(xxxvii) No Finder's Fee. There are no contracts, agreements or understandings between the Company and any person (other than this Agreement) that would give rise to a valid claim against the Company or any Underwriter for a brokerage commission, finder's fee or other like payment in connection with the issuance and sale of the Securities.

(xxxviii) Statistical and Market-Related Data. Any statistical and market-related data included in the Registration Statement, the General Disclosure Package or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate and, to the extent required, the Company has obtained the written consent to the use of such data from such sources

(xxxix) Incorporation of Documents by Reference. The Company meets the requirements to incorporate documents by reference in the Registration Statement pursuant to General Instruction VII to Form S-1 under the 1933 Act and the 1933 Act Regulations.

(b) *Officer's Certificates*. Any certificate signed by any officer of the Company delivered to the Representatives or to counsel for the Underwriters shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

SECTION 2. Sale and Delivery to Underwriters; Closing.

(a) *Initial Securities*. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, the Company agrees to sell to each Underwriter, severally and not jointly, and each Underwriter, severally and not jointly, agrees to purchase from the Company, at the price per share set forth in Schedule A, that number of Initial Securities set forth in Schedule A opposite the name of such Underwriter, plus any additional number of Initial Securities which such Underwriter may become obligated to purchase pursuant to the provisions of Section 10 hereof, subject, in each case, to such adjustments among the Underwriters as the Representatives in their sole discretion shall make to eliminate any sales or purchases of fractional shares.

(b) *Option Securities*. In addition, on the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, the Company hereby grants an option to the Underwriters, severally and not jointly, to purchase up to an additional [•] shares of Common Stock, at the price per share set forth in Schedule A. The option hereby granted may be exercised for 30 days after the date hereof and may be exercised in whole or in part at any time from time to time upon notice by the Representatives to the Company setting forth the number of Option Securities as to which the several Underwriters are then exercising the option and the time and date of payment and delivery for such Option Securities. Any such time and date of delivery (a "Date of Delivery") shall be determined by the Representatives, but shall not be later than seven full business days after the exercise of said option, nor earlier than two full business days (unless delivery of the Option Securities is to occur concurrently with the delivery of the Initial Securities at the Closing Time (defined below), except as otherwise agreed by the Representatives and the Company, nor in any event prior to the Closing Time. If the option is exercised as to all or any portion of the Option Securities, each of the Underwriters, acting severally and not jointly, will purchase that proportion of the total number of Option Securities then being purchased which the number of Initial Securities set forth in Schedule A opposite the name of such Underwriter bears to the total number of Initial Securities, subject, in each case, to such adjustments as the Representatives in their sole discretion shall make to eliminate any sales or purchases of fractional shares.

(c) *Payment*. Payment of the purchase price for, and delivery of certificates or security entitlements for, the Initial Securities shall be made at the offices of Davis Polk & Wardwell LLP, 450 Lexington Avenue, New York, New York, 10017, or at such other place as shall be agreed upon by the Representatives and the Company, at 9:00 A.M. (New York City time) on the second (third, if the pricing occurs after 4:30 P.M. (New York City time) on any given day) business day after the date hereof (unless postponed in accordance with the provisions of Section 10), or such other time not later than ten business days after such date as shall be agreed upon by the Representatives and the Company (such time and date of payment and delivery being herein called "Closing Time").

In addition, in the event that any or all of the Option Securities are purchased by the Underwriters, payment of the purchase price for, and delivery of certificates or security entitlements for, such Option Securities shall be made at the above-mentioned offices, or at such other place as shall be agreed upon by the Representatives and the Company, on each Date of Delivery as specified in the notice from the Representatives to the Company.

Payment shall be made to the Company by wire transfer of immediately available funds to a bank account designated by the Company against delivery to the Representatives for the respective accounts of the Underwriters of certificates or security entitlements for the Securities to be purchased by them. It is understood that each Underwriter has authorized the Representatives, for its account, to accept delivery of, receipt for, and make payment of the purchase price for, the Initial Securities and the Option Securities, if any, which it has agreed to purchase. The Representatives, individually and not as representative of the Underwriters, may (but shall not be obligated to) make payment of the purchase price for the Initial Securities or the Option Securities, if any, to be purchased by any Underwriter whose funds have not been received by the Closing Time or the relevant Date of Delivery, as the case may be, but such payment shall not relieve such Underwriter from its obligations hereunder.

SECTION 3. Covenants of the Company. The Company covenants with each Underwriter as follows:

(a) *Compliance with Securities Regulations and Commission Requests*. The Company, subject to Section 3(b), will comply with the requirements of Rule 430A, and will notify the Representatives as soon as practicable, and confirm the notice in writing (which may be in electronic form), (i) when any post-effective amendment to the Registration Statement shall become effective or any amendment or supplement to the Prospectus shall have been filed, (ii) of the receipt of any comments from the Commission, (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information, (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment or of any order preventing or suspending the use of any preliminary prospectus or the Prospectus, or of the suspension of the qualification of the Securities for offering or sale in any jurisdiction, or of the initiation or threatening of any proceedings for any of such purposes or of any examination pursuant to Section 8(d) or 8(e) of the 1933 Act concerning the Registration Statement and (v) if the Company becomes the subject of a proceeding under Section 8A of the 1933 Act in connection with the offering of the Securities. The Company will effect all filings required under Rule 424(b), in the manner and within the time period required by Rule 424(b) (without reliance on Rule 424(b)(8)), and will take such steps as it deems reasonably necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company will make every reasonable effort to prevent the issuance of any stop order, prevention or suspension and, if any such order is issued, to obtain the lifting thereof as soon as practicable.

(b) *Continued Compliance with Securities Laws*. The Company will comply with the 1933 Act and the 1933 Act Regulations so as to permit the completion of the distribution of the Securities as contemplated in this Agreement and in the Registration Statement, the General Disclosure Package and the Prospectus. If at any time when a prospectus relating to the Securities is (or, but for the exception afforded by Rule 172 of the 1933 Act Regulations ("Rule 172"), would be) required by the 1933 Act to be delivered in connection with sales of the Securities, any event shall occur or condition shall exist as a result of which it is necessary, in the opinion of counsel for the Underwriters or for the Company, to (i) amend the Registration Statement in order that the Registration Statement will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) amend or supplement the General Disclosure Package or the Prospectus in order that the General Disclosure Package or the Prospectus, as the case may be, will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein not misleading in the light of the circumstances existing at the time it is delivered to a purchaser or (iii) amend the Registration Statement or amend or supplement the General Disclosure Package or the Prospectus, as the case may be, in order to comply with the requirements of the 1933 Act or the 1933 Act Regulations, the Company will promptly (A) give the Representatives notice of such event, (B) prepare any amendment or supplement as may be necessary to correct such untrue statement or omission or to make the Registration Statement, the General Disclosure Package or the Prospectus comply with such requirements and, a reasonable amount of time prior to any proposed filing or use, furnish the Representatives with copies of any such amendment or supplement and (C) file with the Commission any such amendment or supplement; provided that the Company shall not file or use any such amendment or supplement to which the Representatives or counsel for the Underwriters shall object. The Company will furnish to the Underwriters such number of copies of such amendment or supplement as the Underwriters may reasonably request. The Company will give the Representatives notice of its intention to make any filing pursuant to the 1934 Act or the 1934 Act Regulations from the Applicable Time to the Closing Time and will furnish the Representatives with copies of any such documents a reasonable amount of time prior to such proposed filing, as the case may be, and will not file or use any such document to which the Representatives or counsel for the Underwriters shall reasonably object.

(c) *Delivery of Registration Statements*. The Company has furnished or will deliver to the Representatives and counsel for the Underwriters, without charge, copies of the Registration Statement as originally filed and each amendment thereto (including exhibits filed therewith or incorporated by reference therein and documents incorporated or deemed to be incorporated by reference therein) and copies of all consents and certificates of experts, and will also deliver to the Representatives, without charge, a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits) for each of the Underwriters, in each case, if requested by the Representatives. The copies of the Registration Statement and each amendment thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(d) *Delivery of Prospectuses*. The Company has delivered to each Underwriter, without charge, as many copies of each preliminary prospectus as such Underwriter reasonably requested, and the Company hereby consents to the use of such copies for purposes permitted by the 1933 Act. The Company will furnish to each Underwriter, without charge, during the period when a prospectus relating to the Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the 1933 Act, such number of copies of the Prospectus (as amended or supplemented) as such Underwriter may reasonably request. The Prospectus and any amendments or supplements thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(e) *Blue Sky Qualifications*. The Company will use its reasonable best efforts, in cooperation with the Underwriters, to qualify the Securities for offering and sale under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Representatives may reasonably designate and to maintain such qualifications in effect so long as required to complete the distribution of the Securities; provided, however, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject.

(f) *Rule 158*. The Company will timely file such reports pursuant to the 1934 Act as are necessary in order to make generally available to its securityholders as soon as practicable an earnings statement for the purposes of, and to provide to the Underwriters the benefits contemplated by, the last paragraph of Section 11(a) of the 1933 Act.

(g) *Use of Proceeds*. The Company will use the net proceeds received by it from the sale of the Securities in accordance with the use of proceeds specified in the Registration Statement, the General Disclosure Package and the Prospectus under the heading “Use of Proceeds.”

(h) *Listing*. The Company will use its reasonable best efforts to effect and maintain the listing of the Securities on the Nasdaq Global Market.

(i) *Restriction on Sale of Securities*. During a period of 90 days from the date of the Prospectus, the Company will not, without the prior written consent of the Representatives, (i) directly or indirectly, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or file any registration statement under the 1933 Act with respect to any of the foregoing or (ii)

enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the Common Stock, whether any such swap or transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash or otherwise. The foregoing sentence shall not apply to (A) the Securities to be sold hereunder, (B) any shares of Common Stock issued by the Company upon the exercise of an option or warrant or the conversion of a security outstanding on the date hereof and referred to in the Registration Statement, the General Disclosure Package and the Prospectus, (C) any shares of Common Stock issued or options to purchase Common Stock granted pursuant to existing employee benefit plans of the Company referred to in the Registration Statement, the General Disclosure Package and the Prospectus, (D) any shares of Common Stock issued pursuant to any non-employee director stock plan or dividend reinvestment plan referred to in the Registration Statement, the General Disclosure Package and the Prospectus, (E) shares of Common Stock or other securities issued by the Company in connection with joint ventures, commercial relationships or other strategic transactions, *provided* that (x) the aggregate number of securities issued pursuant to this clause (E) shall not exceed 7.5% of the total number of outstanding shares of Common Stock immediately following the issuance and sale of the shares of Common Stock at the Closing Time pursuant hereto and (y) such securities issued pursuant to this clause (E) during the 90-day restricted period described above shall be subject to the restrictions described in Exhibit B for the remainder of such restricted period and the recipient of any such securities shall enter into an agreement substantially in the form of Exhibit B attached hereto, (F) shares sold to Cellectis in connection with the vesting of equity compensation awards, or (G) the filing by the Company of a registration statement on Form S-8 covering the registration of securities issued under existing employee benefit plans of the Company referred to in the Registration Statement, the General Disclosure Package and the Prospectus.

(j) *Reporting Requirements*. The Company, during the period when a Prospectus relating to the Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the 1933 Act, will file all documents required to be filed with the Commission pursuant to the 1934 Act within the time periods required by the 1934 Act and 1934 Act Regulations.

(k) *Issuer Free Writing Prospectuses*. The Company agrees that, unless it obtains the prior written consent of the Representatives, it will not make any offer relating to the Securities that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a “free writing prospectus,” or a portion thereof, required to be filed by the Company with the Commission or retained by the Company under Rule 433; provided that the Representatives will be deemed to have consented to the Issuer Free Writing Prospectuses listed on Schedule B-2 hereto and any “road show that is a written communication” within the meaning of Rule 433(d)(8)(i) that has been reviewed by the Representatives. The Company represents that it has treated or agrees that it will treat each such free writing prospectus consented to, or deemed consented to, by the Representatives as an “issuer free writing prospectus,” as defined in Rule 433, and that it has complied and will comply with the applicable requirements of Rule 433 with respect thereto, including timely filing with the Commission where required, legending and record keeping. If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement, any preliminary prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

(l) *Testing-the-Waters Materials*. If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

(m) *Copies of Reports and Communications*. During a period of five years from the effective date of the Registration Statement, the Company agrees to furnish to the Representatives and, upon request, to each of the other Underwriters a copy of its annual report to shareholders, and to deliver to the Representatives (i) as soon as they are available, copies of any reports and financial statements furnished to or filed with the Commission or mailed to shareholders and (ii) such additional information concerning the business and financial condition of the Company as the Representatives may from time to time reasonably request (such financial statements to be on a consolidated basis to the extent the accounts of the Company are consolidated in reports furnished to its shareholders generally or to the Commission); provided, however, so long as the Company is subject to the reporting requirements of either Section 13 or Section 15(d) of the 1934 Act and is timely filing reports with the Commission on its EDGAR reporting system, it is not required to furnish such reports, statements or additional information to the Underwriters.

SECTION 4. Payment of Expenses.

(a) *Expenses*. The Company will pay or cause to be paid all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, printing and filing of the Registration Statement (including financial statements and exhibits) as originally filed and each amendment thereto, (ii) the preparation, printing and delivery to the Underwriters of copies of each preliminary prospectus, each Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto and any costs associated with electronic delivery of any of the foregoing by the Underwriters to investors, (iii) the preparation, issuance and delivery of the certificates or security entitlements for the Securities to the Underwriters, including any stock or other transfer taxes and any stamp or other duties payable upon the sale, issuance or delivery of the Securities to the Underwriters, (iv) the fees and disbursements of the Company's counsel, accountants and other advisors, (v) the qualification of the Securities under securities laws in accordance with the provisions of Section 3(e) hereof, including filing fees and the reasonable fees and disbursements of counsel for the Underwriters in connection therewith and in connection with the preparation of the Blue Sky Survey and any supplement thereto, (vi) the fees and expenses of any transfer agent or registrar for the Securities, (vii) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the Securities, including without limitation, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations, travel and lodging expenses of the representatives and officers of the Company and any such consultants (*provided* that the travel and lodging expenses of any representatives of the Underwriters shall be paid by the Underwriters), (viii) the filing fees incident to, and the reasonable fees and disbursements of counsel to the Underwriters in connection with, the review by FINRA of the terms of the sale of the Securities, *provided* that the amount payable by the Company pursuant to clause (v) above and this clause (viii), excluding requisite filing fees, shall not exceed $25,000, (ix) the fees and expenses incurred in connection with the listing of the Securities on the Nasdaq Global Market and (x) the costs and expenses (including, without limitation, any damages or other amounts payable in connection with legal or contractual liability, but without duplication of any such amounts paid pursuant to Section 6 hereof) associated with the reforming of any contracts for sale of the Securities made by the Underwriters caused by a breach of the representation contained in the third sentence of Section 1(a)(ii).

(b) *Termination of Agreement*. If this Agreement is terminated by the Representatives in accordance with the provisions of Section 5, Section 9(a)(i) or (iii) or Section 10 hereof, the Company shall reimburse the Underwriters for all of their reasonable, documented out-of-pocket expenses, including the reasonable fees and disbursements of counsel for the Underwriters, provided however, that if this Agreement is terminated pursuant to Section 10, the Company shall only be required to reimburse such costs, expenses, fees and disbursements of the Underwriters that have not failed to purchase the Securities that they have agreed to purchase hereunder.

SECTION 5. Conditions of Underwriters' Obligations. The obligations of the several Underwriters hereunder are subject to the accuracy of the representations and warranties of the Company contained herein or in certificates of any officer of the Company delivered pursuant to the provisions hereof, to the performance by the Company of their covenants and other obligations hereunder, and to the following further conditions:

(a) *Effectiveness of Registration Statement; Rule 430A Information*. The Registration Statement, including any Rule 462(b) Registration Statement, has become effective and, at the Closing Time, no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the 1933 Act, no order preventing or suspending the use of any preliminary prospectus or the Prospectus has been issued by the Commission and no proceedings for any of those purposes have been instituted by the Commission or are pending or, to the knowledge of the Company, contemplated by the Commission; and the Company has complied with each request (if any) from the Commission for additional information. A prospectus containing the Rule 430A Information shall have been filed with the Commission in the manner and within the time frame required by Rule 424(b) without reliance on Rule 424(b)(8) or a post-effective amendment providing such information shall have been filed with, and declared effective by, the Commission in accordance with the requirements of Rule 430A.

(b) *Opinion of Counsel for Company*. At the Closing Time, the Representatives shall have received the opinion, dated the Closing Time, of Jones Day, counsel for the Company, together with signed or reproduced copies of such letter for each of the other Underwriters, to the effect set forth in Exhibit A-1 hereto.

(c) *Opinion of Intellectual Property Counsel of Parent*. At the Closing Time, the Representatives shall have received the opinion, dated the Closing Time, of Sylvain Espinasse, as intellectual property counsel of Parent, substantially in the form of Exhibit A-2 hereto.

(d) *Opinion of Intellectual Property Counsel for Company.* At the Closing Time, the Representatives shall have received an opinion, dated the Closing Time, of Fish & Richardson P.C., intellectual property counsel for the Company, in form and substance reasonably satisfactory to counsel for the Underwriters.

(e) *Opinion of Counsel for Underwriters.* At the Closing Time, the Representatives shall have received the opinion, dated the Closing Time, of Davis Polk & Wardwell LLP, counsel for the Underwriters, together with signed or reproduced copies of such letter for each of the other Underwriters in form and substance satisfactory to the Representatives.

(f) *Officer's Certificate*. At the Closing Time, there shall not have been, since the date hereof or since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, any material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company, whether or not arising in the ordinary course of business, and the Representatives shall have received a certificate of the Chief Executive Officer or the Chief Financial Officer of the Company, dated the Closing Time, to the effect that (i) there has been no such material adverse change, (ii) the representations and warranties of the Company in this Agreement are true and correct with the same force and effect as though expressly made at and as of the Closing Time, (iii) the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied at or prior to the Closing Time, and (iv) no stop order suspending the effectiveness of the Registration Statement under the 1933 Act has been issued by the Commission, no order preventing or suspending the use of any preliminary prospectus or the Prospectus has been issued by the Commission and no proceedings for any of those purposes have been instituted by the Commission or are pending or, to their knowledge, contemplated by the Commission.

(g) *Accountant's Comfort Letter*. At the time of the execution of this Agreement, the Representatives shall have received from Ernst & Young a letter, dated such date, in form and substance satisfactory to the Representatives, together with signed or reproduced copies of such letter for each of the other Underwriters containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement, the General Disclosure Package and the Prospectus.

(h) *Bring-down Comfort Letter*. At the Closing Time, the Representatives shall have received from Ernst & Young a letter, dated as of the Closing Time, to the effect that they reaffirm the statements made in the letter furnished pursuant to subsection (g) of this Section, except that the specified date referred to shall be a date not more than three business days prior to the Closing Time.

(i) *Approval of Listing*. At the Closing Time, the Securities shall have been approved, to the extent necessary, for listing on the Nasdaq Global Market, subject only to official notice of issuance.

(j) *No FINRA Objection*. FINRA has confirmed that it has not raised any objection with respect to the fairness and reasonableness of the underwriting terms and arrangements relating to the offering of the Securities.

(k) *Lock-up Agreements*. At the date of this Agreement, the Representatives shall have received an agreement substantially in the form of Exhibit B hereto signed by the persons listed on Schedule C hereto.

(l) *Conditions to Purchase of Option Securities*. In the event that the Underwriters exercise their option provided in Section 2(b) hereof to purchase all or any portion of the Option Securities, the representations and warranties of the Company contained herein and the statements in any certificates furnished by the Company hereunder shall be true and correct as of each Date of Delivery and, at the relevant Date of Delivery, the Representatives shall have received:

(i) Officer's Certificate of the Company. A certificate, dated such Date of Delivery, of the Chief Executive Officer or of the Chief Financial Officer of the Company confirming that the certificate delivered at the Closing Time pursuant to Section 5(f) hereof remains true and correct as of such Date of Delivery.

(ii) Opinion of Counsel for Company. If requested by the Representatives, the opinion of Jones Day, counsel for Company, dated such Date of Delivery, relating to the Option Securities to be purchased on such Date of Delivery and otherwise to the same effect as the opinion required by Section 5(b) hereof.

(iii) Opinion of Intellectual Property Counsel of Parent. If requested by the Representatives, the opinion of Sylvain Espinasse, as intellectual property counsel of Parent, in form and substance reasonably satisfactory to counsel for the Underwriters, dated such Date of Delivery, relating to the Option Securities to be purchased on such Date of Delivery and otherwise to the same effect as the opinion required by Section 5(c) hereof.

(iv) Opinion of Intellectual Property Counsel of Company. If requested by the Representatives, the opinion of Fish & Richardson P.C., intellectual property counsel for the Company, in form and substance reasonably satisfactory to counsel for the Underwriters, dated such Date of Delivery, relating to the Option Securities to be purchased on such Date of Delivery and otherwise to the same effect as the opinion required by Section 5(d) hereof.

(v) Opinion of Counsel for Underwriters. If requested by the Representatives, the opinion of Davis Polk & Wardwell LLP, counsel for the Underwriters, dated such Date of Delivery, relating to the Option Securities to be purchased on such Date of Delivery and otherwise to the same effect as the opinion required by Section 5(e) hereof.

(vi) Bring-down Comfort Letter. If requested by the Representatives, a letter from Ernst & Young, in form and substance satisfactory to the Representatives and dated such Date of Delivery, substantially in the same form and substance as the letter furnished to the Representatives pursuant to Section 5(h) hereof, except that the "specified date" in the letter furnished pursuant to this paragraph shall be a date not more than three business days prior to such Date of Delivery.

(m) *Additional Documents*. At the Closing Time and at each Date of Delivery (if any) counsel for the Underwriters shall have been furnished with such additional customary documents as they may reasonably require for the purpose of enabling them to pass upon the issuance and sale of the Securities as herein contemplated, or in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the conditions, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Securities as herein contemplated shall be satisfactory in form and substance to the Representatives and counsel for the Underwriters. The Company will furnish the Representatives with such conformed copies of such documents as the Representatives reasonably request.

(n) *Termination of Agreement*. If any condition specified in this Section shall not have been fulfilled when and as required to be fulfilled, this Agreement, or, in the case of any condition to the purchase of Option Securities on a Date of Delivery which is after the Closing Time, the obligations of the several Underwriters to purchase the relevant Option Securities, may be terminated by the Representatives by notice to the Company at any time at or prior to Closing Time or such Date of Delivery, as the case may be, and such termination shall be without liability of any party to any other party except as provided in Section 4 and except that Sections 1, 6, 7, 8, 14, 15 and 16 shall survive any such termination and remain in full force and effect.

SECTION 6. Indemnification.

(a) *Indemnification of Underwriters by Company*. The Company agrees to indemnify and hold harmless each Underwriter, its directors, officers, employees and affiliates (as such term is defined in Rule 501(b) under the 1933 Act (each, an "Affiliate")), its selling agents and each person, if any, who controls any Underwriter within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, arising out of any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), including the Rule 430A Information, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading or arising out of any untrue statement or alleged untrue statement of a material fact included (A) in any preliminary prospectus, any Issuer Free Writing Prospectus, any Written Testing-the-Waters Communication, the General Disclosure Package or the Prospectus (or any amendment or supplement thereto), or (B) in any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Securities ("Marketing Materials"), including any roadshow or investor presentations made to investors by the Company (whether in person or electronically), or the omission or alleged omission in any preliminary prospectus, Issuer Free Writing Prospectus, any Written Testing-the-Waters Communication, Prospectus or in any Marketing Materials of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 6(d) below) any such settlement is effected with the written consent of the Company;

(iii) against any and all expense whatsoever, as incurred (including the reasonable fees and disbursements of counsel chosen by the Representatives), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above;

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made in the Registration Statement (or any amendment thereto), including the Rule 430A Information, the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with the Underwriter Information.

(b) *Indemnification of Company, Directors and Officers*. Each Underwriter severally agrees to indemnify and hold harmless the Company, their directors, each of their respective officers who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act, against any and all loss, liability, claim, damage and expense described in the indemnity contained in subsection (a) of this Section, as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendment thereto), including the Rule 430A Information, the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with the Underwriter Information.

(c) *Actions against Parties; Notification*. Each indemnified party shall give notice as promptly as reasonably practicable to each indemnifying party of any action commenced against it in respect of which indemnity may be sought hereunder, but failure to so notify an indemnifying party shall not relieve such indemnifying party from any liability hereunder to the extent it is not materially prejudiced as a result thereof and in any event shall not relieve it from any liability which it may have otherwise than on account of this indemnity agreement. In the case of parties indemnified pursuant to Section 6(a) above, counsel to the indemnified parties shall be selected by the Representatives, and, in the case of parties indemnified pursuant to Section 6(b) above, counsel to the indemnified parties shall be selected by the Company. An indemnifying party may participate at its own expense in the defense of any such action; provided, however, that counsel to the indemnifying party shall not (except with the consent of the indemnified party) also be counsel to the indemnified party. In no event shall the indemnifying parties be liable for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. No indemnifying party shall, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever in respect of which indemnification or contribution could be sought under this Section 6 or Section 7 hereof (whether or not the indemnified parties are actual or potential parties thereto), unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) *Settlement without Consent if Failure to Reimburse*. If at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 6(a)(ii) effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (ii) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (iii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

SECTION 7. Contribution. If the indemnification provided for in Section 6 hereof is for any reason unavailable to or insufficient to hold harmless an indemnified party in respect of any losses, liabilities, claims, damages or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount of such losses, liabilities, claims, damages and expenses incurred by such indemnified party, as incurred, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, from the offering of the Securities pursuant to this Agreement or (ii) if the allocation provided by clause (i) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and of the Underwriters, on the other hand, in connection with the statements or omissions which resulted in such losses, liabilities, claims, damages or expenses, as well as any other relevant equitable considerations.

The relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, in connection with the offering of the Securities pursuant to this Agreement shall be deemed to be in the same respective proportions as the total net proceeds from the offering of the Securities pursuant to this Agreement (before deducting expenses (other than underwriting discounts and commissions)) received by the Company, on the one hand, and the total underwriting discount received by the Underwriters, on the other hand, in each case as set forth on the cover of the Prospectus, bear to the aggregate initial public offering price of the Securities as set forth on the cover of the Prospectus.

The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or by the Underwriters and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 7 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to above in this Section 7. The aggregate amount of losses, liabilities, claims, damages and expenses incurred by an indemnified party and referred to above in this Section 7 shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue or alleged untrue statement or omission or alleged omission.

Notwithstanding the provisions of this Section 7, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by such Underwriter in connection with the Shares underwritten by it and distributed to the public.

No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 1933 Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

For purposes of this Section 7, each person, if any, who controls an Underwriter within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act and each Underwriter's Affiliates and selling agents shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act shall have the same rights to contribution as the Company. The Underwriters' respective obligations to contribute pursuant to this Section 7 are several in proportion to the number of Initial Securities set forth opposite their respective names in Schedule A hereto and not joint.

SECTION 8. Representations, Warranties and Agreements to Survive. All representations, warranties and agreements contained in this Agreement or in certificates of officers of the Company submitted pursuant hereto, shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of any Underwriter or its Affiliates or selling agents, any person controlling any Underwriter, its officers or directors or any person controlling the Company and (ii) delivery of and payment for the Securities.

SECTION 9. Termination of Agreement.

(a) *Termination*. The Representatives may terminate this Agreement, by notice to the Company, at any time at or prior to the Closing Time (i) if there has been, in the judgment of the Representatives, since the time of execution of this Agreement or since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, any material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company, whether or not arising in the ordinary course of business, or (ii) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political,

financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Representatives, impracticable or inadvisable to proceed with the completion of the offering or to enforce contracts for the sale of the Securities, or (iii) if trading in any securities of the Company has been suspended or materially limited by the Commission or the Nasdaq Global Market, or (iv) if trading generally on the NYSE MKT or the New York Stock Exchange or in the Nasdaq Global Market has been suspended or materially limited, or minimum or maximum prices for trading have been fixed, or maximum ranges for prices have been required, by any of said exchanges or by order of the Commission, FINRA or any other governmental authority, or (v) a material disruption has occurred in commercial banking or securities settlement or clearance services in the United States or with respect to Clearstream or Euroclear systems in Europe, or (vi) if a banking moratorium has been declared by either Federal or New York authorities.

(b) *Liabilities*. If this Agreement is terminated pursuant to this Section, such termination shall be without liability of any party to any other party except as provided in Section 4 hereof, and provided further that Sections 1, 6, 7, 8, 14, 15 and 16 shall survive such termination and remain in full force and effect.

SECTION 10. Default by One or More of the Underwriters. If one or more of the Underwriters shall fail at the Closing Time or a Date of Delivery to purchase the Securities which it or they are obligated to purchase under this Agreement (the "Defaulted Securities"), the Representatives shall have the right, within 24 hours thereafter, to make arrangements for one or more of the non-defaulting Underwriters, or any other underwriters, to purchase all, but not less than all, of the Defaulted Securities in such amounts as may be agreed upon and upon the terms herein set forth; if, however, the Representatives shall not have completed such arrangements within such 24-hour period, then:

(i) if the number of Defaulted Securities does not exceed 10% of the number of Securities to be purchased on such date, each of the non-defaulting Underwriters shall be obligated, severally and not jointly, to purchase the full amount thereof in the proportions that their respective underwriting obligations hereunder bear to the underwriting obligations of all non-defaulting Underwriters, or

(ii) if the number of Defaulted Securities exceeds 10% of the number of Securities to be purchased on such date, this Agreement or, with respect to any Date of Delivery which occurs after the Closing Time, the obligation of the Underwriters to purchase, and the Company to sell, the Option Securities to be purchased and sold on such Date of Delivery shall terminate without liability on the part of any non-defaulting Underwriter.

No action taken pursuant to this Section shall relieve any defaulting Underwriter from liability in respect of its default.

In the event of any such default which does not result in a termination of this Agreement or, in the case of a Date of Delivery which is after the Closing Time, which does not result in a termination of the obligation of the Underwriters to purchase and the Company to sell the relevant Option Securities, as the case may be, either the (i) Representatives or (ii) the Company shall have the right to postpone Closing Time or the relevant Date of Delivery, as the case may be, for a period not exceeding seven days in order to effect any required changes in the Registration Statement, the General Disclosure Package or the Prospectus or in any other documents or arrangements. As used herein, the term "Underwriter" includes any person substituted for an Underwriter under this Section 10.

SECTION 11. Notices. All notices and other communications hereunder shall be in writing and shall be deemed to have been duly given if mailed or transmitted by any standard form of telecommunication. Notices to the Underwriters shall be directed to the Representatives c/o Citigroup Global Markets Inc. at 388 Greenwich Street, New York, New York 10013, Attention: General Counsel (fax: (646) 291-1469); c/o Goldman Sachs & Co. LLC at 200 West Street, New York, New York 10282, Attention: Registration Department (fax: (212) 902-9316); and c/o Jefferies LLC at 520 Madison Avenue, New York, New York 10022, Attention: General Counsel (fax: (646) 619-4437); notices to the Company shall be directed to it at 600 County Road D West, Suite 8, New Brighton, Minnesota 55112, attention of Chief Executive Officer; notices to Parent shall be directed to it at 8 rue de la Croix Jarry, Paris, Ile-de-France, 75013 France, Attn: General Counsel.

SECTION 12. No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (a) the purchase and sale of the Securities pursuant to this Agreement, including the determination of the initial public offering price of the Securities and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other hand, (b) in connection with the offering of the Securities and the process leading thereto, each Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (c) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to the offering of the Securities or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) and no Underwriter has any obligation to the Company with respect to the offering of the Securities except the obligations expressly set forth in this Agreement, (d) the Underwriters and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company and (e) the Underwriters have not provided any legal, accounting, regulatory or tax advice with respect to the offering of the Securities and the Company has consulted its own respective legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

SECTION 13. Parties. This Agreement shall each inure to the benefit of and be binding upon the Underwriters and the Company and their respective successors. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, firm or corporation, other than the Underwriters and the Company and their respective successors and the controlling persons and officers and directors referred to in Sections 6 and 7 and their heirs and legal representatives, any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision herein contained. This Agreement and all conditions and provisions hereof are intended to be for the sole and exclusive benefit of the Underwriters and the Company and their respective successors, and said controlling persons and officers and directors and their heirs and legal representatives, and for the benefit of no other person, firm or corporation. No purchaser of Securities from any Underwriter shall be deemed to be a successor by reason merely of such purchase.

SECTION 14. Trial by Jury. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates) and each of the Underwriters hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

SECTION 15. GOVERNING LAW. THIS AGREEMENT AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF, THE STATE OF NEW YORK WITHOUT REGARD TO ITS CHOICE OF LAW PROVISIONS.

SECTION 16. Consent to Jurisdiction; Waiver of Immunity. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby shall be instituted in (i) the federal courts of the United States of America located in the City and County of New York, Borough of Manhattan or (ii) the courts of the State of New York located in the City and County of New York, Borough of Manhattan (collectively, the "Specified Courts"), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court, as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party's address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

SECTION 17. TIME. TIME SHALL BE OF THE ESSENCE OF THIS AGREEMENT. EXCEPT AS OTHERWISE SET FORTH HEREIN, SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME.

SECTION 18. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same Agreement.

SECTION 19. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction hereof.

If the foregoing is in accordance with your understanding of our agreement, please sign and return to the Company a counterpart hereof, whereupon this instrument, along with all counterparts, will become a binding agreement among the Underwriters and the Company in accordance with its terms.

Very truly yours,

CALYXT, INC.

By _____
Title:

CONFIRMED AND ACCEPTED,
as of the date first above written:

By: Citigroup Global Markets Inc.

By: _____
Name:
Title:

By: Goldman Sachs & Co. LLC

By: _____
Name:
Title:

By: Jefferies LLC

By: _____
Name:
Title:

For themselves and as Representatives of the other Underwriters named in Schedule A hereto.

SCHEDULE A

The initial public offering price per share for the Securities shall be $[•].

The purchase price per share for the Securities to be paid by the several Underwriters shall be $[•], being an amount equal to the initial public offering price set forth above less $[•] per share.

Name of Underwriter	Number of Initial Securities
Citigroup Global Markets Inc.	[•]
Goldman Sachs & Co. LLC	[•]
Jefferies LLC	[•]
Wells Fargo Securities, LLC	[•]
BMO Capital Markets Corp.	[•]
Total	[•]

[In the same offering, Parent is purchasing [•] shares of Common Stock from the Company at a purchase price of [•] per share.]

SCHEDULE B-1

Pricing Terms

1. The Company is selling [•] shares of Common Stock[, including [•] shares purchased by Parent directly from the Company].

2. The Company has granted an option to the Underwriters, severally and not jointly, to purchase up to an additional [•] shares of Common Stock.

3. The initial public offering price per share for the Securities shall be $[•].

4. Net proceeds to the Company for (i) the Initial Securities after underwriting discounts and commissions [and (ii) the Parent Securities] are $[•].

SCHEDULE B-2

Free Writing Prospectuses

1. [Issuer Free Writing Prospectus dated [•], 2018, filed pursuant to Rule 433 of the Securities Act of 1933]

SCHEDULE B-3

Testing-the-Waters Communications

1. Presentation used by the Company in February 2018
2. Presentation used by the Company in May 2018

SCHEDULE C

List of Persons and Entities Subject to Lock-up

Cellectis S.A.
André Choulika
Philippe Dumont
Alain Godard
Anna Ewa Kozicz-Stankiewicz
Laurent Arthaud
Federico A. Tripodi
Bryan W. J. Corkal
Dan Voytas
Manoj Sahoo
Glenn Bowers
Michel Arbadji

Exhibit B

[Form of lock-up from directors, officers or other stockholders pursuant to Section 5(k)]

May 15, 2018

Citigroup Global Markets Inc.
Goldman Sachs & Co. LLC
Jefferies LLC
as Representatives of the several Underwriters
named on Schedule A to the Underwriting Agreement

c/o Citigroup Global Markets Inc.
388 Greenwich Street
New York, New York 10013

c/o Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282

c/o Jefferies LLC
520 Madison Avenue
New York, New York 10022

Re: Proposed Public Offering by Calyxt, Inc.

Ladies and Gentlemen:

The undersigned, a stockholder or officer and/or director of Calyxt, Inc., a Delaware corporation (the "Company"), understands that Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Jefferies LLC (collectively, the "Representatives") propose to enter into an Underwriting Agreement (the "Underwriting Agreement") with the Company providing for the public offering of shares of the Company's common stock, par value $0.0001 per share (the "Common Stock"). In recognition of the benefit that such an offering will confer upon the undersigned as a stockholder or officer and/or director of the Company, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned agrees with each underwriter to be named in the Underwriting Agreement that, during the period beginning on the date hereof and ending on the date that is 90 days from the date of the Underwriting Agreement, the undersigned will not, without the prior written consent of the Representatives, (i) directly or indirectly, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of the Company's Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (collectively, the "Lock-Up Securities"), or exercise any right with respect to the registration of any of the Lock-up Securities, or file or cause to be filed any registration statement in connection therewith, under the Securities Act of 1933, as amended, or (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the Lock-Up Securities, whether any such swap or transaction is to be settled by delivery of Common Stock or other securities, in cash or otherwise.

Notwithstanding the foregoing, and subject to the conditions below, the undersigned may transfer the Lock-Up Securities without the prior written consent of the Representatives, provided that (1) the Representatives receive a signed lock-up agreement for the balance of the lockup period from each donee, trustee, distributee, or transferee, as the case may be, (2) any such transfer shall not involve a disposition for value, (3) such transfers are not required to be reported with the Securities and Exchange Commission on Form 4 in accordance with Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and (4) the undersigned does not otherwise voluntarily effect any public filing or report regarding such transfers:

(i) as a *bona fide* gift or gifts; or

(ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned (for purposes of this lock-up agreement, "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin); or

(iii) to a member of the immediate family of the undersigned; or

(iv) to a corporation, partnership, limited liability company or other entity of which the undersigned and the immediate family of the undersigned are the direct or indirect legal and beneficial owners of all the outstanding equity securities or similar interests of such corporation, partnership, limited liability company or other entity; or

(v) by will or intestate succession upon the death of the undersigned; or

(vi) by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement; or

(vii) as a distribution to limited partners or stockholders of the undersigned; or

(viii) to the undersigned's affiliates or to any investment fund or other entity controlled or managed by the undersigned; or

(ix) to a nominee or custodian of a person or entity to whom disposition or transfer would be permissible under (i) – (viii) above.

Notwithstanding anything to the contrary, nothing in this agreement shall prohibit the undersigned from:

(i) (a) entering into a written plan meeting the requirements of Rule 10b5-1 under the Exchange Act relating to the sale of securities of the Company (a "10b5-1 Plan"), *provided* that the securities subject to such plan may not be sold and no public disclosure of any such action shall be required or shall be voluntarily made by any person until after the expiration of the 90-day lock-up period or (b) transferring securities of the Company, including shares of Common Stock, pursuant to any existing 10b5-1 Plan that has been entered into by the undersigned prior to the date of this Lock-Up Agreement, *provided* that if the undersigned is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock, the undersigned shall include a statement in such report to the effect that such transfer is pursuant to an existing 10b5-1 Plan; or

(ii) exercising any stock option to purchase shares of Common Stock, or any securities convertible into or exercisable or exchangeable for Common Stock, or other similar awards granted on or prior to the date of the final prospectus relating to the Public Offering (the "Prospectus") or granted pursuant to the Company's equity incentive plans described in the Prospectus; *provided* that this lock-up agreement shall apply to any securities issued upon such exercise, except to the extent such securities are transferred pursuant to clause (i)(b) above; or

(iii) transferring (or, in the case of Cellectis, acquiring) shares of Common Stock or any securities convertible into or exercisable or exchangeable for shares of Common Stock from the undersigned (and, in the case of Cellectis, the acquisition thereof) to the Company or Cellectis (or (a) the purchase of the same by the Company or (b) the purchase of the same (directly or indirectly) by Cellectis) upon a vesting event of the Company's securities or upon the exercise of options to purchase shares of Common Stock, which options expire during the 90-day lock-up period, by the undersigned, in each case on a "cashless" or "net exercise" basis or to cover tax withholding obligations of the undersigned in connection with such vesting or exercise, whether by means of a "net settlement" or otherwise, in each case pursuant to employee benefit plans disclosed in the registration statement relating to the Public Offering; *provided* that if the undersigned is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock the undersigned shall include a statement in such report to the effect that such transfer is made for such purpose; or

(iv) transferring shares of Common Stock or any security convertible into or exercisable or exchangeable for shares of Common Stock that occurs by any order or settlement resulting from any legal proceeding pursuant to a qualified domestic order or in connection with a divorce settlement; *provided* that in the case of any transfer or distribution pursuant to this clause, any filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock shall state that such transfer is pursuant to an order of a court or a settlement resulting from a legal proceeding unless such a statement would be prohibited by any applicable law or order of a court; or

(v) if the undersigned is a corporation, partnership, limited liability company or other entity, transferring shares of Common Stock in connection with the sale or other bona fide transfer in a single transaction or all or substantially all of the undersigned's capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of the undersigned's assets, in any such case not undertaken for the purpose of avoiding the restrictions imposed by this agreement; *provided* that each transferee shall sign and deliver a lock-up letter substantially in the form of this letter; or

(vi) transferring shares of Common Stock or any security convertible into or exercisable or exchangeable for shares of Common Stock pursuant to an order of a court or regulatory agency; *provided* that each transferee shall sign and deliver a lock-up letter substantially in the form of this letter, unless prohibited by any applicable law or order of a court; and *provided further* that any filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock shall state that such transfer is pursuant to an order of a court or a settlement resulting from a legal proceeding unless such a statement would be prohibited by any applicable law or order of a court; or

(vii) transferring shares of Common Stock or any security convertible into or exercisable or exchangeable for shares of Common Stock after the date of the Prospectus pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the shares of Common Stock involving a change of control of the Company; *provided* that all of the undersigned's Common Stock subject to this lock-up agreement that are not so transferred, sold, tendered or otherwise disposed of remain subject to this lock-up agreement; *provided further* that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the shares of Common Stock owned by the undersigned shall remain subject to the restrictions contained in this letter agreement (for purposes hereof, "change of control" shall mean the transfer (whether by tender offer, merger, consolidation, or other similar transaction), in one transaction or a series of related transactions, to a person or a group of affiliated persons, of shares of capital stock if, after such transfer, such person or group of affiliated persons would hold more than 50% of the outstanding voting securities of the Company (or the surviving entity)).

Furthermore, the undersigned may sell shares of Common Stock of the Company purchased by the undersigned in the Public Offering or on the open market following the Public Offering if and only if (i) such sales are not required to be reported in any public report or filing with the Securities and Exchange Commission, or otherwise and (ii) the undersigned does not otherwise voluntarily effect any public filing or report regarding such sales in each case during the 90-day lock-up period.

The undersigned agrees that, prior to engaging in any transaction or taking any other action that is subject to the terms of this lock-up agreement during the 90-day lock-up period, it will give notice thereof to the Company and will not consummate such transaction or take any such action unless it has received written confirmation from the Company that the 90-day lock-up period has expired.

For the avoidance of doubt, nothing in this agreement shall prohibit or otherwise restrict the undersigned from filing any amendment or correction to any existing report filed under Section 16 of the Exchange Act.

Notwithstanding anything to the contrary contained herein, this agreement will automatically terminate and the undersigned will be released from all of his, her or its obligations hereunder upon the earliest to occur, if any, of (i) the Company advises the Representatives in writing that it has determined not to proceed with the Public Offering, (ii) the Company files an application with the U.S. Securities and Exchange Commission to withdraw the registration statement related to the Public Offering, (iii) the Underwriting Agreement is executed but is terminated (other than the provisions thereof which survive termination) prior to payment for and delivery of the Common Stock to be sold thereunder, or (iv) May 31, 2018, in the event that the Underwriting Agreement has not been executed by such date.

In furtherance of the foregoing, the Company, and any duly appointed transfer agent for the registration or transfer of the securities described herein, are hereby authorized to decline to make any transfer of securities if such transfer would constitute a violation or breach of this letter agreement.

Very truly yours,

Signature: _____

Print Name: _____

Exhibit 5.1

JONES DAY

250 VESEY STREET ● NEW YORK, NEW YORK 10281.1047
TELEPHONE: +1.212.326.3939 ● FACSIMILE: +1.212.755.7306

May 15, 2018

Calyxt, Inc.
600 County Road D.W., Suite 8
New Brighton, Minnesota 55112

Re: Registration Statement on Form S-1 Filed by Calyxt, Inc.

Ladies and Gentlemen:

We have acted as counsel for Calyxt, Inc., a Delaware corporation (the "Company"), in connection with the public offering and sale by the Company of up to 3,507,500 shares of common stock (the "Shares"), par value $0.0001 per share, pursuant to the Underwriting Agreement (the "Underwriting Agreement") proposed to be entered into by and among the Company and Citigroup Global Markets Inc., Goldman Sachs & Co. LLC and Jefferies LLC, acting as the representatives of the several underwriters to be named in Schedule A thereto.

In connection with the opinion expressed herein, we have examined such documents, records and matters of law as we have deemed relevant or necessary for purposes of such opinion. Based on the foregoing and subject to the further limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares, when issued and delivered pursuant to the Underwriting Agreement against payment of the consideration therefor as provided in the Underwriting Agreement, will be validly issued, fully paid and nonassessable.

The opinion expressed herein is limited to the General Corporation Law of the State of Delaware, as currently in effect, and we express no opinion as to the effect of the laws of any other jurisdiction on the opinion expressed herein.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement on Form S-1 (the "Registration Statement") filed by the Company to effect registration of the Shares under the Securities Act of 1933 (the "Act") and to the reference to Jones Day under the caption "Legal Matters" in the prospectus constituting a part of such Registration Statement. In giving such consent, we do not hereby admit that we are included in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ Jones Day

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form S-1) and related Preliminary Prospectus of Calyxt, Inc. and to the incorporation by reference therein of our report dated March 13, 2018, with respect to the financial statements of Calyxt, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2017, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Minneapolis, Minnesota
May 15, 2018