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

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from to

Commission file number 001-36783

Bellicum Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**20-1450200**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2130 W. Holcombe Blvd., Ste. 800, Houston, TX	**77030**
(Address of principal executive offices)	**(Zip Code)**

(832) 384-1100
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	**BLCM**	**The Nasdaq Global Market**

Securities registered pursuant to Section 12(g) of the Act: None

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No x

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No ☐

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	x
Non-accelerated filer	☐	Smaller reporting company	x
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No x

The approximate aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based upon the last sale price of the common stock reported on The Nasdaq Global Market as of June 30, 2019 was $68,256,666. Shares of Common Stock held by each officer and director and by each person who owns 5% or more of the outstanding Common Stock have been excluded from such calculation in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 28, 2020, there were 5,047,892 shares of the Registrant's common stock, par value $0.01 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive Proxy Statement relating to its 2020 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K. Such Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days following the Registrant's fiscal year ended

December 31, 2019.

BELLICUM PHARMACEUTICALS, INC.
Form 10-K
For the Fiscal Year Ended December 31, 2019

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the sections entitled “Business,” “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” may contain “forward-looking statements.” We may, in some cases, use words such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes to identify these forward-looking statements. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. Forward-looking statements in this Annual Report include, but are not limited to, statements about:

- the success, cost and timing of our product development activities and clinical trials;
- our ability to advance Chemical Induction of Dimerization, or CID, CID-based technologies, including CaspaCIDe and GoCAR-T;
- our ability to obtain and maintain regulatory approval of any of our product candidates, and any related restrictions, limitations and/or warnings in the label of an approved product candidate;
- our ability to obtain funding for our operations, including funding necessary to complete further development and commercialization of our product candidates;
- the commercialization of our product candidates, if approved;
- our plans to research, develop and commercialize our product candidates;
- our ability to attract collaborators with development, regulatory and commercialization expertise and the success of any such collaborations;
- future agreements with third parties in connection with the commercialization of our product candidates and any other approved product;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- the rate and degree of market acceptance of our product candidates;
- regulatory developments in the United States, or U.S., and foreign countries;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- our ability to grow our organization and increase the size of our facilities to meet our anticipated growth;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our use of cash and other resources; and
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates.

These forward-looking statements reflect our management’s beliefs and views with respect to future events and are based on estimates and assumptions as of the filing date of this Annual Report and are subject to risks and uncertainties. We discuss many of these risks in greater detail under the heading “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

You should carefully read this Annual Report and the documents that we reference in this Annual Report completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in this Annual Report by these cautionary statements.

Except as required by law, we undertake no obligation to update these forward-looking statements publicly, or to update the reasons that actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise.

Except as otherwise specifically indicated, all information in this Annual Report on Form 10-K has been retroactively adjusted to give effect to a 1-for-10 reverse stock-split that was effective on February 5, 2020.

ITEM 1. Business

Overview

We are a clinical stage biopharmaceutical company focused on discovering and developing novel, controllable cellular immunotherapies. We are designing new treatments for various forms of cancer, including both hematological cancers and solid tumors. We are advancing CAR-T and CAR-NK cell therapies which are an innovative approach in which a patient's or donor's T cells or NK cells, respectively, are genetically modified to carry chimeric antigen receptors, or CARs. We are using our proprietary Chemical Induction of Dimerization, or CID, technology platform to engineer our product candidates with switch technologies that are designed to control components of the immune system in real time. By incorporating our CID platform, our product candidates may offer better efficacy and safety outcomes than are seen with current cellular immunotherapies.

Cell behavior is controlled by cascades of specialized signaling proteins. CID consists of molecular switches, modified forms of these signaling proteins, which are triggered inside the patient by infusion of a small molecule, instead of by natural upstream signals. We genetically introduce these molecular switches into the appropriate immune cells and deliver the cells to the patient in the manner of conventional cellular immunotherapy. We have developed two such switches: an "activation switch," designed to stimulate activation, proliferation and persistence of the immunotherapy cells and provide other immunomodulatory benefits, and a "safety switch," designed to initiate programmed cell death, or apoptosis, of the immunotherapy cells. Each of our product candidates incorporates one or both switches, for enhanced, real time control of efficacy and safety:

- The inducible MyD88/CD40 (iMC) activation switch that is incorporated into our GoCAR product candidates is designed to enhance CAR-based cell therapies by augmenting multiple mechanisms of action, including: 1) boosting effector cell proliferation; 2) enhancing functional persistence by resisting exhaustion and inhibitory signals found in the tumor microenvironment; and 3) stimulating the cancer patient's own immune system to intensify tumor killing. Unlike other CAR therapies that can behave unpredictably due to their autonomous activity, GoCAR antitumor effects are controlled through scheduled administration of rimiducid. In the event of severe side effects, GoCAR activity can be attenuated by extending the interval between rimiducid doses or suspending further rimiducid administration.
- Our CaspaCIDe™ safety switch (also known as inducible Caspase-9, or iC9) is designed to be inactive unless the patient experiences a serious side effect (e.g., CRS or neurologic toxicities). In that event, rimiducid or temsirolimus is administered to induce Caspase-9 and eliminate the cells, with the goal of attenuating the therapy and resolving the serious side effect.
- Some of our product candidates are "dual-switch" GoCARs that are designed to provide a user-controlled system for managing proliferation, persistence and safety of tumor antigen-specific CAR cells by incorporating both our iMC and CaspaCIDe switches. We also have an active research effort to further develop and enhance these molecular switch approaches.

By incorporating our novel switch technologies, we are developing product candidates with the potential to elicit positive clinical outcomes and ultimately change the treatment paradigm in various areas of cellular immunotherapy. Our most advanced programs are described below.

- **BPX-601** is an autologous GoCAR-T product candidate containing our proprietary iMC activation switch, designed to treat solid tumors expressing prostate stem cell antigen, or PSCA. We believe iMC enhances T cell proliferation and persistence, enhances host immune activity, and modulates the tumor microenvironment to improve the potential to treat solid tumors compared to traditional CAR-T therapies. A Phase 1/2 clinical trial, called BP-012, in patients with pancreatic cancer expressing PSCA is ongoing.
- **BPX-603** is an autologous dual-switch GoCAR-T product candidate containing both the iMC activation and CaspaCIDe safety switches. BPX-603 is our first controllable dual-switch GoCAR-T product candidate and is designed to target solid tumors that express the human epidermal growth factor receptor 2 antigen, or HER2. We are conducting additional pre-clinical studies to support its Investigational New Drug, or IND application.
- **BCMA GoCAR-NK** is our first off-the-shelf, allogeneic GoCAR program. The GoCAR-NK program targets B-cell maturation antigen (BCMA) which is expressed by multiple myeloma cells. We recently initiated formal pre-clinical development activities for this program.

- **Rivo-cel (rivogenlecleucel, formerly known as BPX-501),** is a product candidate containing our proprietary CaspaCIDe safety switch that is intended to improve outcomes of hematopoietic stem cell transplantation in the treatment of hematologic malignancies and inherited blood disorders. We are pursuing a strategic partner for rivo-cel to assume future development and commercialization responsibilities. Concurrently, we have reduced and expect to continue to reduce our rivo-cel related activities.

We have developed efficient and scalable processes to manufacture genetically modified T cells of high quality, which are currently being used to generate products for our clinical trials. We are leveraging this know how in combination with our proprietary cellular control technologies, resources, capabilities and expertise for the manufacture of CAR product candidates to create and develop first and best-in-class product candidates.

Cellular Immunotherapy

Cellular immunotherapy harnesses immune cells to attack and eliminate harmful diseased cells in the body. The immune system is the body's defense network. It consists of a number of cells (e.g., leukocytes) and organs that, working together, recognize and respond to threats in the form of pathogens-modified or transformed cells. T cells are a type of white blood cell that recognize pathogens and can target and eliminate them upon full activation through the addition of appropriate co-stimulatory signals. NK cells, or natural killer cells, are a type of white blood cell that can target and eliminate pathogens in the absence of co-stimulatory signals.

CAR-T and CAR-NK approaches entail collecting a patient's or donor's T or NK cells, genetically modifying them ex vivo, or outside of the body, to incorporate specific receptors which target cancer cells and then infusing the modified cells into the patient. CARs are designed to target antigens on the surface of cancer cells. In early human clinical trials, CAR-T and CAR-NK cell therapies have demonstrated an unprecedented ability to achieve complete responses in some hematological cancers, even in patients who have suffered multiple relapses.

While high objective response rates have been reported in some hematological malignancies, CAR cells have shown modest durability in those cancers. Further, CAR therapy has shown limited clinical efficacy in solid tumors. This is likely due to poor proliferation and persistence of these cells and to immune suppressive factors found in the tumor microenvironment. In addition, patients treated with CAR cell therapies can have serious and sometimes fatal toxicities, which can be caused by high levels of activation of the CAR therapy, which can lead to severe cytokine release syndrome, or CRS, and neurologic toxicities. Furthermore, CAR therapies have the potential to attack healthy tissues (i.e., "on-target/off-tumor" toxicities) which can also result in death.

Our Proprietary CID Technology Platform

Our proprietary CID technology platform is designed to address the challenges of current cellular immunotherapies. Cellular activities and functions, such as growth, activation, proliferation and cell death, are controlled by signaling cascades following aggregation of specific proteins. Our CID platform consists of molecular switches, modified forms of these signaling proteins, which are triggered inside the patient by infusion of a small molecule, rimiducid or temsirolimus, instead of by natural upstream signals. Our current product candidates are based on either an "activation switch", a "safety switch," or a "dual switch" which contains both activation and safety switches. After the small molecule is administered, the "safety switch" is designed to lead to apoptosis, and the "activation switch" is designed to lead to proliferation, activation and enhanced persistence of immune cells.

We incorporate the molecular switches in the appropriate immune cells through genetic manipulation and administer them to the patient. After the gene-modified immune cells are inside the patient's body, specific functions of these cells may be controlled by administration of small molecule ligands (rimiducid or temsirolimus). The CID switch proteins have been designed to specifically bind to rimiducid or temsirolimus. Once introduced, these ligands couple, or aggregate, CID switch proteins together to create a cluster that triggers the signaling cascade. Aside from its impact on CID-modified immune cells bearing switch proteins, rimiducid is bioinert and has no other known effect on the body. In dual-switch applications, temsirolimus can be used to activate a safety switch, if severe, treatment-related toxicities occur. Temsirolimus is a kinase inhibitor approved for the treatment of advanced renal cell carcinoma that has a well-characterized safety profile.

Our proprietary CID-based product candidates depend on the following signaling molecules to trigger signaling cascades, resulting in different cell activities:

- **iMC: Signaling Molecules for Activation and Proliferation.** iMC is also known as inducible MyD88 and CD40. Myeloid differentiation primary response 88, or MyD88, is a protein that has functions in cellular responses to stimuli such as stress, cytokines and bacteria or viruses. CD40 is a co-stimulatory protein found on antigen-presenting cells, such as dendritic cells and B cells and is required for their full activation. Activation of iMC in immune cells, such as T lymphocytes, provides inducible co-stimulation, leading to enhanced cell proliferation and survival. In addition,

activation of iMC causes immune cells to secrete pro-inflammatory cytokines and chemokines, and to express co-stimulatory cell surface molecules to potentially modulate the tumor microenvironment and stimulate the patient's own immune system.

Our GoCAR technology incorporates our proprietary iMC activation switch that activates CAR cells when triggered by both rimiducid and the targeted antigen expressed on the surface of the cancer cells. Current generation CAR constructs consist of a CD3-æ domain and one or more co-stimulatory molecules that are both activated when the CAR binds to the cancer antigen, and therefore, function autonomously following infusion. This reliance on an antigen for activation of the CAR-T cell results in an unpredictable and inherently uncontrollable therapeutic effect. Solid tumor CAR cells, on the other hand, often fail to proliferate or persist at all for more than a few days or weeks and have been largely ineffective. In each situation, the physician has no effective way to intervene to achieve greater consistency once the cells have been administered.

Our GoCAR technology is designed to change the current paradigm by placing our proprietary co-activation domain, MC, under rimiducid control. GoCAR cells are designed to only be fully activated when exposed to both the cancer cells expressing the target antigen and rimiducid. This separation is designed to control the degree of activation of the CAR cells through adjustments to the schedule.

- **CaspaCIDe: Signaling Molecule for Apoptosis.** CaspaCIDe is also known as inducible Caspase-9. Caspase-9 is the initiating enzyme in the apoptosis pathway. When activated, the dimerization of CaspaCIDe leads to rapid apoptosis of gene-modified T cells. Because CaspaCIDe is designed to be permanently integrated into our cellular therapies, the safety switch has the potential to be available for use long after the initial therapy is delivered. Moreover, preclinical animal studies demonstrate the ability to modulate the elimination of cells containing CaspaCIDe by different rimiducid doses and schedules (i.e., titrated elimination).

Our Active Product Candidates

BPX-601: GoCAR-T for PSCA+ Solid Tumors

We are developing BPX-601, an autologous GoCAR-T product candidate containing our proprietary iMC activation switch, designed to treat solid tumors expressing prostate stem cell antigen, or PSCA. PSCA is an antigen expressed in several solid tumor indications, including pancreatic cancer. Pre-clinical data show iMC enhances T cell proliferation and persistence, enhances host immune activity, and modulates the tumor microenvironment to improve the potential to treat solid tumors compared to traditional CAR-T therapies. A Phase 1/2 clinical trial, called BP-012, in patients with pancreatic cancer expressing PSCA is ongoing.

BPX-603: Dual-Switch GoCAR-T for HER2+ Solid Tumors

We are developing BPX-603, which is our first controllable dual-switch autologous GoCAR-T product candidate and incorporates both the iMC activation switch and the CaspaCIDe safety switch. BPX-603 is designed to target solid tumors that express the human epidermal growth factor receptor 2 antigen, or HER2. HER2 is a validated antigen for cancer therapies, and academic CAR-T cell clinical studies have shown evidence of anti-tumor activity. These academic CAR-T approaches targeting HER2 have been limited by modest clinical efficacy and off-tumor/on-target toxicity. We believe that our dual-switch GoCAR-T technology may be uniquely suited to improve upon these earlier efforts, by driving greater efficacy through iMC activation while enabling clinicians to manage any treatment-emergent toxicities with CaspaCIDe. We submitted an IND for BPX-603 in 2019 and are conducting additional pre-clinical studies to support its IND.

BCMA GoCAR-NK: Allogeneic GoCAR-NK for Multiple Myeloma

We are developing a GoCAR-NK program targeting B cell maturation antigen (BCMA). BCMA is highly expressed in multiple myeloma, a hematologic malignancy. This is our first off-the-shelf, and NK cell program. In addition to targeting antigen-expressing tumor cells through CAR-mediated recognition, NK cells also possess innate cytotoxic activity and play an important role in antitumor immune responses. Furthermore, allogeneic NK cells have a low propensity for causing graft-versus-host disease (GvHD) following adoptive transfer and may therefore be used as an off-the-shelf cellular therapy.

While other NK cell therapies have been safe, in most experiments only modest therapeutic efficacy has been observed due to limited in vivo NK cell expansion and persistence. Bellicum is using the GoCAR platform, which encodes the cell signaling molecules MyD88 and CD40 (or MC) to enhance NK cell proliferation, survival and cytotoxic function. In addition, MC cell signaling synergizes with transgenic expression of IL-15, a growth-promoting cytokine for NK cells, to increase antitumor potency. Co-expression of MC, IL-15 and a tumor-specific CAR results in superior in vivo efficacy in multiple pre-clinical tumor models.

Based on these proof-of-concept studies, we believe that GoCAR-NK cells have the potential to improve the durability of clinical responses of BCMA targeted cellular therapies by targeting myeloma through multiple mechanisms of action while offering the advantages of shorter time to treatment and lower cost of goods that an allogeneic, off-the-shelf product provides. Bellicum has initiated formal pre-clinical development activities for the BCMA-specific GoCAR-NK program.

Manufacturing, Processing and Delivering to Patients

We have developed efficient and scalable processes to manufacture genetically modified T cells of high quality. We are leveraging the processes we have developed for BPX-601 in combination with our proprietary cellular control technologies, resources, capabilities and expertise for the manufacture of our product candidates to create and develop first and best-in-class product candidates.

Our product candidates require a combination of three critical components: (1) viral vectors with DNA content encoded for our proprietary switch proteins and co-stimulatory and other accessory molecules, (2) patient or healthy donor-derived T cells that are genetically modified by our viral vectors, and (3) the small molecules rimiducid and/or temsirolimus, which activate the switch proteins. Each of these components requires a separate supply chain and shares the same regulatory requirements applicable for biological or chemical materials suitable for human use. Details on each of these components are described below:

- ***Viral Vectors.*** We use gamma retrovirus to transduce our product candidates. We believe that gamma retrovirus is optimal for cell transduction given that it is an integrating vector that induces long-term gene expression, exhibits high transduction efficiency, has sufficient capacity for DNA content, and has been extensively and safely used in clinical trials.

- ***Genetically Modified Cells.*** We have designed and refined a proprietary process for cell engineering that has been improved from lab-based open procedures used in academic and research settings to a functionally closed system that is more appropriate for large-scale clinical trials and commercialization. Our systems are designed to be compliant with current guidelines and regulations for cell-based manufacturing in the U.S. and Europe and have been successfully implemented in our facility and transferred and implemented by our third-party manufacturers.

- ***Small Molecules.*** Rimiducid is a synthetic small molecule that has been rationally designed to trigger the proprietary switch proteins in our CID platform. We have separate third-party manufacturers for the active pharmaceutical ingredient, or API, and the finished drug product. Manufacturers of both the API and finished drug product are licensed to manufacture a variety of marketed drugs worldwide and have been selected based on their ability to provide supplies for our clinical trials and future commercialization. In our dual-switch constructs, the small molecule temsirolimus can be used to trigger one of the two switches. Temsirolimus is an approved and commercially available product manufactured and distributed by Pfizer Inc. under the trade name TORISEL.

We are focused on continuously refining our overall cell therapy supply chain, manufacturing, processing and delivery to patients to be more efficient. Our current process cycles for our autologous product candidates, from collection of white blood cells to infusion of the final product, can be completed in as little as four weeks and are customized to be complementary to the treatment procedure of interest in order to prevent delays or complications.

We have historically worked with third-party manufacturers and used our own manufacturing facility to produce our product candidates for our clinical trials. We recently announced a transaction with The University of Texas M.D. Anderson Cancer Center, or MD Anderson to sell our manufacturing facility and establish a preferred supply agreement with the goal of reducing our costs while maintaining viral vector and cell therapy development capabilities and dedicated manufacturing capacity to support our product candidates.

Intellectual Property

We seek to protect proprietary technology, inventions, and improvements that are commercially important to our business by seeking, maintaining, and defending patent rights, whether developed internally or licensed from third parties. We also seek to rely on regulatory protection afforded through orphan drug designations, data exclusivity, market exclusivity and patent term extensions where available as well as contractual agreements with our academic and commercial partners.

A strategic focus for us has been to identify and license key patents and patent applications that serve to enhance our intellectual property and technology position. Our intellectual property estate includes: (1) claims directed to core CID technologies and components used in our products; (2) claims directed to methods of treatment for therapeutic indications; (3) claims directed to specific products; and (4) claims directed to innovative methods for generating new constructs for genetically engineering T cells. We believe our patent estate, together with our efforts to develop and patent next generation technologies, provides us with a substantial intellectual property position.

As of December 31, 2019, to our knowledge, our patent estate, on a worldwide basis, includes 157 issued patents, 22 of which are in the U.S., and 76 pending patent applications, 17 of which are in the U.S., which we own or for which we have an exclusive, either in its entirety or within our field of use, commercial license. The provisional and pending patent applications and issued patents include composition of matter and method of use claims.

- We have internally developed technology disclosed in four pending utility patent applications in the U.S., 1 European granted patent validated in 8 countries, 26 pending foreign patent applications, and two pending PCT application which relate to our GoCAR-T technology. If U.S. patents issue from the U.S. applications, the estimated expiration date of the last to expire patent is in 2037. If patents are issued in foreign jurisdictions, the anticipated expiration dates will be in 2037.
- Pursuant to our licenses from Baylor and Ariad, we have exclusive commercial rights to eleven issued U.S. patents expiring in 2024 or later, 6 pending U.S. utility patent applications, eleven issued foreign patents expiring in 2024 or later and 9 pending patent applications in foreign jurisdictions that relate to our GoCAR-T, GoCAR-NK, rivo-cel and certain of our other technologies. If U.S. patents issue from the currently pending U.S. patent applications, the estimated expiration date of the last to expire patent is 2031. If patents from the currently pending patent applications are issued in foreign jurisdictions, the estimated expiration dates range from 2024 to 2029.
- Pursuant to our license agreement with Agensys we have exclusive commercial rights for technology to target certain cancer-specific antigens.

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

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

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

Our Collaboration and License Agreements

Co-Development and Co-Commercialization Agreement - Adaptimmune

In December 2016, we and Adaptimmune Therapeutics plc, or Adaptimmune entered into a Co-Development and Co-Commercialization Agreement, or the Adaptimmune Agreement, in order to facilitate a staged collaboration to evaluate, develop and commercialize next generation T cell therapies.

Under the Adaptimmune Agreement, the parties agreed to evaluate our GoTCR technology, iMC co-stimulation, with Adaptimmune's affinity-optimized SPEAR® T cells for the potential to create enhanced TCR product candidates. Depending on results of the preclinical proof-of-concept phase, the agreement may progress to a two-target co-development and co-commercialization phase. To the extent necessary, and in furtherance of the parties' proof-of-concept and co-development efforts, the parties granted each other a royalty-free, non-transferable, non-exclusive license covering their respective technologies for purposes of facilitating such proof-of-concept and co-development efforts. In addition, as to covered therapies developed under the Adaptimmune Agreement, the parties granted each other a reciprocal exclusive license for the commercialization of such therapies.

With respect to any joint commercialization of a covered therapy, the parties agreed to negotiate in good faith the commercially reasonable terms of a co-commercialization agreement. The parties also agreed that any such agreement shall provide for, among other things, equal sharing of the costs of any such joint commercialization and the calculation of profit shares as set forth in the Adaptimmune Agreement.

The Adaptimmune Agreement will expire on a country-by-country basis once the parties cease commercialization of the T cell therapies covered by the Adaptimmune Agreement, unless earlier terminated by either party for material breach, non-performance or cessation of development, bankruptcy/insolvency, or failure to progress to co-development phase.

License Agreement - Agensys

In December 2015, we and Agensys, Inc. or Agensys entered into a license agreement, or the Agensys Agreement, pursuant to which (i) Agensys granted us, within the field of cell and gene therapy of diseases in humans, an exclusive, worldwide license and sublicense to its patent rights directed to PSCA and related antibodies, and (ii) we granted Agensys a non-exclusive, fully paid license to our patents directed to inventions that were made by us in the course of developing our licensed products, solely for use with Agensys therapeutic products containing a soluble antibody that binds to PSCA or, to the extent not based upon our other proprietary technology, to non-therapeutic applications of antibodies not used within the field.

As consideration for the rights granted to us under the Agensys Agreement, we agreed to pay to Agensys a non-refundable upfront fee of $3.0 million. We are also required to make aggregate milestone payments to Agensys of up to (i) $5.0 million upon the first achievement of certain specified clinical milestones for its licensed products, (ii) $50.0 million upon the achievement of certain specified clinical milestones for each licensed product, and (iii) $75.0 million upon the achievement of certain sales milestones for each licensed product. The Agensys Agreement additionally provides that we will pay to Agensys a royalty percentage that ranges from the mid to high single digits based on the level of annual net sales of licensed products by us, our affiliates or permitted sublicensees. The royalty payments are subject to reduction under specified circumstances.

Under the Agensys Agreement, Agensys also was granted the option to obtain an exclusive license, on a product-by-product basis, from us to commercialize in Japan each licensed product developed under the Agensys Agreement that has completed a phase 2 clinical trial. As to each such licensed product, if Agensys or its affiliate, Astellas Pharma, Inc., exercises the option, the Agensys Agreement provides that we will be paid an option exercise fee of $5.0 million. In addition, the Agensys Agreement provides that we will be paid a royalty that ranges from the mid to high single digits based on the level of annual net sales in Japan of each such licensed product. If the option is exercised, the aggregate milestone payments payable by us to Agensys, described above with respect to each licensed product, would be reduced by up to an aggregate of $65.0 million upon the achievement of certain specified clinical and sales milestones.

The Agensys Agreement will terminate upon the expiration of the last royalty term for the products covered by the Agensys Agreement, which is the earlier of (i) the date of expiration or abandonment of the last valid claim within the licensed patent rights covering any licensed products under the Agensys Agreement, (ii) the expiration of regulatory exclusivity as to a licensed product, and (iii) 10 years after the first commercial sale of a licensed product. Either party may terminate the Agensys Agreement upon a material breach by the other party that remains uncured following 60 days after the date of written notice of such breach (or 30 days if such material breach is related to failure to make payment of amounts due under the Agensys Agreement) or upon certain insolvency events. In addition, Agensys may terminate the Agensys Agreement immediately upon written notice to us if we or any of our affiliates or permitted sublicensees commence an interference proceeding or challenge the validity or enforceability of any of Agensys' patent rights.

License Agreement - BioVec

In June 2015, we and BioVec Pharma, Inc., or BioVec, entered into a license agreement, or the BioVec Agreement, pursuant to which BioVec agreed to supply us with certain proprietary cell lines and granted us a non-exclusive, worldwide license to certain of its patent rights and related know-how related to such proprietary cell lines.

As consideration for the products supplied and rights granted to us under the BioVec Agreement, we agreed to pay to BioVec an upfront fee of $100,000 within ten business days of the effective date of the BioVec Agreement and a fee of $300,000 within ten business days of its receipt of the first release of GMP lot of the products licensed under the BioVec Agreement. In addition, we agreed to pay to BioVec an annual fee of $150,000, commencing 30 days following the first filing of an IND, or its foreign equivalent, for a product covered by the license; with such annual fees being creditable against any royalties payable by us to BioVec under the BioVec Agreement. We also are required to make a $250,000 milestone payment to BioVec for each of the first three licensed products to enter into a clinical phase trial and one-time milestone payments of $2.0 million upon receipt of a registration granted by the FDA or EMA on each of our first three licensed products. The BioVec Agreement additionally provides that we will pay to BioVec a royalty in the low single digits on net sales of products covered by the BioVec Agreement. We may also grant sub licenses under the licensed patent rights and know-how to third parties for limited purposes related to the use, sale and other exploitation of the products licensed under the BioVec Agreement. The BioVec Agreement will continue until terminated. The BioVec Agreement may be terminated by us, in our sole discretion, at any time upon 90 days written notice to BioVec. Either party may terminate the BioVec Agreement in the event of a breach by the other party of any material provision of the BioVec Agreement that remains uncured on the date that is 60 days after written notice of such failure or upon certain insolvency events that remain uncured following the date that is 30 days after the date of written notice to a party regarding such insolvency event.

License Agreements - Baylor College of Medicine

2008 Baylor License Agreement

Pursuant to an Exclusive License Agreement with Baylor College of Medicine, or Baylor, dated March 20, 2008, or the 2008 Baylor license agreement, we obtained an exclusive, worldwide and fully paid up license to certain intellectual property, including intellectual property related to methods for activating antigen presenting cells and to genetic constructs coding for membrane bound inducible cytoplasmic CD40.

As consideration for the 2008 Baylor license agreement, we issued to Baylor 23,529 shares of our common stock and assumed responsibility for all legal fees and expenses, filing or maintenance fees, assessments and all other costs and expenses related to prosecuting, obtaining and maintaining patent protection on the patents subject to the 2008 Baylor license agreement.

The 2008 Baylor license agreement is subject to certain restrictions and is nonexclusive with respect to (1) the making or use of the licensed intellectual property for use in non-commercial research, patient care, teaching, and other educational purposes; (2) any non-exclusive license covering the licensed intellectual property that Baylor grants to other academic or research institutions for noncommercial research purposes; (3) any non-exclusive licenses that Baylor is required to grant to the U.S. or foreign state pursuant to an existing or future treaty with the U.S.; and (4) a non-exclusive license granted to ARIAD Pharmaceuticals, Inc. or ARIAD under the terms of a materials transfer agreement between Baylor and ARIAD.

Baylor may terminate or modify the 2008 Baylor license agreement in the event of a material breach by us that remains uncured following the date that is 90 days after written notice of such breach or upon certain insolvency events that remain uncured following the date that is 30 days following written notice of such insolvency event. We may terminate the 2008 Baylor license agreement, or any portion thereof, at our sole discretion at any time upon 30 days' written notice to Baylor. Upon termination of the 2008 Baylor license agreement, all rights to the intellectual property immediately revert to Baylor.

2010 Baylor License Agreement

Pursuant to an Exclusive License Agreement with Baylor, dated June 27, 2010, or the 2010 Baylor license agreement, we obtained an exclusive, worldwide license to certain intellectual property, including intellectual property related to methods for treating prostate cancer, methods of administering T cells to a patient, and methods of activating antigen presenting cells with constructs comprising MyD88 and CD40.

Pursuant to the terms of the 2010 Baylor license agreement we are required to pay a low annual maintenance fee on each anniversary of the agreement date.

The terms of the 2010 Baylor license agreement also require us to make royalty payments of less than one percent, subject to certain annual minimums, on net sales of products covered by the license. In addition, to the extent we enter into a sublicensing agreement relating to a licensed product, we are required to pay Baylor a percentage in the mid-single digits on all non-royalty income received from sublicensing revenue. Bellicum is required to make milestone payments, of up to $735,000 in aggregate, upon successful completion of clinical and regulatory milestones regarding the first two products covered by this license.

The 2010 Baylor license agreement will expire upon expiration of the last patent contained in the licensed patent rights, on a country-by-country basis, upon which we will have a perpetual, paid-in-full license in such country. Baylor may terminate or modify the

2010 Baylor license agreement in the event of a material breach by us that remains uncured following the date that is 90 days after written notice of such breach or upon certain insolvency events that remain uncured following the date that is 30 days following written notice of such insolvency event. We may terminate the 2010 Baylor license agreement, or any portion thereof, at our sole discretion at any time upon 60 days' written notice to Baylor. Upon termination of the 2010 Baylor license agreement for any reason prior to expiration, we must assign to Baylor each authorized sublicense agreement that is currently in effect on the date of termination.

2014 Baylor License Agreement

Pursuant to an Exclusive License Agreement with Baylor, effective November 1, 2014, or the 2014 Baylor license agreement, we obtained an exclusive, worldwide license to certain intellectual property, including intellectual property related to methods for inducing selective apoptosis.

Pursuant to the terms of the 2014 Baylor license agreement we are required to pay Baylor a low annual maintenance fee on each anniversary of the agreement date. The terms of the 2014 Baylor license agreement also require us to make royalty payments in the low single digits, subject to certain annual minimums, on net sales of products covered by the license. To the extent we enter into a sublicensing agreement relating to a licensed product, Bellicum is also required to pay Baylor a percentage in the low double-digits on all non-royalty income received from sublicensing revenue. We are required to make milestone payments, of up to $275,000 in aggregate, upon successful completion of clinical and regulatory milestones regarding the first product covered by this license. The 2014 Baylor license agreement will expire upon expiration of the last patent contained in the licensed patent rights, on a country-by-country basis, upon which we will have a perpetual, paid-in-full license in each such country.

Baylor may terminate or modify the 2014 Baylor license agreement in the event of a material breach by us that remains uncured following the date that is 90 days after written notice of such breach or upon certain insolvency events that remain uncured following the date that is 30 days following written notice of such insolvency event. We may terminate the 2014 Baylor license agreement, or any portion thereof, at our sole discretion at any time upon 60 days' written notice to Baylor.

2016 Baylor License Agreements

In March 2016, we and Baylor entered into two additional license agreements pursuant to which we obtained exclusive rights to technologies and patent rights owned by Baylor. We could incur additional payments upon the achievement of certain milestone events as set forth in the agreements. If we are successful in developing any of the licensed technologies under either agreement, resulting sales would be subject to a royalty payment in the low single digits.

Grant Agreements

Grant Agreements with Cancer Prevention and Research Institute of Texas

In July 2011, we entered into a Cancer Research Grant Contract, or the First Grant Contract, with the Cancer Prevention and Research Institute of Texas, or CPRIT, under which CPRIT awarded a grant not to exceed approximately $5.7 million to be used for the execution of defined clinical development of rivo-cel. To date, we have received approximately $4.9 million under the grant. The First Grant Contract terminated on June 30, 2014, but obligations exist as to licensing, royalty payments, and indemnification provisions.

In November 2016, we announced that the Company received notice of a product development award totaling approximately $16.9 million from CPRIT. The CPRIT award was expected to fund a portion of a three-year global clinical program comprising clinical trials for adult and pediatric patients with high-risk and intermediate-risk AML, and potentially other hematologic cancers. The proposed studies are designed to evaluate the benefit of rivo-cel and rimiducid in the context of in vivo and ex vivo T cell depleted haploidentical HSCT. The CPRIT oversight committee met in February 2017 and agreed to move forward with the proposed terms of the grant agreement, and a second grant, or the Second Grant Contract was entered into in August 2017. Additionally, the First Grant Contract was amended in order to align revenue sharing terms, discussed below, with the Second Grant Contract. We initiated a pivotal randomized Phase 2/3 clinical trial (THRIVE) supported in part by the CPRIT funding.

In January 2020, we terminated the Second Grant Contract based on our decision to cease enrollment of the THRIVE trial. A total of approximately $3.3 million in grant funds was received and used for the project. No additional funds will be disbursed under this grant, but the revenue share and other post-grant obligations described below survive the termination.

Pursuant to the terms of each of the Grant Contracts, we grant to CPRIT a non-exclusive, irrevocable, royalty-free, perpetual, worldwide license to any technology and intellectual property resulting from the grant-funded activities and any other intellectual property that is owned by us and necessary for the exploitation of the technology and intellectual property resulting from the grant-funded activities, or the Project Results, for and on behalf of CPRIT and other governmental entities and agencies of the State of Texas and private or independent institutions of higher education located in Texas for education, research and other non-commercial

purposes only. The terms of each of the Grant Contracts require that we pay tiered royalties in the low- to mid-single digit percentages on revenues from sales and licenses of products or services that are based upon, utilize, are developed from or materially incorporate Project Results. Such royalties reduce to less than one percent after a mid-single-digit multiple of the grant funds have been repaid to CPRIT in royalties. Such royalties are payable for so long as we have marketing exclusivity or patents covering the applicable product or service (or twelve years from first commercial sale of such product or service in certain countries if there is no such exclusivity or patent protection).

If we abandon patent applications or patents covering Project Results in certain major market countries, CPRIT can, at its own cost, take over the prosecution and maintenance of such patents and is granted a non-exclusive, irrevocable, royalty-free, perpetual license with right to sublicense in such country to the applicable Project Results. We are required to use diligent and commercially reasonable efforts to commercialize at least one commercial product or service or otherwise bring to practical application the Project Results. If CPRIT notifies us of our failure with respect to the foregoing, and such failure is not owing to material safety concerns, then, at CPRIT's option, the applicable Project Results would be transferred to CPRIT and CPRIT would be granted a non-exclusive license to any other intellectual property that is owned by us and necessary for the exploitation of the Project Results, and CPRIT, at its own cost, can commercialize products or services that are based upon, utilize, are developed from or materially incorporate Project Results. CPRIT's option is subject to our ability to cure any failures identified by CPRIT within 60 days and a requirement to negotiate in good faith with us with respect to an alternative commercialization strategy for a period of 180 days.

Competition

The biopharmaceutical industry is characterized by intense and dynamic competition to develop new technologies and proprietary therapies. Any product candidates that we successfully develop and commercialize will have to compete with existing therapies and new therapies that may become available in the future. While we believe that our proprietary CID platform, differentiated product candidates and scientific expertise in the field of cellular immunotherapy provide us with competitive advantages, we face potential competition from various sources, including larger and better-funded pharmaceutical, specialty pharmaceutical and biotechnology companies, as well as from academic institutions, governmental agencies and public and private research institutions.

Cell based treatments for cancer, such as CAR-T, CAR-NK and TCR therapies, have recently been an area of significant research and development by academic institutions and biopharmaceutical companies. Our product candidates may compete with product candidates from a number of companies that are currently focused on this therapeutic modality, including Adaptimmune, Allogene Therapeutics, Inc., Atara Biotherapeutics, Inc., Autolus Therapeutics plc, bluebird bio, Inc., Bristol-Meyer Squibb Co., Celgene Corporation, Cellectis SA, Cell Medica Limited, Celyad S.A., Fate Therapeutics Inc., GlaxoSmithKline plc, Intrexon Corporation, Immune Design Corp., Gilead Sciences, Inc., Iovance Biotherapeutics, Inc., Janssen Pharmaceutical, Kiadis Pharma B.V., Legend Biotech, Lyell Immunopharma, Inc., Medigene AG, MolMed S.p.A., Mustang Bio, Inc., NantKwest, Inc., Nkarta Inc., Novartis AG, Poseida Therapeutics, Precision Biosciences, Inc., Takeda Pharmaceutical Co, Unum Therapeutics, and Ziopharm Oncology.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and commercializing those treatments. Accordingly, our competitors may be more successful than us in obtaining approval for treatments and achieving widespread market acceptance. Our competitors' treatments may be more effective, or more effectively marketed and sold, than any treatment we may commercialize and may render our treatments obsolete or non-competitive before we can recover the expenses of developing and commercializing any of our treatments.

Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical study sites and subject registration for clinical studies, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. We expect any treatments that we develop and commercialize to compete on the basis of, among other things, efficacy, safety, convenience of administration and delivery, price, the level of generic competition and the availability of reimbursement from government and other third-party payers. For example, if a third party is able to obtain a stand-alone new drug application for rimiducid, then potential generic manufacturers may be able to file abbreviated new drug applications for that product.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. In addition, we expect that our therapeutic products, if approved, will be priced at a significant premium over competitive generic

products and our ability to compete may be affected in many cases by insurers or other third-party payers seeking to encourage the use of generic products.

Government Regulation and Product Approval

As a biopharmaceutical company that operates in the U.S., we are subject to extensive regulation. Our cell products will be regulated as biologics. With this classification, commercial production of our products will need to occur in registered and licensed facilities in compliance with the current good manufacturing practice, or cGMP, for biologics.

The FDA regulates human cells, tissues, and cellular and tissue-based products, or HCT/Ps, under a two-tiered framework, based on risk categorization. Higher-risk HCT/Ps are regulated as biologics. For example, such products must complete extensive clinical trials, which must be conducted pursuant to an effective IND. The FDA must review and approve a Biologics License Application, or BLA before a new biologic may be marketed.

The FDA considers our investigational products to be "combination products" because our products involve a biologic, the engineered cells, that is intended to be used with a small molecule chemical drug, rimiducid. In general, biologics such as our engineered cells are regulated through the FDA's Center for Biologics Evaluation and Research, or CBER, while synthetic drugs are regulated through the FDA's Center for Drug Evaluation and Research. When the FDA encounters a combination product such as our products, the agency determines which of the two centers will have primary responsibility for regulating the product by determining the primary mode of action for the product. The cellular component of our combination contributes the primary mode of action and, as a result, the FDA will regulate our investigational products as biologics, through CBER.

Government authorities in the U.S., at the federal, state and local levels, and in other countries extensively regulate, among other things, the research, development, testing, manufacturing, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of biopharmaceutical products such as those we are developing. Our product candidates must be approved by the FDA before they may be legally marketed in the U.S. and by the appropriate foreign regulatory agency before they may be legally marketed in foreign countries. Generally, our activities in other countries will be subject to regulation that is similar in nature and scope as that imposed in the U.S., although there can be important differences. Additionally, some significant aspects of regulation in Europe are addressed in a centralized way, but country-specific regulation remains essential in many respects.

U.S. Product Development Process

In the U.S., the FDA regulates new drugs and biological products under the Federal Food, Drug and Cosmetic Act, or FDCA, the Public Health Service Act, or PHSA, and implementing regulations. Products are also subject to other federal, state and local statutes and regulations. The FDA has limited experience with commercial development of T cell therapies for cancer. The process required by the FDA before a biological product may be marketed in the U.S. generally involves the following:

- completion of nonclinical laboratory tests and animal studies according to good laboratory practices, or GLPs, and applicable requirements for the humane use of laboratory animals or other applicable regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- performance of adequate and well-controlled human clinical trials according to the FDA's regulations commonly referred to as good clinical practices, or GCPs, and any additional requirements for the protection of human research patients and their health information, to establish the safety and efficacy of the proposed biological product for its intended use;
- submission to the FDA of a BLA for marketing approval that includes substantial evidence of safety, purity, and potency from results of nonclinical testing and clinical trials;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the biological product is produced to assess compliance with cGMP, to assure that the facilities, methods and controls are adequate to preserve the biological product's identity, strength, quality and purity and, if applicable, the FDA's current good tissue practices, or GTPs, for the use of HCT/Ps;
- potential FDA audit of the nonclinical study and clinical trial sites that generated the data in support of the BLA; and
- FDA review and approval, or licensure, of the BLA.

Before testing any biological product candidate, including our product candidates, in humans, the product candidate enters the preclinical testing stage. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements including GLPs. The clinical trial sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA unless the FDA raises concerns or questions regarding the proposed clinical trials and places the trial on a clinical hold within that 30-day time period. In such a case, the IND sponsor must resolve FDA's outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a biological product candidate at any time before or during clinical trials due to safety concerns or non-compliance. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such clinical trials.

Clinical trials involve the administration of the biological product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical trial will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA's regulations comprising the GCP requirements, including the requirement that all research patients provide informed consent. Further, each clinical trial must be reviewed and approved by an institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. An IRB is independent from the trial sponsor and is charged with protecting the welfare and rights of clinical trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. Clinical trials also must be reviewed by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research conducted at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment.

Human clinical trials for biologic products are typically conducted in three sequential phases that may overlap or be combined:

- *Phase 1*. The biological product is initially introduced into healthy human subjects and tested for safety. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.
- *Phase 2*. The biological product is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.
- *Phase 3*. Clinical trials are undertaken to further evaluate dosage, clinical efficacy, potency, and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk to benefit ratio of the product and provide an adequate basis for product labeling.

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the progress of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or *in vitro* testing that suggest a significant risk for human patients, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor or its data safety monitoring board may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk, including risks inferred from other unrelated immunotherapy trials. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the biological product has been associated with unexpected serious harm to patients.

Concurrently with clinical trials, companies usually complete additional studies and must also develop additional information about the physical characteristics of the biological product, as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents with use of biological products, the PHSA emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final biological product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

Federal law requires that we register all of our clinical trials on a publicly accessible website, and accordingly we disclose information on our clinical trials on www.clinicaltrials.gov. We must also provide results information for most of our clinical trials, other than Phase 1 clinical trials.

U.S. Review and Approval Processes

After the completion of clinical trials of a biological product, FDA approval of a BLA must be obtained before commercial marketing of the biological product. The BLA must include results of product development, laboratory and animal studies, human trials, information on the manufacture and composition of the product, proposed labeling and other relevant information. The FDA may grant deferrals for submission of certain data or full or partial waivers. The testing and approval processes require substantial time and effort and there can be no assurance that the FDA will accept the BLA for filing and, even if filed, that any approval will be granted on a timely basis, if at all.

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

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

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

Notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the BLA does not satisfy its regulatory criteria for approval and deny approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data. If the agency decides not to approve the BLA in its present form, the FDA will issue a complete response letter that describes all of the specific deficiencies in the BLA identified by the FDA. The deficiencies

identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the application.

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

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

In addition, under the Pediatric Research Equity Act, or PREA, a BLA or supplement to a BLA must contain data to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, the PREA does not apply to any product for an indication for which orphan designation has been granted. However, if only one indication for a product has orphan designation, a pediatric assessment may still be required for any applications to market that same product for the non-orphan indication(s). Sponsors in satisfaction of this obligation may receive an additional six months of marketing exclusivity for all dosage forms and all indications with the same active moiety as the drug studied.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the U.S., or more than 200,000 individuals in the U.S. and for which there is no reasonable expectation that the cost of developing and making available in the U.S. a drug or biologic for this type of disease or condition will be recovered from sales in the U.S. for that drug or biologic. Orphan drug designation must be requested before submitting a BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not shorten the duration of the regulatory review or approval process, but does provide certain advantages, such as a waiver of PDUFA fees, enhanced access to FDA staff, and potential waiver of the PREA requirements discussed above.

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

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the U.S. may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Expedited Development and Review Programs

The FDA has a Fast Track program that is intended to expedite or facilitate the process for reviewing new products that meet certain criteria. Specifically, new products are eligible for Fast Track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs, or if the drug has been designated as a qualified infectious disease product. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. Under Fast Track, the FDA may consider for review sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA. Even if Fast Track designation is granted, it may be rescinded if the product no longer meets the qualifying criteria.

Any product, submitted to the FDA for approval, including a product with a Fast Track designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. A product is eligible for priority review if it treats a serious condition and, if approved, would provide a significant improvement in safety and efficacy. The FDA will attempt to direct additional resources to the evaluation of an application for a new product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product treats a serious condition, provides a meaningful advantage over available therapies, and demonstrates an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform appropriate post-marketing clinical studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. The FDCA also provides expedited procedures for FDA withdrawal of approval of a product approved through accelerated approval. Fast Track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Breakthrough Therapy Designation is intended to expedite the development and review of products that treat serious or life-threatening conditions. The designation requires preliminary clinical evidence that may demonstrate substantial improvement on a clinically significant endpoint over available therapies. The designation includes all of the Fast Track program features, as well as more intensive FDA interaction and guidance, organizational commitment, and other potential actions to expedite review. The Breakthrough Therapy Designation is a distinct status from both accelerated approval and priority review, which can also be granted to the same product if relevant criteria are met. If a product is designated as breakthrough therapy, the FDA will expedite the development and review of such product. Even if a Breakthrough Therapy Designation is granted, it may be rescinded if the product no longer meets the qualifying criteria.

Other U.S. health care Laws and Compliance Requirements

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

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

Additionally, the intent standard under the Anti-Kickback Statute was amended by the Affordable Care Act to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. The Anti-Kickback Statute may be violated if only one purpose of the remuneration is to induce referrals. In addition, the Affordable Care Act codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act.

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

The federal false claims laws, including but not limited to the federal civil False Claims Act, prohibit, among other things, any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to, or approval by, the federal government. Pharmaceutical and other health care companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies' marketing of the product for unapproved, that is, off-label, and thus non-reimbursable, uses.

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

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

We may be subject to data privacy and security regulations by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, imposes requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's security standards directly applicable to business associates independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

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

We will also be required to begin satisfying the product tracing, verification, and reporting requirements set out in the Drug Quality and Security Act.

In order to distribute products commercially, we must also comply with state laws that require the registration of manufacturers and wholesale distributors of drug and biological products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state.

Several states have enacted legislation requiring pharmaceutical and biotechnology companies to, among other things, establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales representatives, as well as to prohibit pharmacies and other health care entities from providing certain physician prescribing data to pharmaceutical and biotechnology companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are potentially subject to federal and state consumer protection and unfair competition laws.

If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including significant administrative, civil and criminal penalties, damages, fines, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of noncompliance with these laws, exclusion from participation in government health care programs, such as Medicare and Medicaid, disgorgement, contractual damages, reputational harm and the curtailment or restructuring of our operations.

Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In the U.S. and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend, in part, on the extent to which third-party payors provide coverage and establish adequate reimbursement levels for such products. In the U.S., third-party payors include federal and state health care programs, private managed care providers,

health insurers and other organizations. The process for determining whether a third-party payor will provide coverage for a product may be separate from the process for setting the price of a product or for establishing the reimbursement rate that such a payor will pay for the product. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the FDA-approved products for a particular indication. Third-party payors are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical products, therapies and services, in addition to questioning their safety and efficacy. We may need to conduct expensive pharmaco-economic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain the FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

Different pricing and reimbursement schemes exist in other countries. In the EU, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward pressure on health care costs has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

The marketability of any product candidates for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. In addition, emphasis on managed care in the U.S. has increased and we expect will continue to increase the pressure on health care pricing. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

The Foreign Corrupt Practices Act

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the U.S. to comply with accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Additional Regulation

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

Employees

As of December 31, 2019, we had 107 employees, all of whom were full-time, 84 of whom were engaged in research and development activities and 23 of whom were engaged in business development, finance, information systems, facilities, human resources or administrative support. None of our employees is subject to a collective bargaining agreement. We consider our relationship with our employees to be good.

Corporate Information

We were incorporated in Delaware in July 2004. Our principal executive offices are located at 2130 W. Holcombe Blvd., Ste. 800, Houston, Texas and our telephone number is (832) 384-1100. Our corporate website address is www.bellicum.com. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, will be made available free of charge on our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or the SEC. The contents of our website are not incorporated into this Annual Report and our reference to the URL for our website is intended to be an inactive textual reference only.

Item 1A. Risk Factors

Our business and results of operations are subject to a number of risks and uncertainties. You should carefully consider the following risk factors, as well as the other information in this report, and in our other public filings. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. You should consider all of the risk factors described when evaluating our business.

Risks Related to Our Business and Industry

We have incurred net losses in every year since our inception and anticipate that we will continue to incur net losses in the future.

We are a clinical stage biopharmaceutical company with a limited operating history. We are not profitable, have no products approved for commercial sale and have incurred significant losses since our inception in 2004. To date, we have financed our operations primarily through equity and debt financings. For the fiscal years ended December 31, 2019 and 2018, we reported a net loss of $112.5 million and $98.0 million, respectively. As of December 31, 2019, we had an accumulated deficit of $533.0 million. We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of, and seek regulatory approvals for, our product candidates.

In addition, if we obtain regulatory approval of and seek to commercialize any of our product candidates, we will likely incur significant sales, marketing and manufacturing expenses and may continue to incur substantial research and development expenses for additional post-marketing approval development requirements related to such product.

We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We will require significant funding to complete the development and commercialization of our product candidates. If we fail to obtain additional financing, we may have to delay, reduce or eliminate our development programs or commercialization efforts.

Our operations have consumed substantial amounts of cash since our inception. We expect to continue to spend substantial amounts to continue the preclinical and clinical development of our product candidates and other research and development programs.

As of December 31, 2019, we had cash, restricted cash and cash equivalents of approximately $93.8 million. We maintain our cash and cash equivalents with high quality, accredited financial institutions. These amounts at times may exceed federally insured limits. Cash, restricted cash and cash equivalents are expected to be sufficient to fund our operating expenses and capital expenditure requirements through at least the first half of 2021.

We expect to finance future cash needs through public or private equity offerings, debt financings, strategic partnerships and alliances or licensing arrangements. We cannot be certain that additional funding will be available on acceptable terms, or at all. Subject to limited exceptions, our loan agreement with Oxford Finance prohibits us from incurring indebtedness without the prior written consent of Oxford. In addition, the securities purchase agreement for the August 2019 private placement transaction requires us to obtain investor consent prior to taking a range of corporate financing actions, including issuing equity securities that are senior or pari passu to the Series 3 preferred stock and incurring new debt in excess of $1,000,000. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we will need to significantly delay, scale back or discontinue the development or commercialization of our product candidates. We also could be required to:

- seek collaborators for one or more of our current or future product candidates on terms that are less favorable than might otherwise be available;
- relinquish or license on unfavorable terms our rights to technologies or product candidates that we otherwise would seek to develop or commercialize ourselves; or
- seek a third party to acquire us or our assets.

Any of the above events could significantly harm our business, prospects, financial condition and results of operations and cause the price of our common shares to decline. In the event that sufficient additional funds are not obtained through public or private equity offerings, debt financings, strategic partnerships and/or alliances or licensing arrangements on a timely basis, we may be required to reduce expenses through the delay, reduction or curtailment of our development programs, or further reduction of costs for facilities and administration. Moreover, if we do not obtain such additional funds, there could be substantial doubt about our ability to continue as a going concern and increased risk of insolvency and up to total loss of investment to our stockholders and other security holders.

The FDA and other regulatory authorities may disagree with our regulatory plans and we may fail to obtain regulatory approval of our product candidates.

Our business and future success depends, in part, on our ability to obtain regulatory authority assent to conduct human clinical trials, obtain regulatory approval to launch a product based on evidence of clinical safety and efficacy and then successfully commercialize our clinical product candidates. All of our product candidates will require additional clinical and non-clinical development, regulatory review and approval in multiple jurisdictions, substantial investment, and access to sufficient commercial manufacturing capacity and significant marketing efforts before we can expect to generate any revenue from product sales.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- The FDA or comparable regulatory authority or an Institutional Review Board or comparable ethics oversight body may decline to clear the applicable Investigational New Drug Application (IND) or equivalent regulatory submission necessary to conduct human clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our product candidates have the necessary safety, purity, and potency for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;
- we may encounter serious and unexpected adverse events during clinical trials that render our products unsafe for use in humans;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a BLA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in Europe, the U.S. or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve our manufacturing processes and/or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of uncertainty. We have never generated any revenue from product sales and may never be profitable.

We have devoted substantially all of our financial resources and efforts to developing our proprietary CID technology platform, identifying potential product candidates and conducting preclinical studies and clinical trials. We are in the early stages of developing our product candidates, and we have not completed development of any products. Our ability to generate revenue and achieve profitability depends in large part on our ability, alone or with partners, to successfully complete the development of, obtain the necessary regulatory approvals for, and commercialize, product candidates. We do not anticipate generating revenues from sales of products for the foreseeable future. Our ability to generate future revenues from product sales depends heavily on our success in:

- completing requisite clinical trials through all phases of clinical development of our current product candidates;
- seeking and obtaining marketing approvals for product candidates that successfully complete clinical trials, if any;
- launching and commercializing product candidates for which we obtain marketing approval, if any, with a partner or, if launched independently, successfully establishing a sales force, marketing and distribution infrastructure;
- identifying and developing new product candidates;
- progressing our pre-clinical programs into human clinical trials;
- establishing and maintaining supply and manufacturing relationships with third parties;
- developing new molecular switches based on our proprietary CID technology platform;
- maintaining, protecting, expanding and enforcing our intellectual property; and
- attracting, hiring and retaining qualified personnel.

Because of the numerous risks and uncertainties associated with biologic product development, we are unable to predict the likelihood or timing for when we may receive regulatory approval of any of our current or future product candidates or when we will be able to

achieve or maintain profitability, if ever. If we do not receive regulatory approvals, our business, prospects, financial condition and results of operations will be adversely affected. Even if we obtain the regulatory approvals to market and sell one or more of our product candidates, we may never generate significant revenues from any commercial sales for several reasons, including because the market for our products may be smaller than we anticipate, or products may not be adopted by physicians and payors or because our products may not be as efficacious or safe as other treatment options. If we fail to successfully commercialize one or more products, we may be unable to generate sufficient revenues to sustain and grow our business and our business, prospects, financial condition and results of operations will be adversely affected. In addition, our expenses could increase beyond expectations if we are required by the FDA, or foreign regulatory agencies, to perform studies and clinical trials in addition to those that we currently anticipate for our product candidates, or if there are any delays in our or our partners completing clinical trials or the development of any of our product candidates. Further, if one or more of the product candidates that we independently develop is approved for commercial sale, we expect to incur significant costs associated with commercializing any such product candidates. Finally, even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

Our CID technology is novel and largely unproven.

Our proprietary CID technology platform is novel and there are no approved products or third-party product candidates in late-stage clinical trials based on this technology. Additionally, the safety and efficacy profile of rimiducid has not been subject to large scale clinical testing. If rimiducid is found to have a poor safety profile in clinical trials, or if our technology is not effective, we may be required to redesign all of our product candidates, which would require significant time and expense. In addition, our CID platform technology may not be applicable or effective in the development of additional cellular immunotherapies beyond our current programs which would adversely affect our business and prospects.

Cell therapies are novel and present significant challenges.

CAR-T and other cell therapy product candidates represent a relatively new field of cellular immunotherapy. Advancing this novel and personalized therapy creates significant challenges for us, including:

- obtaining regulatory approval, as the FDA and other regulatory authorities have limited experience with commercial development of cell therapies for cancer;
- sourcing clinical and, if approved, commercial supplies for the materials used to manufacture and process our product candidates;
- developing a consistent and reliable process, while limiting contamination risks, for engineering and manufacturing T cells and other immune cell types ex vivo and infusing the engineered cells into the patient;
- educating medical personnel regarding the potential safety benefits, as well as the challenges, of incorporating our product candidates into their treatment regimens;
- establishing sales and marketing capabilities upon obtaining any regulatory approval to gain market acceptance of a novel therapy; and
- the availability of coverage and adequate reimbursement from third-party payors for our novel and personalized therapy.

Our inability to successfully develop CAR-T and other cell therapies or develop processes related to the manufacture or commercialization of these therapies would adversely affect our business, results of operations and prospects.

Our clinical trials may fail to adequately demonstrate the safety and efficacy of any of our product candidates, which would prevent or delay regulatory approval and commercialization.

Clinical testing is expensive, takes many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process and our product candidates are subject to the risks of failure inherent in biologic drug development. Success in early clinical trials does not mean that later clinical trials will be successful because product candidates in later-stage clinical trials may fail to demonstrate sufficient safety or efficacy despite having progressed through initial clinical testing, even at statistically significant levels. We will be required to demonstrate through clinical trials that our product candidates are safe and effective for use in the target indication before we can obtain regulatory approvals for commercial sale. Companies frequently suffer significant setbacks in late-stage clinical trials, even after earlier clinical trials have shown promising results and most product candidates that commence clinical trials are never approved as products. We expect there may be greater variability in results for cellular immunotherapy products processed and administered on a patient-by-patient basis like some of our CID technology-based development and product candidates than for “off-the-shelf” products, like many drugs.

If any of our product candidates fail to demonstrate sufficient safety or efficacy, we would experience potentially significant delays in, or be required to abandon our development of the product candidate, which would have a material and adverse impact on our business, prospects, financial condition and results of operations.

Many of our current product candidates are in pre-clinical or early stage clinical trials, and we may experience unfavorable results in the future.

A Phase 1 clinical trial is ongoing for BPX-601 for the treatment of pancreatic cancer. We have not initiated clinical trials for any additional preclinical CAR-T or CAR-NK product candidates and we may not be able to commence clinical trials in the time frames we expect. As these product candidates are in early stages of development, we face significant uncertainty regarding how effective and safe they will be in human patients and the results from preclinical studies, such as *in vitro* and *in vivo* studies, of BPX-601 and our other preclinical programs may not be indicative of the results of clinical trials of these product candidates. Preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for their products.

Even if clinical trials are successfully completed, the FDA or foreign regulatory authorities may not interpret the results as we do, and more clinical trials could be required before we submit our product candidates for approval. To the extent that the results of our clinical trials are not satisfactory to the FDA or foreign regulatory authorities for support of a marketing application, approval of our product candidates may be significantly delayed, or we may be required to expend significant additional resources, which may not be available to us, to conduct additional clinical trials in support of potential approval of our product candidates.

We may not be successful in our efforts to use and expand our CID platform to build a pipeline of product candidates and develop marketable products.

We believe that our CID platform, which serves as the foundation of our CaspaCIDe and GoCAR technologies, can be further leveraged to discover other novel technologies, therapeutic applications and market opportunities. For example, we are developing new molecular switches and dual-switch systems to provide greater control over cellular immunotherapy. We are at an early stage of development and our platform has not yet, and may never lead to, approved or marketable products. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development, including for reasons related to their harmful side effects, limited efficacy or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize product candidates based upon our technological approach, we may not be able to obtain product or partnership revenues in future periods, which would adversely affect our business, prospects, financial condition and results of operations.

We rely and will continue to rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our product candidates.

We depend and will continue to depend upon independent investigators and collaborators, such as universities, medical institutions, and strategic partners to conduct our preclinical and clinical trials under agreements with us. Negotiations of budgets and contracts with study sites may result in delays to our development timelines and increased costs. We will rely heavily on these third parties over the course of our clinical trials, and we control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with good clinical practices, or GCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of clinical trial sponsors, principal investigators and clinical trial sites. If we or any of these third parties fail to comply with applicable GCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities could require us to perform additional clinical trials before approving our marketing applications. It is possible that, upon inspection, such regulatory authorities could determine that any of our clinical trials fail to comply with the GCP regulations. In addition, our clinical trials must be conducted with biologic product produced under current good manufacturing practices, or cGMPs, and will require a large number of test patients. Our failure or any failure by these third parties to comply with these regulations or to recruit a sufficient number of patients may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Any third parties conducting our clinical trials are and will not be our employees and, except for remedies available to us under our agreements with these third parties, we cannot control whether they devote sufficient time and resources to our ongoing preclinical, clinical and nonclinical programs. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to complete development of, obtain regulatory approval of or successfully commercialize our

product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenue could be delayed.

Switching or adding third parties to conduct our clinical trials involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines.

Also, we are conducting clinical trials in Europe and may plan additional testing of our technology and product candidates in other foreign jurisdictions. We currently have limited staffing and capabilities in foreign countries and may not be able to effectively resolve potential disputes with our independent investigators and collaborators.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. The enrollment of patients depends on many factors, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- the proximity of patients to study sites;
- the design of the clinical trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents;
- the risk that patients enrolled in clinical trials will drop out of the clinical trials before completion; and
- competing clinical trials and approved therapies available for patients.

In particular, some of our clinical trials will look to enroll patients with characteristics which are found in a very small population, for example, patients with rare cancers with specific attributes that are targeted with our product candidates. Our clinical trials will compete with other companies' clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our clinical trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials in these clinical trial sites. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy and antibody therapy, rather than enroll patients in any of our future clinical trials. Patients may also be unwilling to participate in our clinical trials because of negative publicity from adverse events in the biotechnology or gene therapy industries.

Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these clinical trials and adversely affect our ability to advance the development of our product candidates.

Any adverse developments that occur during any clinical trials conducted by academic investigators, our collaborators or other entities conducting clinical trials under independent INDs may affect our ability to obtain regulatory approval or commercialize our product candidates.

Rimiducid and CaspaCIDe-containing cell therapy constructs are being used by third parties in clinical trials for which we are collaborating or in clinical trials which are completely independent of our development programs. We have little to no control over the conduct of those clinical trials. If serious adverse events occur during these or any other clinical trials using our product candidates, the FDA and other regulatory authorities may delay, limit or deny approval of our product candidate or require us to conduct additional clinical trials as a condition to marketing approval, which would increase our costs. If we receive regulatory approval for any product candidate and a new and serious safety issue is identified in clinical trials conducted by third parties, the applicable regulatory authorities may withdraw their approval of the product or otherwise restrict our ability to market and sell our product. In addition, treating physicians may be less willing to administer our product due to concerns over such adverse events, which would limit our ability to commercialize our product.

Adverse side effects or other safety risks associated with our product candidates could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon product candidates, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Adoptive cell therapy with autologous and allogeneic T cells and NK cells is associated with a range of potentially severe immune-mediated adverse effects. In third party clinical trials involving CAR-T cells, the most prominent acute toxicities included symptoms thought to be associated with the release of cytokines, such as fever, low blood pressure and kidney dysfunction. Some patients also experienced toxicity of the central nervous system, such as confusion, cranial nerve dysfunction and speech impairment. Adverse side effects attributed to CAR-T cells were severe and life-threatening in some patients. The life-threatening events were related to kidney dysfunction and toxicities of the central nervous system. Severe and life-threatening toxicities occurred primarily in the first two weeks after cell infusion and generally resolved within three weeks. In the past, several patients have also died in clinical trials by others involving CAR-T cells. To date, CAR-NK cells have been associated with a lower frequency of cytokine release and fewer adverse events overall compared to CAR-T cells. However, efforts to increase the potency and proliferation of therapeutic NK cells may result in an increased risk of such reactions. In addition, genetic modifications to NK cells, such as the enablement of endogenous IL-15 production of may result in unanticipated toxicities.

Undesirable side effects observed in our clinical trials, whether or not they are caused by our product candidates, could result in the delay, suspension or termination of clinical trials by us, the FDA or other regulatory authorities for a number of reasons. In addition, because the patients in our clinical trials are suffering from life-threatening diseases, are often suffering from multiple complicating conditions and, in the case of transplant patients, are in a position of extreme immune deficiency at the time that they receive our therapy, it may be difficult to accurately assess the relationship between our product candidates and adverse events experienced by very ill patients. If we elect or are required to delay, suspend or terminate any clinical trial of any product candidates that we develop, the commercial prospects of such product candidates will be harmed and our ability to generate product revenues from any of these product candidates will be delayed or eliminated. Serious adverse events observed in clinical trials could hinder or prevent market acceptance of the product candidate at issue. Any of these occurrences may harm our business, prospects, financial condition and results of operations significantly.

Clinical trials are expensive, time-consuming and difficult to design and implement.

Human clinical trials are expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. Because our product candidates are based on relatively new technology, we expect that they will require extensive research and development and have substantial manufacturing and processing costs. Our off-the shelf, allogeneic product candidates are also difficult to manufacture due to complexities associated with screening and selection of healthy donors, T and NK cell expansion and banking, and cryopreservation for shipping and storage. Costs to treat patients with relapsed/refractory cancer and to treat potential side effects that may result from therapies such as our current and future product candidates can be significant. Accordingly, our clinical trial costs are likely to be significantly higher than for more conventional therapeutic technologies or drug products. In addition, our proposed product candidates involve several complex and costly manufacturing and processing steps, the costs of which will be borne by us. The costs of our clinical trials may increase if the FDA does not agree with our clinical development plans or requires us to conduct additional clinical trials to demonstrate the safety and efficacy of our product candidates.

We face significant competition from other biotechnology and pharmaceutical companies, and our operating results will suffer if we fail to compete effectively.

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our competitors may be able to develop other compounds or drugs that are able to achieve similar or better results. Our potential competitors include major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies and universities and other research institutions. Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations and well-established sales forces. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors, either alone or with collaborative partners, may succeed in developing, acquiring or licensing on an exclusive basis drug or biologic products that are more effective, safer, more easily commercialized or less costly than our product candidates or may develop proprietary technologies or secure patent protection that we may need for the development of our technologies and products. We believe the key competitive factors that will affect the development and commercial success of our product candidates are efficacy, safety, tolerability, reliability, convenience of use, price and reimbursement.

Specifically, genetically engineering T cells faces significant competition from multiple companies, including, Adaptimmune, Allogene Therapeutics, Inc., Atara Biotherapeutics, Inc., Autolus Therapeutics plc, bluebird bio, Inc., Bristol-Meyer Squibb Co., Celgene Corporation, Cellectis SA, Cell Medica Limited, Celyad S.A., Fate Therapeutics Inc., GlaxoSmithKline plc, Intrexon Corporation, Immune Design Corp., Gilead Sciences, Inc., Iovance Biotherapeutics, Inc., Janssen Pharmaceutical, Kiadis Pharma B.V., Legend

Biotech, Lyell Immunopharma, Inc., Medigene AG, MolMed S.p.A., Mustang Bio, Inc., NantKwest, Inc., Nkarta Inc., Novartis AG, Poseida Therapeutics, Precision Biosciences, Inc., Takeda Pharmaceutical Co, Unum Therapeutics, and Ziopharm Oncology.

Even if we obtain regulatory approval of our product candidates, the availability and price of our competitors' products could limit the demand and the price we are able to charge for our product candidates. We may not be able to implement our business plan if the acceptance of our product candidates is inhibited by price competition or the reluctance of physicians to switch from existing methods of treatment to our product candidates, or if physicians switch to other new drug or biologic products or choose to reserve our product candidates for use in limited circumstances. For additional information regarding our competition, see "Item 1. Business Competition" under Part I of our Annual Report.

We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management, scientific and medical personnel. The loss of the services of any of our executive officers, other key employees, and other scientific and medical advisors, and our inability to find suitable replacements could result in delays in product development and harm our business.

To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided stock options and restricted stock units, or RSUs, that vest over time. The value to employees of stock options and RSUs that vest over time may be significantly affected by movements in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us on short notice. Although we have employment agreements with our key employees, these employment agreements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. We do not maintain "key man" insurance policies on the lives of these individuals or the lives of any of our other employees. Our success also depends on our ability to continue to attract, retain and motivate highly skilled scientific and medical personnel.

The terms of our debt facility place restrictions on our operating and financial flexibility, and failure to comply with covenants or to satisfy certain conditions of the agreement governing the debt facility may result in acceleration of our repayment obligations and foreclosure on our pledged assets, which could significantly harm our liquidity, financial condition, operating results, business and prospects and cause the price of our common stock to decline.

In December 2017, we entered into a loan and security agreement, or the Loan Agreement, with Oxford Finance LLC, or Oxford, that is secured by a lien covering substantially all of our assets, excluding intellectual property, but including proceeds from the sale, license, or disposition of our intellectual property, under which we originally borrowed $35.0 million. On December 24, 2019, we entered into a First Amendment to Loan and Security Agreement, or the Amendment, with Oxford, in connection with the proposed sale of certain of our assets. The Loan Agreement was amended to, among other things: (i) provide for Oxford's consent to (a) our entry into an asset purchase agreement relating to the proposed sale of certain of our assets and (b) our consummation of such asset sale, provided such sale occurs on or prior to March 31, 2020; (ii) if such asset sale occurs on or prior to March 31, 2020, extend the interest-only period by up to 18 months; (iii) if the proposed asset sale closes on or prior to March 31, 2020, provide for a partial repayment of an amount that equals the vast majority of the proceeds the Company expects to receive at the closing of the asset sale, a portion of which will be applied as partial payment of a Final Payment Percentage (as defined in the Loan Agreement); and (v) if the proposed asset sale occurs on or prior to March 31, 2020, grant Oxford a security interest in our intellectual property as of the closing of the asset sale.

The Loan Agreement governing the debt facility requires us to comply with a number of covenants (affirmative and negative), including restrictive covenants that limit our ability to: incur additional indebtedness; encumber the collateral securing the loan; acquire, own or make investments; repurchase or redeem any class of stock or other equity interest; declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest; transfer a material portion of our assets; acquire other businesses; and merge or consolidate with or into any other organization or otherwise suffer a change in control, in each case subject to exceptions. In addition, subject to limited exceptions, Oxford could declare an event of default upon the occurrence of any event that it interprets as having a material adverse effect upon our business, operations, properties, assets, or financial condition or upon our ability to perform or pay the secured obligations under the Loan Agreement or upon the collateral or Oxford's liens on the collateral under the agreement, thereby requiring us to repay the loan immediately, together with a prepayment charge of up to 3% of the then outstanding principal balance and an end-of-term charge. Although, in and of itself, the occurrence of adverse results or delays in any clinical study or the denial, delay or limitation of approval of or taking of any other regulatory action by the FDA or another governmental entity will not constitute a material adverse effect under the Loan Agreement, Oxford may determine that such an event together with contemporaneous events or circumstances constitutes a material adverse effect upon our business, operations, properties, assets, or financial condition or upon our ability to perform or pay the secured obligations under the Loan Agreement. If we default under the facility, Oxford may accelerate all of our repayment obligations and, if we are unable to access funds to meet those obligations or to renegotiate our agreement, Oxford could take control of our pledged assets and we could immediately cease operations. If we were

to renegotiate our agreement under such circumstances, the terms may be significantly less favorable to us. If we were liquidated, Oxford's right to repayment would be senior to the rights of our stockholders to receive any proceeds from the liquidation. Any declaration by Oxford of an event of default could significantly harm our liquidity, financial condition, operating results, business, and prospects and cause the price of our common stock to decline.

We may incur additional indebtedness in the future. The debt instruments governing such indebtedness may contain provisions that are as, or more, restrictive than the provisions governing our existing indebtedness under the Loan Agreement with Oxford. If we are unable to repay, refinance or restructure our indebtedness when payment is due, the lenders could proceed against the collateral or force us into bankruptcy or liquidation.

The terms of our 2019 private placement of equity restrict our operating and financial flexibility, and give priority to certain investors, both of which could significantly harm our liquidity, financial condition, operating results, business and prospects and cause the price of our common stock to decline.

In August 2019 the Company completed an underwritten public offering of 575,000 shares of its Series 1 preferred stock and warrants to purchase up to 5,750,000 shares of its common stock. Concurrent with the public offering we entered into an agreement with certain institutional investors providing for a private placement, pursuant to which the Company agreed to sell at two or more separate closings, each at the option of the investors and subject to certain conditions, shares of Series 2 preferred stock and warrants to purchase common stock, and shares of Series 3 preferred stock and warrants to purchase common stock, for aggregate gross proceeds of up to $70.0 million. Pursuant to the terms of the securities purchase agreement for the private placement transaction, the investors in the private placement transaction have consent rights over certain significant matters of the Company's business. These include decisions to authorize or issue equity securities that are senior or pari passu to the Series 3 preferred stock with respect to liquidation preference, the incurrence of indebtedness in excess of $1,000,000, the sale or license of certain of the Company's technology and the payment of dividends. As a result, these stockholders, acting together, will have significant influence over certain matters affecting our business. The investors in the private placement may not exercise their rights to purchase additional tranches of preferred stock and may not consent to the Company seeking additional funds through debt or other equity financings. In addition, possible additional investors in the Company may decline to do so because of the preferential rights granted under the private placement agreement. Each of these factors could negatively impact our liquidity, financial condition, operating results, business and prospects and cause the price of our common stock to decline.

We recently announced the sale of our U.S. manufacturing facility to M.D. Anderson Cancer Center and, if a transaction is completed, we will be reliant on a third party to manufacture our clinical and commercial products and may not be able to secure adequate manufacturing capacity.

In 2019 we completed the buildout of manufacturing space at our leased headquarters in Houston, Texas and began in-house clinical supply manufacturing. However, the facility includes capacity far in excess of our current and near-term manufacturing needs and we decided to seek a partner for the facility with the goal of reducing our costs while maintaining dedicated cell therapy manufacturing capacity to support our product candidates. We recently announced the sale of our U.S. manufacturing facility to MD Anderson Cancer Center. If we close the transaction in which MD Anderson assumes ownership of the facility, we will be reliant on MD Anderson to supply all of our product candidates. We have endeavored to structure the transaction in a manner that ensures availability of adequate capacity and priority access thereto for the continued clinical development of our product candidates. Upon closing of the transaction, it will be necessary to transfer the equipment, personnel, processes, and know-how required to manufacture our products. Given the complexity of the manufacturing processes for cellular therapies, MD Anderson may be unable to effectively manufacture or release our products in accordance with applicable cGMP standards, which could result in significant costs or delays to our programs.

In addition, we may be unable to close the MD Anderson transaction or to identify an appropriate alternative entity with whom to partner the manufacturing facility or may be unable to conclude an agreement on acceptable terms. Failure to complete the transaction may negatively impact our ability to continue manufacturing in the facility and delay ongoing programs, or may require us to incur significant additional costs to support the unused capacity.

We need to oversee manufacturing of a complex supply chain of cellular therapy product candidates, viral vectors and small molecule drugs.

Because of the complex nature of our cell therapy products, we need to oversee the manufacture of multiple components that require a diverse knowledge base and appropriate manufacturing personnel. The supply chain for these components is separate and distinct, and no single manufacturer can supply more than one component of each of our products. Additionally, it is likely that the cell therapy products will need to be made within an appropriate geographic location for the area in which the products will be utilized, so one cell therapy manufacturing facility may not be able to supply diverse geographic areas. Any lack of capabilities to store, freeze, thaw and infuse our cell therapies would adversely affect our business and prospects.

Our autologous GoCAR-T product candidates, including BPX-601 and BPX-603 are manufactured on a patient-by-patient basis using each patient's own cells. Efficient manufacturing of these products relies upon our ability to sufficiently expand and activate the cells of patients who have undergone multiple lines of prior therapy, often including immunosuppressive chemotherapy. Our allogeneic

product candidates, including our off-the-shelf BCMA-NK cell construct, are also difficult to manufacture due to complexities associated with screening and selection of healthy donors, T and NK cell expansion and banking, and cryopreservation for shipping and storage. NK cells do not expand as well as T cells ex-vivo or in-vivo and it has been necessary to develop novel manufacturing methods and cellular modifications to improve expansion and proliferation. We have relatively little experience with this novel technology, and it is uncertain whether it will allow us to manufacture sufficient quantity and quality of targeted NK cells to conduct the necessary non-clinical and clinical trials.

We have not yet caused our product candidates to be manufactured or processed on a commercial scale. We may not be able to scale patient-by-patient manufacturing and processing to satisfy clinical or commercial demands for any of our product candidates. In addition, our anticipated reliance on a limited number of third-party manufacturers for manufacturing exposes us to the following risks:

- We may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited, and any replacement contractor must be approved by regulatory authorities. This approval would require new testing and compliance inspections. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of regulatory approval, if any.
- Our third-party manufacturers might be unable to timely formulate and manufacture our product or produce the quantity and quality required to meet our clinical and commercial needs, if any.
- Our future contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our products.
- Manufacturers are subject to ongoing periodic unannounced inspection by regulatory agencies to ensure strict compliance with cGMP and other government regulations and standards. We do not have control over third-party manufacturers' compliance with these regulations and standards.
- We may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our products.
- Our third-party manufacturers could breach or terminate their agreement with us.

Each of these risks could delay our clinical trials, the approval, if any of our product candidates or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. In addition, we will rely on third parties to perform release tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm.

We have limited information available regarding the ultimate cost of our products, and cannot estimate what the cost of our products will be upon commercialization, should that occur.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing and processing of our product candidates, and the actual cost to manufacture and process our product candidates could materially and adversely affect the commercial viability of our product candidates. As a result, we may never be able to develop a commercially viable product. Because of the patient-specific nature of our manufacturing process, it is not amenable to traditional "scale up" to manufacture larger lots as is performed for traditional drugs and biological agents.

Cell-based therapies rely on the availability of specialty raw materials, which may not be available to us on acceptable terms or at all.

Gene-modified cell therapy manufacture requires many specialty raw materials, some of which are manufactured by small companies with limited resources and experience to support a commercial product. Some suppliers typically support biomedical researchers or blood-based hospital businesses and may not have the capacity to support commercial products manufactured under cGMP by biopharmaceutical firms. The suppliers may be ill-equipped to support our needs, especially in non-routine circumstances like an FDA inspection or medical crisis, such as widespread contamination. We also do not have commercial supply arrangements with many of these suppliers and may not be able to contract with them on acceptable terms or at all. Accordingly, we may experience delays in receiving key raw materials to support clinical or commercial manufacturing.

In addition, some raw materials are currently available from a single supplier, or a small number of suppliers. We cannot be sure that these suppliers will remain in business, or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose.

A variety of risks associated with marketing our product candidates internationally could materially adversely affect our business.

We plan to seek regulatory approval of our product candidates outside of the U.S. and, accordingly, we will be subject to additional risks related to operating in foreign countries if we obtain the necessary approvals, including:

- differing regulatory requirements in foreign countries;

- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the U.S.;
- potential liability under the FCPA or comparable foreign regulations;
- challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the U.S.;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- differing payor reimbursement regimes, governmental payors or patient self-pay systems and price controls; and
- business interruptions resulting from geo-political actions, including war and terrorism.

These and other risks associated with our international operations may materially adversely affect our ability to attain or maintain profitable operations.

We may form or seek strategic alliances or enter into additional licensing arrangements in the future, and we may not realize the benefits of such alliances or licensing arrangements.

We may form or seek strategic alliances, create joint ventures or collaborations and enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. If we license products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. It is possible that, following a strategic transaction or license, we may not achieve the revenue or specific net income that justifies such transaction. Any delays in entering into new strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies for certain indications, which would harm our business prospects, financial condition and results of operations.

If we are unable to identify a strategic partner for rivo-cel, we may not realize value from this asset and we will continue to incur substantial costs.

We are actively pursuing a strategic partner for our CaspaCIDe-containing polyclonal T cell product candidate called rivogenleceucel, or rivo-cel. A partner would assume current and future development and commercialization responsibilities for this product candidate on a worldwide basis. Concurrently, we have substantially reduced and will continue to reduce our rivo-cel-related activities and spending. For example, we have closed our UK office, which was established to prepare for commercialization in Europe. If we are unable to identify an appropriate strategic partner or to negotiate and consummate a license agreement with such a partner, then we will not submit the planned Marketing Authorisation Applications (MAA) required to seek approval to commercialize this product candidate in Europe. Such a delay in the process of preparing and submitting the MAAa will make it more difficult for us or any possible strategic partner to restart the process in the future and ultimately obtain approval for the product, increasing the likelihood that we may be unable to derive any meaningful revenue from this asset. In addition, we are obligated to continue certain regulatory and clinical activities following conclusion of the rivo-cel clinical trials and if we are unable to identify a strategic partner, we will continue to incur the costs for the internal and external resources required to complete those activities.

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

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

We may use our financial and human resources to pursue a particular research program or product candidate and fail to capitalize on programs or product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited resources, we may forego or delay pursuit of opportunities with certain programs or product candidates or for indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs for product candidates may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through strategic collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate, or we may allocate internal resources to a product candidate in a therapeutic area in which it would have been more advantageous to enter into a partnering arrangement.

We and our contractors utilize hazardous materials in our business operations, and any claims relating to improper handling, storage, or disposal of these materials could harm our business.

Our activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by our third-party manufacturers. Our manufacturers are subject to federal, state and local laws and regulations in the U.S. governing the use, manufacture, storage, handling and disposal of medical and hazardous materials, and similar laws in other geographic regions. Although we believe that our manufacturers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could harm our business, prospects, financial condition or results of operations.

Our internal computer systems, or those used by our clinical investigators, contractors or consultants, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems and those of our contractors and consultants are vulnerable to damage from computer viruses and unauthorized access. While we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

System outages, network disruptions and cyber-security threats could interrupt the operation of our business.

We are dependent on the use of information technology systems for our operations. Outages, disruptions and threats could have an adverse impact on our ability to conduct operations. Cyber-security threats, such as malware, phishing and network attacks, are on the rise. These attacks can affect the availability of our information technology systems, including their data, as well as the confidentiality and integrity of these systems. A security breach poses a risk to confidential data, including but not limited to intellectual property and trade secrets resulting in financial, legal or reputational harm to us. Insider threats may exist if an individual authorized to access our technology systems improperly discloses sensitive data to unauthorized persons or the public. We also have outsourced elements of our operations, including elements of our information technology infrastructure, and thus manage several independent vendor relationships with third parties who may have access to our confidential information. Confidentiality agreements are in place for authorized users and third parties to support the prevention of confidential information being improperly disclosed. We have policies and procedures in place, including controls around the access and activity of authorized users, active system monitoring, back-up and recovery, information technology security and mandatory annual information technology security awareness training to assist in the prevention and mitigation of an outage, disruption or threat. In addition, we have invested in high availability, redundant technologies that will reduce the risk of an outage, disruption or threat. However, our efforts may not prevent an outage, disruption or threat that would materially adversely affect us. We also may not have sufficient liability insurance, either type or amount, to cover us against claims related to a cyber-security threat.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations, and those of our clinical investigators, contractors and consultants, could be subject to power shortages, telecommunications failures, water shortages, floods, earthquakes, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We rely on third-party manufacturers to produce and process our product candidates on a patient by patient basis. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: comply with the laws of the FDA and other similar foreign regulatory bodies; provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies, comply with manufacturing standards we have established, comply with healthcare fraud and abuse laws in the U.S. and similar foreign fraudulent misconduct laws, or report financial information or data accurately or to disclose unauthorized activities to us. If we obtain FDA approval of any of our product candidates and begin commercializing those products in the U.S., our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. These laws may impact, among other things, our current activities with principal investigators and research patients, as well as proposed and future sales, marketing and education programs. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commission(s), certain customer incentive programs and other business arrangements generally. Activities subject to these laws also involve the improper use of information obtained in the course of patient recruitment for clinical trials. The laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalties law, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid, or other third-party payors that are false or fraudulent or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government;
- HIPAA, which created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters;

- HIPAA, as amended HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;
- the federal Physician Payments Sunshine Act, and its implementing regulations, which requires certain manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the HHS, information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as require certain manufacturers and group purchasing organizations to report annually ownership and investment interests held by such physicians and their immediate family members;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and
- foreign laws that govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by or are in conflict with HIPAA, including the European Union General Data Protection Regulation, or the GDPR, which became effective on May 25, 2018, and which imposes privacy and security obligations on any entity that collects and/or processes health data from individuals located in the European Union. Under the GDPR, fines of up to 20 million euros or up to 4% of the annual global turnover of the infringer, whichever is greater, could be imposed for significant non-compliance. As well as complicating our compliance efforts, non-compliance with these laws could result in penalties or significant legal liability. The GDPR includes more stringent operational requirements for processors and controllers of personal data and creates additional rights for data subjects.

Additionally, we are subject to state and foreign equivalents of each of the U.S. healthcare laws described above, among others, some of which may be broader in scope and may apply regardless of the payor.

We have adopted a code of business conduct and ethics, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent inappropriate conduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, imprisonment, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our product candidates outside the U.S. will also subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

We expect that additional federal and state healthcare reform measures, such as further amendments and changes to the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or PPACA, will be adopted in the future, any of which could result in reduced demand for our products or other adverse effects on our business.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability as a result of the clinical testing of our product candidates and will face an even greater risk if we commercialize any products. We may be sued if our product candidates cause or are perceived to cause injury or are found to be otherwise unsuitable during clinical testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. For example, in May 2019, the Company was added as an additional defendant in an ongoing civil tort lawsuit in federal court in Los Angeles, California. The complaint alleges claims for wrongful death, negligence, breach of fiduciary duty, fraud, medical battery on decedent, medical battery on individual plaintiffs, products liability-failure to warn, breach of express warranty and products liability design or manufacturing defect. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit or cease commercialization of our product candidates. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, federal or state liability claims may result in:

- decreased demand for our product candidates;
- injury to our reputation;

- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to clinical trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize any product candidate; and
- a decline in our share price.

Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of any products we develop, alone or with corporate collaborators. We currently carry product liability insurance covering our clinical trials, with other coverage limits as appropriate for certain foreign jurisdictions. Although we maintain such insurance, our insurance policies may have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Even if our agreements with any future corporate collaborators entitle us to indemnification against losses, such indemnification may not be available or adequate should any claim arise.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2019, we had aggregate U.S. net operating loss carryforwards of approximately $390.3 million, and aggregate U.S. federal and Texas state research and development credits of approximately $11.3 million and $5.3 million, respectively. These net operating loss carryforwards could expire unused and be unavailable to offset future income tax liabilities. Under the Tax Cuts and Jobs Act, federal net operating losses incurred in taxable years ending after December 31, 2017 may be carried forward indefinitely, but the deductibility of federal net operating losses generated in tax years beginning after December 31, 2017 is limited. It is uncertain if and to what extent various states will conform to the Tax Cuts and Jobs Act. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change" (which is generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period), the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We may have experienced one or more ownership changes in the past, including with respect to our August 2019 public offering, and we may also experience additional ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control. If an ownership change occurs and our ability to use our net operating loss carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations.

Risks Related to Government Regulation

The regulatory approval process is lengthy and time-consuming, and we may experience significant delays in the clinical development and regulatory approval of our product candidates.

We have not previously submitted a BLA to the FDA, or similar approval filings to other foreign authorities. A BLA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety, purity and potency for each desired indication. It must also include significant information regarding the chemistry, manufacturing and controls for the product. We expect the novel nature of our product candidates to create further challenges in obtaining regulatory approval. For example, FDA's Office of Tissues and Advanced Therapies (OTAT) has limited experience with combination products that include a small molecule component. Approval of our GoCAR product candidates, will likely require this FDA office to consult with other divisions of the FDA, which may result in further challenges in obtaining regulatory approval, including in developing final product labeling. The regulatory approval pathway for our product candidates may be uncertain, complex, expensive and lengthy, and approval may not be obtained.

We may also experience delays in completing planned clinical trials for a variety of reasons, including delays related to:

- the availability of financial resources to commence and complete our planned clinical trials;

- reaching agreement on acceptable terms with prospective clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different clinical trial sites;
- recruiting suitable patients to participate in a clinical trial;
- having patients complete a clinical trial or return for post-treatment follow-up;
- clinical trial sites deviating from clinical trial protocol, failing to follow GCPs, or dropping out of a clinical trial;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of qualified materials under cGMPs and applying them on a subject by subject basis for use in clinical trials.

We could also encounter delays if physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles. Further, a clinical trial may be suspended or terminated by us, the IRBs for the institutions in which such clinical trials are being conducted, the Data Monitoring Committee for such clinical trial, or by the FDA or other regulatory authorities due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or clinical trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product candidate, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience termination of, or delays in the completion of, any clinical trial of our product candidates, the commercial prospects for our product candidates will be harmed, and our ability to generate product revenue will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product development and approval process and jeopardize our ability to commence product sales and generate revenue.

Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may ultimately lead to the denial of regulatory approval of our product candidates.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the EU or U.S., including additional preclinical studies or clinical trials. Studies and clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions.

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the EU and U.S. have requirements for approval of product candidates with which we must comply prior to marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Even if we receive regulatory approval of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and we may be subject to penalties and/or withdrawal of product approval if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any regulatory approvals that we receive for our product candidates will require surveillance to monitor the safety and efficacy of the product candidate. The FDA may also require a Risk Evaluation and Mitigation Strategy, or REMS, in order to approve our product candidates, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our product candidates will be subject to extensive and ongoing regulatory requirements. These requirements include, among other things, submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and GCPs for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of license approvals;
- suspension or termination of manufacturing at one or more manufacturing facilities;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's and other regulatory authorities' policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the U.S. or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, and we may not achieve or sustain profitability.

Foreign legislative changes may also affect our ability to commercialize our product candidates. Effective as of May 25, 2018, the GDPR imposes privacy and security obligations on any entity that collects and/or processes personal information from individuals located in the European Union. Under the GDPR, fines of up to 20 million euros or up to 4% of the annual global turnover of the infringer, whichever is greater, could be imposed for significant non-compliance.

Even if we obtain regulatory approval of our product candidates, the products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers, third-party payors and others in the medical community.

The use of engineered T cells and NK cells as potential cancer treatments is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers, third-party payors and others in the medical community. Many factors will influence whether our product candidates are accepted in the market, including:

- the clinical indications for which our product candidates are approved;
- physicians, hospitals, cancer treatment centers and patients considering our product candidates as a safe and effective treatment;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities;
- limitations or warnings contained in the labeling approved by the FDA or other regulatory authorities;
- the extent and quality of the clinical evidence supporting the efficacy and safety of our product candidates;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment in relation to alternative treatments;

- the pricing of our product candidates and the availability of adequate reimbursement by third-party payors and government authorities;
- the willingness and ability of patients to pay out-of-pocket in the absence of coverage by third-party payors, including government authorities;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies;
- confusion or lack of understanding regarding the effects of rimiducid and the timing and size of dosing of rimiducid after immune cell therapy; and
- the effectiveness of our sales and marketing efforts.

In addition, although we are not utilizing embryonic stem cells or replication competent vectors, adverse publicity due to the ethical and social controversies surrounding the therapeutic use of such technologies, and reported side effects from any clinical trials using these technologies or the failure of such clinical trials to demonstrate that these therapies are safe and effective may limit market acceptance our product candidates. If our product candidates are approved but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue.

Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our products, are more cost effective or render our products obsolete.

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

Market acceptance and sales of our product candidates will depend in large part on global reimbursement policies and may be affected by future healthcare reform measures, both in the United States and other key international markets. Patients who are prescribed medicine for the treatment of their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products. Therefore, successful commercialization of our products will depend in part on the availability of governmental and third-party payor reimbursement for the cost of our product candidates and/or payment to the physician for administering our product candidates. In the United States, no uniform policy of coverage and reimbursement for drug products exists among third-party payors. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained. One third-party payor's decision to cover a particular medical product or service does not assure that other payors will also provide coverage for the medical product or service, or to provide coverage at an adequate reimbursement rate. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that adequate coverage and reimbursement will be obtained. Further, a third-party payor's decision to provide coverage for a medical product or service does not imply that an adequate reimbursement rate will be approved. The market for our product candidates will depend significantly on access to third-party payors' formularies or lists of treatments for which third-party payors provide coverage and reimbursement. Third party payors may also have difficulty in determining the appropriate coverage of our product candidates, if approved, due to the fact that they are combination products that include a small molecule drug, rimiducid.

Third-party payors establish coverage and reimbursement policies for new products, including our product candidates. In particular, in the United States, private health insurers and other third-party payors often provide reimbursement for treatments based on the level at which the government (through the Medicare or Medicaid programs) provides reimbursement for such treatments. In the United States, the EEA and other significant or potentially significant markets for our product candidate, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in Canada and the EEA will put additional pressure on product pricing, coverage, reimbursement and utilization, which may adversely affect our product sales and results of operations. These pressures can arise from policies and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, coverage and reimbursement policies and pricing in general. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the PPACA, became law in the United States. PPACA substantially changed the way healthcare is financed by both governmental and private insurers and significantly affects the pharmaceutical industry. Among the provisions of the PPACA of greatest importance to the pharmaceutical industry are the following: (i) an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs; (ii) an increase in the rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for branded and generic drugs, respectively; (iii) a new Medicare Part D coverage gap discount program, in which manufacturers must now agree to offer 70% point-of-sale discounts to negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; (iv) extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations; (v) expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals with income at or below 133% of the Federal Poverty Level, thereby potentially increasing manufacturers' Medicaid rebate liability; (vi) expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; (vii) expansion of health care fraud and abuse laws, including the federal civil False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance; and (viii) a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

There remain judicial and Congressional challenges to other aspects of the PPACA, as well as efforts by the Trump administration to repeal or replace certain aspects of the PPACA. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the PPACA or otherwise circumvent some of the requirements for health insurance mandated by the PPACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the PPACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the PPACA have been signed into law. For example, the Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the PPACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. Congress may consider other legislation to replace elements of the PPACA. We continue to evaluate the potential effect of the possible repeal and replacement of the PPACA may have on our business.

In addition, other legislative changes have been proposed and adopted in the United States since the PPACA. For example, through the process created by the Budget Control Act of 2011, there are automatic reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and, following passage of the Bipartisan Budget Act of 2015, will remain in effect through 2029 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers.

Further, recently there has been heightened governmental scrutiny in the United States over the manner in which drug manufacturers set prices for their marketed products, in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent congressional inquiries and proposed federal legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration's budget proposal for fiscal year 2021 includes a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. Further, the Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services, or HHS, has solicited feedback on some of these measures and has implemented others under its existing authority. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We expect that additional federal and state healthcare reform measures will be adopted in the future, any of which could result in reduced demand for our products or other adverse effects on our business.

Certain countries have a very difficult reimbursement environment and we may not obtain reimbursement or pricing approval, if required, in all countries where we expect to market a product, or we may obtain reimbursement approval at a level that would make marketing a product in certain countries not viable.

We expect to experience pricing pressures in connection with the sale of any products that we may develop, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals. If we fail to successfully secure and maintain adequate coverage and reimbursement for our products or are significantly delayed in doing so, we

will have difficulty achieving market acceptance of our products and expected revenue and profitability which would have a material adverse effect on our business, prospects, financial condition and results of operations.

Due to the novel nature of our technology and the small size of our target patient populations, we face uncertainty related to pricing and reimbursement for these product candidates.

Our target patient populations for our potential product candidates are relatively small, as a result, the pricing and reimbursement of our product candidates, if approved, must be adequate to support commercial and manufacturing infrastructure. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell our product candidates will be adversely affected. The manner and level at which reimbursement is provided for services related to our product candidates, for example, reimbursement for administration of our product candidates to patients, is also important. Inadequate reimbursement for such services may lead to physician resistance and adversely affect our ability to market or sell our products.

We are subject to extensive laws and regulations related to data privacy, and our failure to comply with these laws and regulations could harm our business.

We are subject to laws and regulations governing data privacy and the protection of personal information. These laws and regulations govern our processing of personal data, including the collection, access, use, analysis, modification, storage, transfer, security breach notification, destruction and disposal of personal data. There are foreign and state law versions of these laws and regulations to which we are currently and/or may in the future, be subject. For example, the collection and use of personal health data in the European Union is governed by the GDPR. The GDPR, which is wide-ranging in scope, imposes several requirements relating to the consent of the individuals to whom the personal data relates, the information provided to the individuals, the security and confidentiality of the personal data, data breach notification and the use of third-party processors in connection with the processing of personal data. The GDPR also imposes strict rules on the transfer of personal data out of the European Union to the United States, provides an enforcement authority and imposes large monetary penalties for noncompliance. The GDPR requirements apply not only to third-party transactions, but also to transfers of information within our company, including employee information. The GDPR and similar data privacy laws of other jurisdictions place significant responsibilities on us and create potential liability in relation to personal data that we or our third-party service providers process, including in clinical trials conducted in the United States and European Union. In addition, we expect that there will continue to be new proposed laws, regulations and industry standards relating to privacy and data protection in the United States, the European Union and other jurisdictions, and we cannot determine the impact such future laws, regulations and standards may have on our business.

Additionally, California recently enacted legislation that has been dubbed the first “GDPR-like” law in the United States. Known as the California Consumer Privacy Act, or CCPA, it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. As of January 1, 2020, the CCPA requires covered companies to provide new disclosures to California consumers, provide such consumers new ways to opt-out of certain sales of personal information, and allow for a new cause of action for data breaches. As currently written, the CCPA will likely impact (possibly significantly) our business activities and exemplifies the vulnerability of our business to not only cyber threats but also the evolving regulatory environment related to personal data and protected health information.

We are subject to certain U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations, or collectively, Trade Laws. We can face serious consequences for violations.

Among other matters, Trade Laws prohibit companies and their employees, agents, clinical research organizations, legal counsel, accountants, consultants, contractors, and other partners from authorizing, promising, offering, providing, soliciting, or receiving directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of Trade Laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We engage third parties for clinical trials and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We also expect our non-U.S. activities to increase in time. We can be held liable for the corrupt or other illegal activities of our personnel, agents, or partners, even if we do not explicitly authorize or have prior knowledge of such activities.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department’s Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, or FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly,

improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Changes in funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including beginning on December 22, 2018 and ending on January 25, 2019, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If repeated or prolonged government shutdowns occur, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Risks Related to Our Intellectual Property

We depend on intellectual property licensed from third parties and termination of any of these licenses could result in the loss of significant rights, which would harm our business.

We are dependent on patents, know-how and proprietary technology, both our own and licensed from others. We license from Baylor College of Medicine, or Baylor, certain intellectual property related to methods for activating antigen presenting cells, to certain genetic constructs and to certain methods for inducing apoptosis. Baylor may terminate or modify our licenses in the event of a material breach by us that remains uncured following the date that is 90 days after written notice of such breach or upon certain insolvency events that remain uncured following the date that is 30 days following written notice of such insolvency event. In addition, we have funded certain of our clinical development activities and may fund certain of our future clinical development with funds from the State of Texas. The State of Texas may have rights to commercialize the results of those clinical trials if it determines that we have failed, after notice and an opportunity to cure, to use diligent and commercially reasonable efforts to commercialize or otherwise bring to practical application the results of the funded clinical trials. We are also dependent on our license agreements with Agensys, Inc. (a subsidiary of Astellas Pharma, Inc.) with respect to PSCA-targeted CARs, and BioVec Pharma Inc. with respect to making retrovirus for all of our programs. The termination of any of these licenses could have a material adverse effect on our business.

Any termination of these agreements, or other agreements to which we are a party could result in the loss of significant rights and could harm our ability to commercialize our product candidates.

Disputes may also arise between us and our licensors and other partners regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

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

We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize products could suffer.

If our efforts to protect the proprietary nature of our technologies are not adequate, we may not be able to compete effectively in our market.

Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market. Certain intellectual property which is covered by our in-license agreements has been developed at academic institutions which have retained non-commercial rights to such intellectual property.

There are several pending U.S. and foreign patent applications in our portfolio, and we anticipate additional patent applications will be filed both in the U.S. and in other countries, as appropriate. However, we cannot predict:

- if and when patents will issue;
- the degree and range of protection any issued patents will afford us against competitors including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- whether or not others will obtain patents claiming aspects similar to those covered by our patents and patent applications; or
- whether we will need to initiate litigation or administrative proceedings which may be costly whether we win or lose.

Composition of matter patents for biological and pharmaceutical products are generally considered to be the strongest form of intellectual property. We cannot be certain that the claims in our pending patent applications directed to compositions of matter for our product candidates will be considered patentable by the U.S. Patent and Trademark Office, or the USPTO, or by patent offices in foreign countries, or that the claims in any of our issued patents will be considered valid by courts in the U.S. or foreign countries. Method of use patents have claims directed to the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products “off-label.” Although off-label prescriptions may infringe or contribute to the infringement of method of use patents, the practice is common and such infringement is difficult to prevent or prosecute.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the U.S. or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, patents in our portfolio may not adequately exclude third parties from practicing relevant technology or prevent others from designing around our claims. If the breadth or strength of our intellectual property position with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced. Since patent applications in the U.S. and most other countries are confidential for a period of time after filing, it is possible that patent applications in our portfolio may not be the first filed patent applications related to our product candidates. Furthermore, for U.S. applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. For U.S. applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law with the passage of the America Invents Act (2012) which brings into effect significant changes to the U.S. patent laws that are yet untried and untested, and which introduces new procedures for challenging pending patent applications and issued patents. A primary change under this reform is creating a “first to file” system in the U.S. This will require us to be cognizant going forward of the time from invention to filing of a patent application.

We rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our product discovery and development processes that involve proprietary know-how, information, or technology that is not covered by patents. We require all of our employees to assign their inventions to us, and require all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements; however, it is possible that our trade secrets and other confidential proprietary information could be disclosed or that competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Furthermore, the laws of some foreign countries do not

protect proprietary rights to the same extent or in the same manner as the laws of the U.S. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the U.S. and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results and financial condition.

Third-party claims of intellectual property infringement may prevent or delay our product discovery and development efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including interference and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. Recently, under U.S. patent reform, new procedures including inter parties review and post grant review have been implemented. As stated above, this reform is untried and untested and will bring uncertainty to the possibility of challenge to our patents in the future. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents, of which we are currently unaware or have not sufficiently analyzed with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, the manufacturing process of our product candidates, constructs or molecules used in or formed during the manufacturing process, methods of use, including combination therapy or patient selection methods or any final product itself, the holders of any such patents may be able to block our ability to develop and commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. It is possible that any such license would not be available at all or on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly.

For example, we are aware of a third-party patent having claims directed to chimeric DNA comprising DNA segments encoding (1) a single chain antibody domain and (2) transmembrane and cytoplasmic domains of an endogenous protein. Even though we have reason to believe that our product candidates are not covered by claims of this patent, an owner or licensee of the patent still might bring a patent infringement suit against us. If the patent is asserted against us, we may not prevail in defending against claims of infringement and/or challenging the validity of claims in the patent. We may not successfully develop alternative technologies or enter into an agreement by which we obtain rights to the patent. These rights, if necessary, may not be available on terms acceptable to us.

We are aware of third-party patents having claims that may be considered as being directed to single-chain antibody fragments that bind to PSCA and these patents may be considered relevant to BPX-601 and related technologies we are developing. We currently are evaluating whether or not we need to obtain rights to these patents under a license, and if it is determined that we need to obtain such rights, whether these rights can be obtained. We are also aware of third-party patent applications having claims that may be considered as being directed to cellular therapy constructs utilizing a heterodimer domain for activation of caspase 9. We are monitoring these applications and if they are granted with the claims as drafted, they may be relevant to our potential dual-switch product candidates containing such a heterodimer activation domain.

Also, while we are aware there are other third-party patents having claims that may be considered relevant to technologies for which we are seeking, or plan to seek, regulatory approval, we believe those patents have a patent term that may expire prior to the time we expect to obtain regulatory approval for these technologies. The estimated expiration dates for those patents were determined according to information on the face pages of the patents, and certain factors that could influence patent term, such as patent term adjustment and patent term extension, for example, were not factored into these estimates. Accordingly, the estimated expiration dates of those

patents may not be accurate and one or more of those patents may not expire before we obtain regulatory approval for an applicable technology. Owners or licensees of one or more of those patents may bring a patent infringement suit against us. If one or more of those patents are asserted against us, we may be able to assert a defense for a safe harbor to patent infringement under 35 U.S.C. 271(e)(1) if certain requirements are met. It is possible that (1) certain of these requirements may not be met, and/or (2) one or more of the third-party patents might expire after one or more of our technologies obtain regulatory approval, and consequently we may not successfully assert such a defense to patent infringement. If we are unsuccessful in asserting a defense under 35 U.S.C. 271(e)(1), it is possible we may not prevail in defending against claims of infringement and/or challenging the validity of claims in those patents. We may not successfully develop alternative technologies or enter into agreements by which we obtain rights to applicable patents. These rights, if necessary, may not be available on terms acceptable to us.

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

Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights.

Our product candidates may also require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies, which may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

We may not be able to successfully complete negotiations and ultimately acquire the rights to the intellectual property that we may seek to acquire in the future.

We may be involved in lawsuits or other proceedings to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. It also is possible that a competitor we sue for patent infringement could countersue us for allegedly infringing one or more of their own patents or one or more patents they licensed from another entity. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure.

Interference proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. It also is possible that third parties could institute a patent office post-grant proceeding against one or more of our patents, or one or more patents licensed to us, such as a post grant review proceeding, inter parties review proceeding or reexamination proceeding at the USPTO, or an opposition proceeding in a jurisdiction outside the U.S. An unfavorable outcome in a post-grant proceeding could result in a loss of our patent rights. Litigation, interference proceedings or patent office post-grant proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. We also may not be able to prevent, alone or with our licensors, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the U.S.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Obtaining and maintaining our patents depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent position could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. Such noncompliance events are outside of our direct control for (1) non-U.S. patents and patent applications owned by us, and (2) patents and patent applications licensed to us by another entity. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

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

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate, as applicable, is invalid and/or unenforceable. In patent litigation in the U.S., defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the U.S. or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions, for example, opposition proceedings. Any such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art and that prior art that was cited during prosecution, but not relied on by the patent examiner, will not be revisited. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patents directed to our product candidates. A loss of patent rights could have a material adverse impact on our business.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the U.S. has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in the recent case, Assoc. for Molecular Pathology v. Myriad Genetics, Inc., the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. While we do not believe that any of the patents owned or licensed by us will be found invalid based on this decision, we cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents.

We have limited foreign intellectual property rights and may not be able to protect our intellectual property rights throughout the world.

We have limited intellectual property rights outside the U.S. Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the U.S. can be less extensive than those in the U.S. In addition, the laws of some foreign countries do not protect intellectual property to the same extent as federal and state laws in the U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patents to develop their own products and further, may export otherwise infringing products to territories where we have patents, but enforcement is not as strong as that in the U.S. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property in foreign jurisdictions. The legal systems of certain countries, particularly China and certain other developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property, particularly those relating to biopharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. To date, we have not sought to enforce any issued patents in these foreign jurisdictions. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. The requirements for patentability may differ in certain countries, particularly developing countries. Furthermore, generic drug manufacturers or other competitors may challenge the scope, validity or enforceability of our or our licensors' patents, requiring us or our licensors to engage in complex, lengthy and costly litigation or other proceedings. Certain countries in Europe and developing countries, including China and India, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees.

Risks Related to Ownership of our Common Stock

We are subject to securities litigation, which is expensive and could divert management attention.

Our share price has been and may continue to be volatile. Companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We are a target of this type of litigation. For example, on February 6, 2018, a purported securities class action complaint captioned *Nipun Kakkar v. Bellicum Pharmaceuticals, Inc., Rick Fair and Alan Musso* was filed against us, and certain of our officers in the U.S. District Court for the Southern District of Texas, Houston Division. A second substantially similar class action was filed on March 14, 2018 by plaintiff Frances Rudy against the same defendants in the same court. The lawsuits purport to assert class action claims on behalf of purchasers of our securities during the period from May 8, 2017 through January 30, 2018. The complaints allege that the defendants violated the Exchange Act by making materially false and misleading statements concerning our clinical trials being conducted in the U.S. to assess rivo-cel as an adjunct T-cell therapy administered after allogeneic hematopoietic stem cell transplantation. The complaints purport to assert claims for violations of Sections 10(b) and 20(a) of the Exchange Act and Rule 10b-5 promulgated thereunder. The complaints seek, on behalf of the purported class, an unspecified amount of monetary damages, interest, fees and expenses of attorneys and experts, and other relief. On April 9, 2018, the District Court consolidated the two lawsuits under the *Kakkar* action. On March 26, 2019, the court appointed lead plaintiffs to represent the putative class and on May 15, 2019, the plaintiffs filed an amended class action complaint. On July 5, 2019, defendants filed a motion to dismiss the amended complaint. Plaintiffs filed an opposition to the motion to dismiss on August 26, 2019 and the Company filed its reply to the opposition on September 22, 2019.

On July 19, 2018, a purported shareholder derivative complaint captioned *Seung Paik v. Richard A. Fair, et al.* was filed against the Company's directors and certain of the Company's officers in the U.S. District Court for the Southern District of Texas, Houston Division. The lawsuit purports to seek damages on behalf of the Company against the individual defendants for breach of fiduciary duty, waste, unjust enrichment and violations of Section 14(a) of the Exchange Act. The complaint alleges that the defendants caused or allowed the Company to disseminate misstatements regarding the clinical trials for rivo-cel and to make false or misleading statements in the proxy materials for the Company's 2017 annual meeting of stockholders. On October 3, 2018, the District Court granted the Company's motion to stay the derivative cause of action until reinstated on motion of the parties.

On July 8, 2019, another purported shareholder derivative complaint captioned *Scott Ludovissy and Ann Gordon Trammell v. Richard A. Fair, et al.* was filed against the same defendants in the same court. The *Ludovissy* complaint includes substantially similar factual allegations as the class action case and seeks to hold the defendants liable for allegedly causing the Company to make material misstatements.

Litigation of this type could result in substantial costs and diversion of management's attention and resources, which could adversely impact our business. Any adverse determination in litigation could also subject us to significant liabilities.

The price of our stock is volatile and you could lose all or part of your investment.

Prior to our December 2014 IPO, there was no public market for our common stock. The trading price of our common stock is likely to continue to be highly volatile and subject to wide fluctuations in response to various factors, some of which are beyond our control, including market conditions in general and a limited trading volume for our shares. In addition to the factors discussed in this "Risk Factors" section and elsewhere in our Annual Report, these factors include:

- the commencement, enrollment or results of the planned clinical trials of our product candidates or any future clinical trials we may conduct, or changes in the development status of our product candidates;
- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- adverse results or delays in our ongoing or future clinical trials;
- our decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial;
- adverse regulatory decisions, including failure to receive regulatory approval of our product candidates;
- changes in laws or regulations applicable to our products, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning our CID technology platform and our small molecule drug rimiducid;
- adverse developments concerning our contract manufacturers;
- changes in the structure of healthcare payment systems;
- our inability to maintain successful collaborations or to establish new collaborations if needed;
- our failure to commercialize our product candidates;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to the use of our product candidates;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth of our initial target markets;
- our ability to successfully treat additional types of diseases and cancers or at different stages;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry, or immunotherapy in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- changes in accounting practices;
- ineffectiveness of our internal controls;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;

- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and The Nasdaq Global Market and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results or financial condition.

We do not intend to pay dividends on our common stock, so any returns will be limited to the value of our stock.

We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, the terms of the Loan Agreement with Oxford restrict our ability to declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest. Any return to stockholders will therefore be limited to the appreciation of their stock.

Our principal stockholders and management own a significant percentage of our stock and can exert significant control over matters subject to stockholder approval.

Our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially own a significant portion of our voting stock, including shares subject to outstanding options. As a result, if these shareholders were to choose to act together, they would have the ability to significantly influence all matters requiring stockholder approval. For example, these stockholders may be able to significantly influence elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

As of December 31, 2019, we are no longer an "emerging growth company" and, as a result, are required to comply with increased disclosure and governance requirements.

As more than five fiscal years have passed since the December 18, 2014, listing of common stock listing on the NASDAQ, we ceased to be an "emerging growth company" as defined in the JOBS Act as of December 31, 2019. As such, we are subject to certain requirements that apply to other public companies but did not previously apply to us. These requirements include:

- the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that our independent registered public accounting firm provide an attestation report on the effectiveness of our internal control over financial reporting;
- the requirement to provide detailed compensation discussion and analysis in proxy statements and reports filed under the Exchange Act; and
- the "say on pay" provisions (requiring a non-binding stockholder vote to approve compensation of certain executive officers) and the "say on golden parachute" provisions (requiring a non-binding stockholder vote to approve golden parachute arrangements for certain executive officers in connection with mergers and certain other business combinations) of the Dodd-Frank Act and some of the disclosure requirements of the Dodd-Frank Act relating to compensation of our chief executive officer.

Therefore, this Annual Report is subject to Section 404(b) of the Sarbanes-Oxley Act, which requires that our independent registered public accounting firm provide an attestation report on the effectiveness of our internal control over financial reporting. Compliance with Section 404 is expensive and time consuming for management and could result in the detection of internal control deficiencies of which we are currently unaware. The loss of "emerging growth company" status and compliance with the additional requirements substantially increases our legal and financial compliance costs and make some activities more time consuming and costly.

Changes in accounting rules, assumptions and/or judgments could materially and adversely affect us.

Accounting rules and interpretations for certain aspects of our operations are highly complex and involve significant assumptions and judgment. These complexities could lead to a delay in the preparation and dissemination of our financial statements. Furthermore, changes in accounting rules and interpretations or in our accounting assumptions and/or judgments, such as asset impairments, could significantly impact our financial statements. In some cases, we could be required to apply a new or revised standard retroactively, resulting in restating prior period financial statements. Any of these circumstances could have a material adverse effect on our business, prospects, liquidity, financial condition and results of operations.

Our consolidated financial statements, including our liabilities and statements of operations are subject to quarterly changes in our accounting of our outstanding Series 1 Preferred Stock, warrants and related option fee proceeds.

In accordance with ASC Topic 815, *Accounting for Derivative Instruments and Hedging Activities*, and ASC Topic 480, *Liabilities-Distinguishing from Equity*, convertible preferred shares are accounted for as temporary equity and warrants are accounted for as

liabilities at their fair value during periods where they can be net cash settled in case of a change in control transaction. The warrants are accounted for as a liability at their fair value at each reporting period. The value of the derivative warrant liability is re-measured at each reporting period with changes in fair value recorded in earnings. To derive an estimate of the fair value of these warrants, the binomial model is utilized, adjusted for the effect of dilution, which embodies all of the requisite assumptions (including trading volatility, estimated terms, dilution and risk-free rates) necessary to determine the fair value of these instruments. This process requires the development of significant and subjective estimates that may, and are likely to, change over the duration of the instrument with related changes in internal and external market factors. Additionally, in connection with our August 2019 private placement we received option fee proceeds, or the Option Fee, which is accounted for as a liability. The value of the Option Fee is re-measured at each reporting period with changes in fair value recorded through earnings. As a result, our consolidated financial statements and results of operations may fluctuate quarterly, based on factors, such as the trading value of our common stock and certain assumptions, which are outside of our control. Consequently, our liabilities and consolidated statements of operations may vary quarterly, based on factors other than the Company's revenues and expenses. The liabilities and accounting line items associated with our derivative securities on our balance sheet and statement of operations are non-cash items, and the inclusion of such items in our financial statements may materially affect the outcome of our quarterly and annual results, even though such items are non-cash and do not affect the cash we have available for operations. Investors should take such derivative accounting matters and other non-cash items into account when comparing our quarter-to-quarter and year-to-year operating results and financial statements.

Sales of a substantial number of shares of our common stock by our existing stockholders in the public market could cause our stock price to fall.

Certain holders of our outstanding shares of common stock, are entitled to rights with respect to the registration of their shares under the Securities Act of 1933, as amended, or Securities Act. Any sales of these shares by such stockholders could have a material adverse effect on the trading price of our common stock.

We register on Form S-8 all shares of common stock that are issuable under our 2019 Equity Incentive Plan, as amended, or the EIP. As a consequence, these shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our EIP and shelf registration statement, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations, including conducting clinical trials, expanded research and development activities and costs associated with operating a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time, including pursuant to our shelf registration statement on Form S-3 that we filed with the SEC. If we sell common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Any such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the existing holders of our common stock.

We completed a public offering of our Series 1 preferred stock on August 21, 2019 and are obligated to issue shares of Series 2 and Series 3 preferred stock in connection with the concurrent private placement, and if we are required to redeem shares of preferred stock, our cash position will be negatively impacted. In addition, we may not have sufficient funds to redeem such shares of preferred stock.

We issued 575,000 shares of Series 1 preferred stock in connection with our August 2019 public offering and are obligated to issue up to 350,000 shares of Series 2 preferred stock and 250,000 shares of Series 3 preferred stock pursuant to the purchase agreement governing our August 2019 private placement.

Subject to the terms of our certificate of incorporation, at any time on or after August 21, 2024, some or all of our outstanding shares of preferred stock will be redeemable at the option of the holder at a redemption price of $100.00 per share of Series 1 and Series 2 preferred stock and $140.00 per share of Series 3 preferred stock, upon delivery of an irrevocable written notice to us. If a holder of preferred stock requests redemption we will be required to redeem such shares of preferred stock. However, we may be unable to redeem such preferred stock if restrictions under applicable law or contractual obligations prohibit such redemption. For example, Delaware law provides that a redemption on capital stock may only be paid from "surplus" or, if there is no "surplus," from a corporation's net profits for the then-current or the preceding fiscal year. Unless we operate profitably, our ability to redeem the preferred stock would require the availability of adequate "surplus," which is defined as the excess, if any, of our net assets (total assets less total liabilities) over our capital. To date, we have operated at a loss. Accordingly, if we do not have sufficient "surplus" under Delaware law, we would be unable to effect such redemption. If we do have sufficient "surplus" to effect such redemption, our available cash will be negatively impacted and our ability to use the net proceeds from this offering could be substantially limited. In addition, such reduction in our available cash could decrease the trading price of our common stock, and, accordingly, the preferred stock and our warrants.

The issuance or sale of shares of our common stock, or rights to acquire shares of our common stock, including the issuance of our securities pursuant to our August 2019 private placement, could depress the trading price of our common stock.

Under the terms of the private placement transaction, we are obligated to issue (i) up to 350,000 shares of Series 2 preferred stock, at a purchase price of $100.00 per share, and related warrants to purchase up to 2,800,000 shares of our common stock at an exercise price of $10.00 per share, and (ii) 250,000 shares of Series 3 preferred stock, at a purchase price of $140.00 per share, and related warrants to purchase up to 875,000 shares of our common stock at an exercise price of $14.00 per share, for aggregate gross proceeds of up to $70,000,000, to certain institutional investors in two or more separate closings, each to occur at such investors' discretion. In addition, we may conduct future offerings of our common stock, preferred stock or other securities that are convertible into or exercisable for our common stock to finance our operations or fund acquisitions, or for other purposes. If we issue additional shares of our common stock or rights to acquire shares of our common stock, if any of our existing stockholders sells a substantial amount of our common stock, or if the market perceives that such issuances or sales may occur, then the trading price of our common stock, and, accordingly, the trading price of our common stock may significantly decrease. In addition, our issuance of additional shares of common stock will dilute the ownership interests of our existing common stockholders.

Certain investors in the private placement will have the ability to control or significantly influence certain business decisions.

Pursuant to the terms of the securities purchase agreement for the private placement transaction, certain investors in the private placement transaction have consent rights over certain significant matters of the Company's business. These include decisions to authorize or issue equity securities that are senior or pari passu to the Series 3 preferred stock with respect to liquidation preference, the incurrence of indebtedness in excess of $1,000,000, the sale or license of the Company's iMC switch technology and the payment of dividends. As a result, these stockholders, acting together, will have significant influence over certain matters affecting our business.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the chairman of the board of directors, the chief executive officer, or by a majority of the total number of authorized directors;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue convertible preferred stock on terms determined by the board of directors without stockholder approval and which convertible preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. In the event securities or industry analysts that cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price may decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

ITEM 1B. Unresolved Staff Comments

None.

ITEM 2. Properties

As of December 31, 2019, the Company leased the following principle physical properties:

Location	Facilities
Houston, Texas	35,251 square feet for administrative and research and development activities
Houston, Texas	30,357 square feet for in-house cell therapy manufacturing activities
South San Francisco, California	13,943 square feet for office space

Leases for these leased facilities expire at various dates through the year 2026. We believe that our existing facilities are adequate to meet our current needs, and that suitable additional alternative spaces will be available in the future on commercially reasonable terms.

ITEM 3. Legal Proceedings

The information set forth under the “Litigation” subheading in Note 10 - Commitments and Contingencies of Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K is incorporated herein by reference.

ITEM 4. Mine Safety Disclosures

Not applicable.

PART II

ITEM 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock began trading on The Nasdaq Global Market on December 18, 2014 under the symbol "BLCM." Prior to such time, there was no public market for our common stock.

Holders of Record

As of February 28, 2020, there were approximately 15 stockholders of record of our common stock. Certain shares are held in "street" name and thus the actual number of beneficial owners of such shares is not known or included in the foregoing number.

Dividend Policy

We have never declared or paid any dividends on our common stock. In addition, the terms of the Loan Agreement with Oxford restrict our ability to declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects and other factors our board of directors may deem relevant.

Securities Authorized for Issuance under Equity Compensation Plans

Information about our equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report.

Recent Sales of Unregistered Securities

None.

ITEM 6. Selected Financial Data

As a smaller reporting company, we are not required to provide certain information typically disclosed under this item.

Our historical results for any prior period are not necessarily indicative of the results to be expected for any future period. The following selected financial data should be read in conjunction with our audited financial statements and the notes thereto and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" located elsewhere in this Annual Report.

	Year Ended	
(in thousands, except per share data)	December 31, 2019	December 31, 2018
Statement of Operations:		
Revenues	$ 7,143	$ 1,120
Total operating expenses	94,507	96,586
Other expenses, net	25,113	2,570
Net loss	(112,477)	(98,036)
Net loss per share		
Basic and diluted	$ (24.01)	$ (24.37)
Balance Sheet Data:		
Total assets	$ 116,250	$ 121,501
Total debt, net	36,717	35,832

ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with "Item 6. Selected Financial Data" and the financial statements and related notes included in "Item 8 - Financial Statements and Supplementary Data" in this Annual Report on Form 10-K. The following discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those expressed or implied in any forward-looking statements as a result of various factors, including those set forth under the caption "Item 1A. Risk Factors."

On February 5, 2020, we filed a Certificate of Amendment of the Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to (i) effect a reverse stock split of all issued and outstanding shares of our common stock at a ratio of 1-for-10 and (ii) reduce the number of authorized shares of our common stock from 200,000,000 to 40,000,000.

On February 5, 2020, we effected a reverse stock split of all issued and outstanding shares of our common stock at a ratio of 1-for-10, and reduced the number of authorized shares of our common stock from 200,000,000 to 40,000,000. Share related amounts have been retroactively adjusted in this Annual Report on Form 10-K to reflect this reverse stock-split for all periods presented.

Overview

We are a clinical stage biopharmaceutical company focused on discovering and developing novel, controllable cellular immunotherapies. We are designing new treatments for various forms of cancer, including both hematological cancers and solid tumors. We are advancing CAR-T and CAR-NK cell therapies which are an innovative approach in which a patient's or donor's T cells or NK cells, respectively, are genetically modified to carry chimeric antigen receptors, or CARs. We are using our proprietary Chemical Induction of Dimerization, or CID, technology platform to engineer our product candidates with switch technologies that are designed to control components of the immune system in real time. By incorporating our CID platform, our product candidates may offer better efficacy and safety outcomes than are seen with current cellular immunotherapies. For additional information about our business, and candidate development programs, see the discussions contained within "Item 1. Business" in this Annual Report.

Results of Operations

The following table sets forth our results of operations for the periods indicated:

	Year Ended		
(in thousands)	December 31, 2019	December 31, 2018	Change
Revenues	$ 7,143	$ 1,120	$ 6,023
Operating expenses:			
Research and development	64,535	71,588	(7,053)
General and administrative	29,972	24,998	4,974
Total operating expenses	94,507	96,586	(2,079)
Loss from operations	(87,364)	(95,466)	8,102
Other income (expense):			
Interest income	1,351	1,639	(288)
Interest expense	(4,280)	(4,199)	(81)
Change in fair value of warrant liability	(19,192)	—	(19,192)
Other expense	(2,992)	(10)	(2,982)
Total other expense	(25,113)	(2,570)	(22,543)
Net loss	$ (112,477)	$ (98,036)	$ (14,441)

Revenues

The increase in revenues for the year ended December 31, 2019, compared to the year ended December 31, 2018, was primarily due to a $5.0 million license fee received from the MD Anderson Cancer Center for use of our CaspaCIDe safety switch and from a $1.0 million increase in grant revenues due to the initiation of a clinical trial supported by the CPRIT grant.

Research and Development Expenses (R&D)

The decrease in R&D expenses for the year ended December 31, 2019, compared to the year ended December 31, 2018, was primarily due to reduced expenses related to rivo-cel, reductions in general R&D expenses, and reduced employee salary-related charges from the

reduction in force that was implemented during the second half of 2019. These decreases were partially offset by the impairment of an intangible asset previously recorded from a supply agreement with Miltenyi Biotec GmbH, increased expenses related to our GoCAR-T program, and employee severance costs arising from the aforementioned reduction in force.

General and Administrative Expenses (G&A)

The increase in G&A expenses for the year ended December 31, 2019, compared to the year ended December 31, 2018, was primarily due to an increase in personnel costs and commercialization activities during the first half of 2019 and severance costs arising from the reduction in force that was implemented during the second half of 2019. These increases were partially offset during the second half of 2019 by the reduction in rivo-cel related commercialization activities as well as the effects of the aforementioned reduction in force that reduced employee salary-related charges.

Other Income (Expense)

Other expense primarily consists of interest expense, changes in the fair value of our warrant liability and offering expenses incurred in the issuance of warrants and the private placement option, partially offset by interest income.

The increase in other income (expense) for the year ended December 31, 2019, compared to the year ended December 31, 2018, was primarily due to a $19.2 million loss recognized from the change in fair value of our warrant liability, which is remeasured at each reporting period, and $3.0 million in offering expenses incurred related to the August 2019 public offering and private placement option.

Liquidity and Capital Resources

Sources of Liquidity

At December 31, 2019, we had an accumulated deficit of approximately $533.0 million, a net loss of approximately $112.5 million, negative cash flows from operations of approximately $77.6 million, and cash, cash equivalents, and restricted cash of $93.8 million.

Our cash resources are primarily consumed by operating activities and we expect negative cash flows from operations to continue, for at least the next 12 months. Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, third-party clinical research and development services, laboratory and related supplies, clinical costs, legal and other regulatory expenses, facility costs and general overhead costs. Based on our current research and development plans and our timing expectations related to the progress of our programs, we believe that our cash and cash equivalents will be sufficient to fund our operating expenses and capital expenditure requirements through at least the first half of 2021.

We plan to continue to attempt to obtain future financing and/or engage in strategic transactions, but we cannot predict, with certainty, the outcome of our actions to generate liquidity, including the availability of additional equity or debt financing, or whether such actions would generate the expected liquidity as currently planned. If required, we may postpone or terminate some of our research and development programs and reduce our administrative costs.

In August 2018, we filed a registration statement on Form S-3 for the offer and sale by us of our securities in one or more offerings for up to an aggregate maximum offering price of $150.0 million, which became effective August 23, 2018. In July 2019, we filed an additional registration statement on Form S-3 for the offer and sale by us of our securities in one or more offerings for up to an aggregate maximum offering price of $400.0 million, which became effective July 30, 2019.

On October 5, 2018, we entered into an Open Market Sale Agreement, or the Sale Agreement, with Jefferies LLC, as sales agent, pursuant to which we had the ability to offer and sell, from time to time, through Jefferies, shares of our common stock having an aggregate offering price of up to $60.0 million. The shares were offered and sold pursuant to our shelf registration statement on Form S-3. During the year ended December 31, 2019, we received $9.0 million in net proceeds from the sale of 259,115 shares of our common stock in the open market. On August 16, 2019, we delivered written notice to Jefferies LLC that we were suspending and terminating the prospectus supplement related to the shares of our common stock issuable pursuant to the Sale Agreement. We will not make any sales of our securities pursuant to the Sales Agreement, unless and until a new prospectus supplement is filed. Other than the termination of the ATM Prospectus Supplement, the Sale Agreement remains in full force and effect.

On August 16, 2019, we entered into an underwriting agreement, or the Underwriting Agreement, with Jefferies LLC and Wells Fargo Securities, LLC, as representatives of the several underwriters named therein, or the Underwriters, relating to an underwritten public offering, or the Offering of 575,000 shares of our Series 1 Redeemable Convertible Non-Voting Preferred Stock, or the Series 1 Preferred Stock, and warrants, or the Public Warrants, to purchase up to 5,750,000 shares of our common stock. Each share of Series 1 Preferred Stock was sold together with a warrant to purchase 10 shares of common stock at a combined price to the public of $100.00. The offering closed on August 21, 2019, and the net proceeds to us from the Offering was approximately $53.9 million, after deducting underwriting

discounts and commissions and offering expenses payable by us and excluding any proceeds that we may receive upon exercise of the Public Warrants.

On August 16, 2019, we entered into a securities purchase agreement, or the Securities Purchase Agreement with certain institutional investors, or the Purchasers, pursuant to which we agreed to issue in a private placement (i) 350,000 shares of our Series 2 Redeemable Convertible Non-Voting Preferred Stock, at a purchase price of $100.00 per share, and related warrants to purchase up to 2,800,000 shares of our common stock at an exercise price of $10.00 per share, and (ii) 250,000 shares of our Series 3 Redeemable Convertible Non-Voting Preferred Stock, at a purchase price of $140.00 per share, and related warrants to purchase up to 875,000 shares of our common stock at an exercise price of $14.00 per share. The purchase and sale of the securities issuable under the Securities Purchase Agreement may occur in two or more separate closings, each to be conducted at the Purchasers' discretion within five days' notice to us. The Company received $11.3 million in net option fee proceeds upon the execution of the Securities Purchase Agreement.

Cash Flows

Operating Activities

Net cash used in operating activities during the year ended December 31, 2019, was $77.6 million compared to $74.8 million for the same period last year. The primary operating activities during the year ended December 31, 2019, were from (1) $112.5 million of net losses and (2) a $6.9 million decrease from changes in operating assets and liabilities, driven by a $3.0 million decrease in deferred revenue primarily due to CPRIT grant revenue recognition. These activities were partially offset by non-cash charges from (1) a $19.2 million change in the derivative warrant fair value liability, (2) $7.3 million of share-based compensation, (3) $7.2 million of depreciation and amortization expense, (4) $3.0 million expenses of issuance costs on warrants and private placement options, and (5) a $2.1 million impairment of the Miltenyi supply agreement.

Investing Activities

Net cash provided by investing activities during the year ended December 31, 2019, was $48.9 million compared to $10.4 million for the same period last year. The net cash provided by investing activities during the year ended December 31, 2019, was primarily due to proceeds from the sale of our investment in marketable securities of $49.4 million to fund our operations. The net cash provided by investing activities was partially offset by the purchase of $0.5 million of property and equipment.

Financing Activities

Net cash provided by financing activities during the year ended December 31, 2019, was $74.1 million compared to $68.1 million for the same period last year. The net cash provided by financing activities during the year ended December 31, 2019, was primarily due to (1) $30.9 million net proceeds from the issuance of warrants in a public offering, (2) $22.9 million net proceeds from issuance of redeemable convertible preferred stock in a public offering, (3) $11.2 million from net option fee proceeds and (4) $9.0 million net proceeds from issuance of common stock in a public offering.

Debt

On December 21, 2017 (the "Oxford Closing Date"), the Company entered into a loan and security agreement with Oxford Finance LLC, as the collateral agent and a lender, pursuant to which the Company borrowed $35.0 million in a single term loan (the "Oxford Loan") on the Oxford Closing Date. On the Oxford Closing Date, the Company used approximately $32.9 million of the proceeds from the Oxford Loan to repay its indebtedness to a previous lender. The Oxford Loan matures on December 1, 2022 and will be interest-only through January 31, 2020, followed by 35 equal monthly payments of principal and unpaid accrued interest.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements (as defined by applicable regulations of the SEC) that are reasonably likely to have a current or future material effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources. We do not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or for any other contractually narrow or limited purpose.

Critical Accounting Policies and Significant Estimates

Management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which are prepared in accordance with U.S. generally accepted accounting principles, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable

under the circumstances. In many instances, we could have reasonably used different accounting estimates, and in other instances changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ significantly from management's estimates under different assumptions or conditions. To the extent that there are material differences between these estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows will be affected. While our significant accounting policies are described in the notes to our financial statements, we believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies related to the more significant areas involving management's judgments and estimates. Our management has discussed the development and selection of these critical accounting estimates with the audit committee of our board of directors and the audit committee has reviewed the company's disclosure relating to it in this MD&A.

Warrant Derivatives

Freestanding warrants exercisable for multiple instruments are classified as liabilities. The Company accounts for these warrants in accordance with ASC Topic 815, *Accounting for Derivative Instruments and Hedging Activities* ("ASC 815"). The Company estimates the fair value of these liabilities using the binomial option model. The option pricing model of our warrant derivative liabilities are estimates and are sensitive to changes to certain inputs used in the pricing model. See Note 1 - Organization, Basis of Presentation, and Summary of Significant Accounting Policies for a discussion of how the Company accounts for its warrant derivatives.

Research and Development

Research and development expenses consist of expenses incurred in performing research and development activities, including compensation and benefits for research and development employees and consultants, facilities expenses, overhead expenses, cost of laboratory supplies, manufacturing expenses, fees paid to third parties and other outside expenses. We accrue for costs incurred as the services are being provided by monitoring the status of the clinical trial or project and the invoices received from our external service providers. We adjust our accrual as actual costs become known. See Note 1 - Organization, Basis of Presentation, and Summary of Significant Accounting Policies for a discussion of how the Company accounts for research and development expenses.

Share-Based Compensation

The Company's share-based awards include stock option grants and restricted stock awards. The estimated fair value for stock options, which determines the Company's calculation of compensation expense, is based on the Black-Scholes pricing model, which requires a number of estimates, including the expected lives of awards, interest rates, stock volatility and other assumptions. Additionally, we apply a forfeiture rate to estimate the number of grants that will ultimately vest, as applicable, and adjust the expense as these awards vest. See Note 1 - Organization, Basis of Presentation, and Summary of Significant Accounting Policies for a discussion of how the Company accounts for share-based compensation.

Recently Issued Accounting Pronouncements

On January 1, 2019, we adopted ASC 842 "*Leases*," which requires companies that lease assets to recognize a right-of-use asset and a lease liability, initially measured at the present value of the lease payments, in its balance sheet.

See Note 1 - Organization, Basis of Presentation, and Summary of Significant Accounting Policies for discussion regarding recent accounting pronouncements.

ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk

We had cash, cash equivalents and marketable securities totaling $91.0 million and $93.0 million at December 31, 2019 and 2018, respectively. Our cash is deposited in checking accounts with reputable financial institutions. The primary objective of our investment activities, of our cash equivalents and marketable securities, is to preserve our capital to fund our operations. We seek to realize income from our investments without assuming significant risk and we do not enter into investments for trading or speculative purposes.

Interest Rate Fluctuation Risk

A portion of our investments may be subject to interest rate risk and could fall in value if market interest rates increase. However, because our investments are primarily short-term in duration, we believe that our exposure to interest rate risk is not significant and a 1% movement in market interest rates would not have a significant impact on the total value of our portfolio. We actively monitor changes in interest rates.

Our net interest expense is sensitive to changes in the general level of interest rates. In this regard, changes in interest rates will affect our net interest expense, as well as the fair value of our debt, which bears a floating rate equal to the greater of (a) the 30-day

U.S. Dollar LIBOR rate reported in *The Wall Street Journal* on the last business day of the month that immediately precedes the month in which the interest will accrue and (b) 1.25%.

Foreign Currency Risk

We are exposed to changes in foreign currency exchange rates. We have contracts with entities in areas outside the U.S. that are denominated in a foreign currency. Most of our assets are located within the U.S. and are not subject to changes in foreign currency exchange rates, however a portion of our operating expense is denominated in foreign currencies, primarily pounds sterling and euros. We do not engage in any hedging transactions to mitigate the effect of changes in foreign currency exchange rates. While the effect of changes in foreign currency exchange rates has not had a material effect on our financial results or financial condition to date, we cannot assure you that fluctuations in foreign currency exchange rates will not have a material effect on our future results.

ITEM 8. Financial Statements and Supplementary Data

Index to Financial Statements

The financial statements of Bellicum Pharmaceuticals, Inc. listed below are set forth in Item 8 of this Annual Report for the year ended December 31, 2019:

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Bellicum Pharmaceuticals, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Bellicum Pharmaceuticals, Inc. (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders' (deficit) equity and cash flows for each of the two years in the period ended December 31, 2019, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control (2013 framework) and our report dated March 12, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2014.

Houston, Texas

March 12, 2020

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Bellicum Pharmaceuticals, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Bellicum Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Bellicum Pharmaceuticals, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the accompanying consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders' (deficit) equity and cash flows for each of the two years in the period ended December 31, 2019, and the related notes and our report dated March 12, 2020 expressed an unmodified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying "Management's Annual Report on Internal Control Over Financial Reporting". Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Houston, Texas

March 12, 2020

Bellicum Pharmaceuticals, Inc.
Consolidated Balance Sheets
(in thousands, except par value and share data)

	December 31,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 91,028	$ 43,695
Restricted cash, current	2,788	—
Investment securities, available for sale	—	49,304
Accounts receivable, interest and other receivables	303	909
Prepaid expenses and other current assets	884	1,387
Assets held for sale	16,851	—
Total current assets	111,854	95,295
Operating lease right-of-use assets	1,042	—
Property and equipment, net	2,529	20,878
Restricted cash, noncurrent	—	4,973
Other assets	825	355
Total assets	$ 116,250	$ 121,501
LIABILITIES, PREFERRED STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY		
Current liabilities:		
Accounts payable	$ 2,643	$ 3,774
Accrued expenses and other current liabilities	9,770	8,589
Warrant derivative liability	52,184	—
Private placement option liability	12,094	—
Current portion of long-term debt	11,000	—
Current portion of lease liabilities	454	40
Current portion of deferred revenue	—	2,983
Current portion of deferred rent	—	418
Liabilities held for sale	6,273	—
Total current liabilities	94,418	15,804
Long-term debt, net of deferred issuance costs	25,717	35,832
Long-term lease liabilities	864	91
Deferred rent	—	1,296
Total liabilities	120,999	53,023
Commitments and contingencies		
Preferred stock: $0.01 par value; 10,000,000 shares authorized		
Series 1 redeemable convertible preferred stock, $0.01 par value, 1,517,500 shares authorized and 538,000 shares issued and outstanding at December 31, 2019	21,468	—
Stockholders' (deficit) equity:		
Common stock, $0.01 par value; 40,000,000 shares authorized at December 31, 2019 and December 31, 2018, respectively; 5,076,593 shares issued and 5,008,846 shares outstanding at December 31, 2019; 4,424,205 shares issued and 4,356,459 shares outstanding at December 31, 2018	507	442
Treasury stock: 67,746 shares held at December 31, 2019 and December 31, 2018	(5,056)	(5,056)
Additional paid-in capital	511,684	493,784
Accumulated other comprehensive loss	(327)	(144)
Accumulated deficit	(533,025)	(420,548)
Total stockholders' (deficit) equity	(26,217)	68,478
Total liabilities, preferred stock and stockholders' (deficit) equity	$ 116,250	$ 121,501

The accompanying notes are an integral part of these consolidated financial statements.

Bellicum Pharmaceuticals, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share amounts)

	Year Ended December 31,	
	2019	2018
Revenues		
Grants	$ 2,143	$ 1,120
License fee revenue	5,000	—
Total revenues	7,143	1,120
Operating expenses		
Research and development	64,535	71,588
General and administrative	29,972	24,998
Total operating expenses	94,507	96,586
Loss from operations	(87,364)	(95,466)
Other income (expense):		
Interest income	1,351	1,639
Interest expense	(4,280)	(4,199)
Change in fair value of warrant liability	(19,192)	—
Other expense	(2,992)	(10)
Total other expense	(25,113)	(2,570)
Net loss	$ (112,477)	$ (98,036)
Net loss per common share attributable to common shareholders, basic and diluted	$ (24.01)	$ (24.37)
Weighted-average shares outstanding-basic and diluted	4,684,711	4,023,058
Net loss	$ (112,477)	$ (98,036)
Other comprehensive loss:		
Unrealized gain on available-for-sale securities, net of tax	45	1
Foreign currency translation adjustment	(228)	(99)
Comprehensive loss	$ (112,660)	$ (98,134)

The accompanying notes are an integral part of these consolidated financial statements.

Bellicum Pharmaceuticals, Inc.
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' (Deficit) Equity
(amounts in thousands, except share data)

	Series 1 Preferred		Common Stock		Treasury Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' (Deficit) Equity
	Shares	Amount	Shares	Amount	Shares	Amount				
Balance, December 31, 2017	—	—	3,396,264	$ 340	(67,746)	$ (5,056)	411,922	(322,512)	(46)	84,648
Share-based compensation	—	—	—	—	—	—	13,824	—	—	13,824
Exercise of stock options	—	—	101,680	10	—	—	3,260	—	—	3,270
Issuance of common stock - Employee Stock Purchase Plan	—	—	4,539	—	—	—	205	—	—	205
Issuance of common stock in a public offering, net	—	—	920,000	92	—	—	64,573	—	—	64,665
Issuance of common stock upon vesting of restricted stock units	—	—	1,722	—	—	—	—	—	—	—
Comprehensive loss	—	—	—	—	—	—	—	(98,036)	(98)	(98,134)
Balance, December 31, 2018	—	$ —	4,424,205	$ 442	(67,746)	$ (5,056)	$ 493,784	$ (420,548)	$ (144)	$ 68,478
Share-based compensation	—	—	—	—	—	—	7,338	—	—	7,338
Exercise of stock options	—	—	2,985	—	—	—	76	—	—	76
Issuance of common stock - Employee Stock Purchase Plan	—	—	8,000	1	—	—	97	—	—	98
Issuance of common stock upon vesting of restricted stock units	—	—	12,287	1	—	—	(1)	—	—	—
Issuance of common stock in open market transactions, net of issuance costs	—	—	259,116	26	—	—	8,951	—	—	8,977
Issuance of redeemable convertible preferred stock in public offering, net	575,000	22,944	—	—	—	—	—	—	—	—
Conversion of redeemable convertible preferred stock into common stock	(37,000)	(1,476)	370,000	37	—	—	1,439	—	—	1,476
Comprehensive loss	—	—	—	—	—	—	—	(112,477)	(183)	(112,660)
Balance, December 31, 2019	538,000	$21,468	5,076,593	$ 507	(67,746)	$ (5,056)	$ 511,684	$ (533,025)	$ (327)	$ (26,217)

The accompanying notes are an integral part of these consolidated financial statements.

Bellicum Pharmaceuticals Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,	
	2019	2018
Cash flows from operating activities:		
Net loss	$ (112,477)	$ (98,036)
Adjustments to reconcile net loss to net cash used in operating activities:		
Share-based compensation	7,338	13,824
Depreciation and amortization expense	7,175	6,698
Change in fair value of warrant derivative liability	19,192	—
Impairment of intangible assets	2,064	—
Amortization of (discount) premium on investment securities, net	(30)	94
Amortization of right-of-use assets	1,331	—
Accretion of lease liability	804	(276)
Amortization of deferred issuance costs	885	886
Loss on disposition of fixed assets	6	10
Warrant and private placement option issuance costs	3,047	—
Changes in operating assets and liabilities:		
Accounts receivable, interest and other receivables	606	(589)
Prepaid expenses and other assets	(1,096)	1,070
Accounts payable	(1,131)	460
Accrued liabilities and other	(2,300)	2,197
Deferred revenue	(2,983)	(1,120)
Net cash used in operating activities	(77,569)	(74,782)
Cash flows from investing activities:		
Purchases of investment securities	—	(59,335)
Proceeds from sale of investment securities	49,379	71,362
Purchases of property and equipment	(522)	(1,617)
Cash provided by investing activities	48,857	10,410
Cash flows from financing activities:		
Proceeds from issuance of common stock in a public offering, net	8,977	64,860
Proceeds from issuance of redeemable convertible preferred stock in a public offering, net	22,944	—
Proceeds from issuance of warrants in a public offering, net	30,888	—
Proceeds received from private placement option, net	11,152	—
Proceeds from exercise of stock options	76	3,270
Proceeds from issuance of stock from employee stock purchase plan	98	205
Payment on financing lease obligations	(47)	(31)
Payment of issuance costs on common stock	—	(195)
Net cash provided by financing activities	74,088	68,109
Effect of exchange rate changes on cash	(228)	(98)
Net change in cash, cash equivalents and restricted cash	45,148	3,639
Cash, cash equivalents and restricted cash at beginning of period	48,668	45,029
Cash, cash equivalents and restricted cash at end of period	$ 93,816	$ 48,668
Supplemental cash flow information:		
Cash paid during the period for interest	$ 3,201	$ 3,025
Non-cash investing and financing activities:		
Purchases of property and equipment in accounts payables and accrued liabilities	$ —	$ 27
Financing leases incurred for equipment	$ 167	$ —
Conversion of redeemable preferred stock into common stock	$ 1,476	$ —
Reclassification of property and equipment, net to assets held for sale	$ 12,039	$ —

The accompanying notes are an integral part of these consolidated financial statements.

NOTE 1 - ORGANIZATION, BASIS OF PRESENTATION, AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

Bellicum Pharmaceuticals, Inc., ("Bellicum"), is a clinical stage biopharmaceutical company focused on discovering and developing novel cellular immunotherapies for various forms of cancer, including both hematological cancers and solid tumors. Bellicum is devoting substantially all of its present efforts to developing next-generation product candidates in areas of cellular immunotherapy, including CAR-T and CAR-NK therapy.

Bellicum formed two wholly-owned subsidiaries, Bellicum Pharma Limited, a private limited company organized under the laws of the United Kingdom, and Bellicum Europe GmbH, a private limited liability company organized under German law. Both were formed for the purpose of developing product candidates in Europe. Bellicum, Bellicum Pharma Limited, Bellicum Europe GmbH and Bellicum Pharma GmbH are collectively referred to herein as the "Company". Bellicum Europe GmbH, a dormant Swiss subsidiary, was liquidated in the third quarter of 2019. All intercompany balances and transactions among the consolidated entities have been eliminated in consolidation.

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker. The Company has determined that it has one operating and reporting segment as it allocates resources and assesses financial performance on a consolidated basis. The Company's chief operating decision maker is its Chief Executive Officer who manages operations and reviews the financial information as a single operating segment for purposes of allocating resources and evaluating its financial performance.

Reverse Stock Split

On February 5, 2020, the Company filed a Certificate of Amendment of the Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to (i) effect a reverse stock split of all issued and outstanding shares of the Company's common stock at a ratio of 1-for-10 and (ii) reduce the number of authorized shares of the Company's common stock from 200,000,000 to 40,000,000.

On February 5, 2020, the Company effected a reverse stock split of all issued and outstanding shares of our common stock at a ratio of 1-for-10, and reduced the number of authorized shares of the Company's common stock from 200,000,000 to 40,000,000. The accompanying consolidated financial statements and notes to the consolidated financial statements gives retroactive effect to the reverse stock split for all periods presented.

Basis of Presentation

The accompanying financial statements have been prepared in conformity with the authoritative U.S. generally accepted accounting principles ("GAAP").

The accompanying financial statements have been prepared on a basis that assumes that the Company will continue as a going concern, and do not include any adjustments that may result from the outcome of this uncertainty. This basis of accounting contemplates the recovery of the Company's assets and the satisfaction of the Company's liabilities and commitments in the normal course of business and does not include any adjustments to reflect the possible future effects of the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might be necessary should the Company be unable to continue as a going concern. The Company has experienced net losses since its inception and if the Company does not successfully obtain regulatory approval and commercialize any of its product candidates, the Company will not be able to achieve profitability. As of December 31, 2019, the Company has an accumulated deficit of $533.0 million.

The Company is subject to risks common to companies in the biotechnology industry and the future success of the Company is dependent on its ability to successfully complete the development of, and obtain regulatory approval for, its product candidates, manage the growth of the organization, obtain additional financing necessary in order to develop, launch and commercialize its product candidates, and compete successfully with other companies in its industry.

The Company believes that its current capital resources, which consist of cash, cash equivalents and investments securities, are sufficient to fund operations through at least the next twelve months from the date the accompanying financial statements are issued based on the expected cash burn rate. The Company may be required to raise additional capital to fund future operations through the sale of additional equity, incurrence of additional debt allowed under existing debt arrangements, the entry into licensing or collaboration agreements with partners, grants or other sources of financing. Sufficient funds may not be available to the Company at all or on attractive terms when needed from equity or debt financings. If the Company is unable to obtain additional funding from these or other sources when needed, or to the extent needed, it may be necessary to significantly reduce its controllable and variable expenditures and current rate of spending through reductions in staff and delaying, scaling back, or suspending certain research and development, sales and marketing programs and other operational goals.

Reclassifications

Certain reclassifications have been made to prior year financial statements to conform to the current year presentation.

Use of Estimates

The preparation of the financial statements in accordance with GAAP requires management to make certain estimates and judgments that affect the reported amounts of assets, liabilities, revenue recognition, and expenses. Actual results could differ materially from those estimates.

Revenue Recognition

The Company’s sources of revenue in 2019 have been from its licensing agreement with The University of Texas MD Anderson Cancer Center, (“MD Anderson”) and from grants. Prior to 2019, the Company's only source of revenue was from grants.

Grant Revenue

When grant funds are received after costs have been incurred, the Company records revenue and a corresponding grant receivable. Cash received from grants in advance of incurring qualifying costs is recorded as deferred revenue and recognized as revenue when qualifying costs are incurred.

License Revenue

The promised services in license agreements consist of license rights to the Company’s intellectual property. When management believes the license to its intellectual property and products has stand-alone value, the Company recognizes revenue attributed to the license upon delivery.

The Company recognizes revenue when control of the promised goods or services is transferred to its customers, in an amount that reflects the consideration to which the Company expects to be entitled in exchange for the goods or services. In order to achieve that core principle, a five-step approach is applied: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue allocated to each performance obligation when the Company satisfies the performance obligation. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for revenue recognition.

The Company may provide options to additional items in the contracts, which are accounted for as separate contracts when the customer elects to exercise such options, unless the option provides a material right to the customer. The Company evaluates the customer options for material rights, or options to acquire additional goods or services for free or at a discount. If the customer options are determined to represent a material right, the material right is recognized as a separate performance obligation at the outset of the arrangement. Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer and are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised goods or services are distinct, the Company considers factors such as the stage of development of the underlying intellectual property, the capabilities of the customer to develop the intellectual property on its own or whether the required expertise is readily available and whether the goods or services are integral or dependent to other goods or services in the contract.

License agreements generally include certain milestone payments. The Company utilizes the “most likely amount” method to estimate the amount of variable consideration, to predict the amount of consideration to which it will be entitled for its license agreement. Amounts of variable consideration are included in the transaction price to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Milestone, annual maintenance, and royalty payments that are not within the control of the Company or the licensee, such as those dependent upon receipt of regulatory approval, are not considered to be probable of achievement until the triggering event occurs. At the end of each reporting period, the Company reevaluates the probability of achievement of each and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would

affect revenue and net loss in the period of adjustment. To date, the Company has not recognized any development, regulatory or commercial milestones or royalty revenue resulting from its license agreement. Consideration that would be received for optional goods and/or services is excluded from the transaction price at contract inception.

License Agreement

On January 22, 2019, the Company entered into a licensing and commercialization agreement with MD Anderson (the "MD Anderson License Agreement"). Under the MD Anderson License Agreement, the Company granted MD Anderson non-exclusive rights in certain Caspase-9 and related technologies and use of a small molecule known as rimiducid.

During the fourth quarter of 2019, and under the terms of the MD Anderson License Agreement, MD Anderson exercised an option to grant a non-exclusive sublicense of the rights licensed by the Company to MD Anderson under the MD Anderson License Agreement. MD Anderson, as a result of this exercise, granted a sublicense that entitled the Company to receive as consideration an upfront payment of $5.0 million in license fees as well as additional future annual maintenance fees, milestone payments related to the achievement of pre-specified development, regulatory, and commercialization events, and royalties of two percent on net sales of licensed products.

During the fourth quarter of 2019, the Company recognized $5.0 million of license fee revenue as delivery of the license occurred and the license to its Caspase-9 intellectual property has stand-alone value. To date, the Company has not received any milestones or royalty revenue resulting from the MD Anderson License Agreement.

Cancer Research Grant Contract

On August 9, 2017, the Company entered into a Cancer Research Grant Contract (the “CPRIT Agreement”) with the Cancer Prevention Research Institute of Texas (“CPRIT”), pursuant to which CPRIT awarded a grant of approximately $16.9 million to the Company to fund development of rivo-cel for hematologic cancer (the “CPRIT Award”). The CPRIT Award is contingent upon funds being available during the term of the CPRIT Agreement and subject to CPRIT’s ability to perform its obligations under the CPRIT Agreement.

The Company and CPRIT will retain joint ownership over any intellectual property developed under the CPRIT Agreement. With respect to non-commercial use of any intellectual property developed under the CPRIT Agreement (the “CPRIT Project Results”), the Company agreed to grant to CPRIT a sublicensable, nonexclusive, irrevocable, royalty-free, perpetual worldwide license to any intellectual property of the Company that is necessary to exploit the CPRIT Project Results. The CPRIT Agreement permits the Company to license any CPRIT Project Results, subject to the Company retaining an exclusive sublicensable license to exploit the CPRIT Project Results for non-commercial purposes.

The Company is obligated to make revenue-sharing payments to CPRIT with respect to net sales of any product covered by the CPRIT Agreement, up to a maximum repayment of 400% of the aggregate amount paid to the Company by CPRIT under the CPRIT Agreement. The payments are determined as a percentage of net sales ranging from the low to mid-single digits, which may be reduced if the Company is required to obtain a license from a third party to sell any such product. In addition, upon meeting the foregoing limitation on revenue-sharing payments, the Company agreed to make continued revenue-sharing payments to CPRIT of less than 1% of net sales.

During 2017, the Company received $4.2 million in advance funding from CPRIT, which was recorded as deferred revenue. During the years ended December 31, 2019 and 2018, the Company incurred expenses and recognized revenue of $2.1 million and $1.1 million, respectively, for work performed under the CPRIT grant.

The CPRIT Agreement was due to expire on February 29, 2020, but was terminated early by the Company on January 31, 2020.

Cash, Cash Equivalents, and Restricted Cash

The Company considers all short-term, highly liquid investments with maturity of three months or less from the date of purchase and that can be liquidated without prior notice or penalty, to be cash equivalents.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the balance sheets that sum to the total of the same such amounts shown in the statements of cash flows.

(in thousands)	December 31, 2019	December 31, 2018
Cash and cash equivalents	$ 91,028	$ 43,695
Restricted cash, current	2,788	—
Restricted cash, noncurrent	—	4,973
Total cash, cash equivalents and restricted cash shown in the statements of cash flows	$ 93,816	$ 48,668

During 2017, $4.2 million was received from CPRIT, and is being held in a separate account to be used for costs solely related to the CPRIT grant. Release of the CPRIT funds are subject to the terms of the grant agreement and requirements therein and require the authorization of CPRIT. To date, CPRIT authorized the release of $2.5 million of restricted funds from the CPRIT account, leaving a balance of $1.7 million recorded as restricted cash on the accompanying balance sheets at December 31, 2019.

The remaining $1.1 million of restricted cash as of December 31, 2019 is held in escrow to cover specific construction of manufacturing improvement costs related to the facility lease. The release of the escrowed funds is subject to the terms of the escrow agreement and requirements therein including approval by both the Company and the landlord based on authorized completion of certain aspects of the manufacturing improvements.

Investment Securities

Consistent with its investment policy, the Company invests its cash allocated to fund its short-term liquidity requirements with prominent financial institutions in bank depository accounts and institutional money market funds. The Company invests the remainder of its cash in corporate debt securities and municipal bonds rated at least A quality or equivalent, U.S. Treasury notes and bonds and U.S. and state government agency-backed securities.

The Company determines the appropriate classification of investment securities based on whether they represent the investment of funds available for current operations. The Company reevaluates its classification as of each balance sheet date. All investment securities owned are classified as available-for-sale. The cost of securities sold is based on the specific identification method. Investment securities are recorded as of each balance sheet date at fair value based on quoted prices in active markets, with unrealized gains and, to the extent deemed temporary, unrealized losses reported as accumulated other comprehensive gain (loss), a separate component of stockholders' (deficit) equity. Interest and dividend income on investment securities, accretion of discounts and amortization of premiums and realized gains and losses are included in interest income in the statements of operations and comprehensive loss.

An investment security is considered to be impaired when a decline in fair value below its cost basis is determined to be other than temporary. The Company evaluates whether a decline in fair value of an investment security is below its cost basis is other than temporary using available evidence. In the event that the cost basis of the investment security exceeds its fair value, the Company evaluates, among other factors, the amount and duration of the period that the fair value is less than the cost basis, the financial health of and business outlook for the issuer, including industry and sector performance, and operational and financing cash flow factors, overall market conditions and trends, the Company’s intent to sell the investment security and whether it is more likely than not the Company would be required to sell the investment security before its anticipated recovery. If a decline in fair value is determined to be other than temporary, the Company records an impairment charge in the statement of operations and comprehensive loss and establishes a new cost basis in the investment. To date, the Company has not identified any other than temporary declines in the fair value of its investment securities.

Assets Held for Sale

In 2019 the Company completed the buildout of manufacturing space at its leased headquarters in Houston, Texas and began in-house clinical supply manufacturing. However, the facility includes capacity far in excess of the Company's anticipated current and near-term manufacturing needs and management decided to seek a partner for the facility with the goal of reducing the Company's costs while maintaining dedicated cell therapy manufacturing capacity to support the Company's product candidates. The Company recently announced the sale of its U.S. manufacturing facility to MD Anderson Cancer Center. As of December 31, 2019, assets and liabilities relating to the Company's manufacturing facility and related laboratories and office space met the accounting standards criteria for assets held for sale. The net carrying value of property and equipment, net of $12.0 million and right-of-use assets of $4.8 million was reclassified to assets held for sale on the accompanying consolidated balance sheet as of December 31, 2019. The net carrying value of the current portion of lease liabilities of $1.5 million and of long-term lease liabilities of $4.8 million was reclassified to liabilities held for sale on the accompanying consolidated balance sheet as of December 31, 2019. The primary reason for the disposal is to reduce the Company's fixed operating expenses by transitioning from an in-house clinical supply manufacturer to a third party manufacturer. The disposal of the assets and liabilities is expected to be completed during the first quarter of 2020.

Property and Equipment

Furniture, equipment and software are recorded at cost and are depreciated using the straight-line method over the estimated useful lives of the related assets, which range from three to five years. Leasehold improvements are amortized over the shorter of the estimated useful life or the remaining lease term.

Property and equipment consisted of the following:

(in thousands, except useful lives)	Estimated Useful Lives	December 31, 2019	December 31, 2018
Leasehold improvements	5 Years	$ 3,944	$ 21,633
Lab equipment	5 Years	5,459	8,471
Office furniture	5 Years	392	1,704
Manufacturing equipment	5 Years	395	1,890
Computer and office equipment	3 to 5 Years	1,595	1,606
Equipment held under capital leases	5 Years	270	204
Software	3 Years	385	361
Total		12,440	35,869
Less: accumulated depreciation		(9,911)	(14,991)
Property and equipment, net		$ 2,529	$ 20,878

During the years ended December 31, 2019 and 2018, the Company recorded $7.0 million and $6.7 million of depreciation expense, respectively.

Intangible Assets

Non-refundable upfront payments related to a supply agreement with future benefits have been capitalized as an intangible asset, presented in other assets on the accompanying consolidated balance sheets and amortized over the term of the agreement. The amortization of the intangible asset is included in operating expenses in the accompanying consolidated statements of operations and comprehensive loss.

During the fourth quarter of 2019, the Company recorded $2.1 million of impairment charges related to the non-refundable upfront payments for the Miltenyi supply agreement that had been capitalized as an intangible asset. The Company recorded the impairment charge as a “Research and development” operating expense within the accompanying consolidated statements of operations and comprehensive loss. There were no other impairment charges related to long-lived assets for the years ended December 31, 2019 and 2018.

Impairment of Long-Lived Assets

The Company reviews long-lived assets for impairment when events or changes in business conditions indicate that their carrying value may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Accrued Expenses and Other Current Liabilities

Accrued expenses and other liabilities consist of the following:

	December 31, 2019	December 31, 2018
Accrued payroll	$ 2,032	$ 3,430
Accrued patient treatment costs	1,162	2,053
Accrued manufacturing costs	2,230	546
Accrued professional services	654	235
Accrued obligations under material supply agreements	1,121	—
Accrued construction costs	—	457
Accrued other	2,571	1,868
Total accrued expenses and other current liabilities	$ 9,770	$ 8,589

Debt Issuance Costs

Costs related to debt issuance are presented in the accompanying consolidated balance sheets as a direct deduction from the carrying amount of the debt liability, consistent with debt discounts and are amortized using the effective interest method. Amortization of debt issuance costs are included in interest expense in the accompanying statements of operations and comprehensive loss.

Warrant Derivatives

Freestanding warrants exercisable for multiple underlying instruments are classified as liabilities in the accompanying consolidated balance sheets. The Company accounts for these warrants at fair value on the date of issuance and are subject to re-measurement to fair value at each balance sheet date. Any change in fair value is recognized as a component of other income (expense) on the accompanying consolidated statements of operations and comprehensive loss.

The Company estimates the fair value of these liabilities using the binomial option model, adjusted for the effect of dilution, because it embodies all of the requisite assumptions (including trading volatility, estimated terms, dilution and risk-free rates) necessary to determine the fair value of this instrument. The Company will continue to adjust the liability for changes in fair value until the earlier of the exercise or expiration of the warrants or a change in control, as defined. The warrants are freely exercisable at any time from the issuance date until the expiration date, provided exercise does not cause a warrant holder to exceed a pre-determined beneficial ownership limit.

Private Placement Option

The Company has entered into a security purchase agreement that contains a call option on preferred shares that are puttable outside the control of the Company. The Company recorded the option as a liability and measured the fair value of the option at the time of issuance. The Company will re-measure the option to fair value at each balance sheet date and record changes in fair value in other income (expense) in the accompanying consolidated statement of operations and comprehensive loss at each reporting period. Offering expenses arising from the issuance of the private placement option were expensed as incurred.

Preferred Stock

Preferred shares issued by the Company that are subject to mandatory redemption are classified as liability instruments in the accompanying consolidated balance sheets and are measured at fair value at the date of issuance. Conditionally redeemable preferred shares (including preferred shares that feature redemption rights that are either within the control of the holder or subject to redemption upon the occurrence of uncertain events not solely within the Company’s control) are classified within mezzanine equity in the accompanying consolidated balance sheets. At all other times, preferred shares are classified within stockholders’ (deficit) equity.

Operating Leases

At the inception of a contractual arrangement, the Company determines whether the contract contains a lease by assessing whether there is an identified asset and whether the contract conveys the right to control the use of the identified asset in exchange for consideration over a period of time. If both criteria are met, upon lease commencement, the Company records a lease liability which represents the Company’s obligation to make lease payments arising from the lease, and a corresponding right-of-use (“ROU”) asset which represents the Company’s right to use an underlying asset during the lease term.

Operating leases are recognized as right-of-use, or ROU, assets and operating lease liabilities on the balance sheet based on the present value of the future minimum lease payments over the lease term at commencement date calculated using the Company's incremental borrowing rate applicable to the underlying asset unless the implicit rate is readily determinable. Any lease incentives received are deferred and recorded as a reduction of the ROU asset and amortized over the term of the lease. Rent expense, comprised of amortization of the ROU asset and the implicit interest accreted on the operating lease liability, is recognized on a straight-line basis over the lease term. The Company determines the lease term as the noncancellable period of the lease and may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. Leases with a term of 12 months or less are not recognized on the balance sheets.

Fair Value of Financial Instruments

Fair value is defined as the exchange price that would be received for an asset or an exit price paid to transfer a liability in an orderly transaction between market participants in a principal market on the measurement date.

Accounting standards include disclosure requirements around fair values used for certain financial instruments and establish a fair value hierarchy. The three-tier hierarchy defines a three-tiered valuation hierarchy for disclosures that prioritizes valuation inputs into three levels based on the extent to which inputs used in measuring fair value are observable in the market, as described further in Note 2.

Observable inputs reflect readily obtainable data from independent sources, and unobservable inputs reflect the Company’s market assumptions.

These inputs are classified into the following hierarchy:

Level 1 Inputs - quoted prices (unadjusted) in active markets for identical assets that the reporting entity has the ability to access at the measurement date;

Level 2 Inputs - inputs other than quoted prices included within Level 1 that are observable for the asset, either directly or indirectly; and

Level 3 Inputs - unobservable inputs for the assets.

The categorization of a financial instrument within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The Company believes the recorded values of its financial instruments, including cash and cash equivalents, accounts payable, accrued liabilities, and debt approximate their fair values due to the short-term nature of these instruments.

Financial Instruments and Credit Risks

Financial instruments that potentially subject the Company to credit risk include cash and cash equivalents, investment securities, and accounts receivable. The Company maintains cash and cash equivalents and investment securities with high credit quality counterparties, regularly monitors the amount of credit exposure to any one issuer and diversifies its investments in order to minimize its credit risk.

Equity Issuance Costs

Equity issuance costs represent costs paid to third parties in order to obtain equity financing. These costs have been netted against the proceeds of the equity issuances.

Licenses and Patents

Licenses and patent costs for technologies that are utilized in research and development and have no alternative future use are expensed as incurred. Costs related to the license of patents from third parties and internally developed patents are classified as research and development expenses. Legal costs related to patent applications and maintenance are classified as general and administrative expenses in the accompanying consolidated statements of operations and comprehensive loss.

Research and Development

Research and development expenses consist of expenses incurred in performing research and development activities, including compensation and benefits for research and development employees and consultants, facilities expenses, overhead expenses, cost of laboratory supplies, manufacturing expenses, fees paid to third parties and other outside expenses.

Research and development costs are expensed as incurred. Clinical trial and other development costs incurred by third parties are expensed as the contracted work is performed. The Company accrues for costs incurred as the services are being provided by monitoring the status of the clinical trial or project and the invoices received from its external service providers. The Company estimates depend on the timeliness and accuracy of the data provided by the vendors regarding the status of each project and total project spending. The Company adjusts its accrual as actual costs become known. Where contingent milestone payments are due to third parties under research and development arrangements, the milestone payment obligations are expensed when the milestone events are achieved.

Collaboration Agreements

The Company enters into collaboration agreements that include varying arrangements regarding which parties perform and bear the costs of research and development activities. The Company may share the costs of research and development activities with a collaborator, or the Company may be reimbursed for all or a significant portion of the costs of the Company's research and development activities. The Company records its internal and third-party development costs associated with these collaborations as research and development expenses. When the Company is entitled to reimbursement of all or a portion of the research and development expenses that it incurs under a collaboration, the Company records those reimbursable amounts as a deduction to the research and development expenses. If the collaboration is a cost-sharing arrangement in which both the Company and its collaborator perform development work and share costs, the Company also recognizes, as research and development expenses in the period when its collaborator incurs development expenses, the portion of the collaborator's development expenses that the Company is obligated to reimburse.

Contract Manufacturing Services

Contract manufacturing services are expensed as incurred. Prepaid expenses are capitalized and amortized as services are performed.

Share-Based Compensation

The Company accounts for share-based compensation based on the measurement and recognition of compensation expense for all share-based payment awards made to employees, directors and consultants to be recognized in the financial statements, based on their fair value.

The Company calculates the fair value of stock options on the date of grant using the Black-Scholes pricing model, which requires a number of estimates, including the expected life of awards, interest rates, stock volatility and other assumptions. Restricted stock is measured based on the fair market value of the underlying stock on the date of grant. If the awards are classified as liability awards, the fair value is remeasured at each reporting date and the compensation expense is adjusted accordingly. Additionally, the Company applies a forfeiture rate to estimate the number of grants that will ultimately vest, as applicable, and adjust the expense as these awards vest. All of the Company's current equity awards are service based awards and the share-based compensation cost is being recognized over the requisite service period of the awards on a straight-line basis.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. This method also requires the recognition of future tax benefits such as net operating loss and tax credit carry forwards, to the extent that realization of such benefits is more likely than not. A valuation allowance is recorded when the realization of future tax benefits is uncertain. The Company records a valuation allowance for the full amount of deferred tax assets, which would otherwise be recorded for tax benefits relating to the operating loss and tax credit carryforwards, as realization of such deferred tax assets cannot be determined to be more likely than not.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the statement of operations in the period that includes the enactment date.

As of December 31, 2019, the Company had recorded a full valuation allowance on its net U.S. and foreign deferred tax assets because the Company expects that it is more likely than not that its deferred tax assets will not be realized in the foreseeable future. Should the actual amounts differ from our estimates, the amount of our valuation allowance could be materially impacted.

The Company accounts for uncertain tax positions in accordance with the provisions of the Accounting Standards Codification (ASC) 740, *Income Taxes*. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2019 and 2018, the Company had no uncertain tax positions and no interest or penalties have been charged for the years ended December 31, 2019 and 2018. The Company is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress. The tax years 2005 through 2019 remain open to examination by the U.S. Internal Revenue Service.

Comprehensive Loss

Comprehensive loss is defined as the change in equity of a business enterprise during a period, from transactions, and other events and circumstances from non-owner sources. Components of other comprehensive loss includes, among other items, unrealized gains and losses on the changes in fair value of investments and unrealized gains and losses on the change in foreign currency exchange rates. These components are added, net of their related tax effect, to the reported net loss to arrive at comprehensive loss.

Net Loss and Net Loss per Share of Common Stock Attributable to Common Stockholders

Basic net loss per share attributable to common stockholders is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period without consideration for common stock equivalents. Diluted earnings per share is based on the treasury stock method and includes the effect from potential issuance of ordinary shares, such as shares issuable pursuant to the conversion of preferred stock to common stock, exercise of warrants to purchase common stock, exercise of stock options, and vesting of restricted stock units.

The following outstanding shares of common stock equivalents were excluded from the computations of diluted net loss per shares of common stock attributable to common stockholders for the periods presented as the effect of including such securities would be anti-dilutive.

	December 31, 2019	December 31, 2018
Common stock equivalents:	Number of Shares	
Redeemable convertible series 1 preferred stock	5,380,000	—
Warrants to purchase common stock	5,750,000	—
Options to purchase common stock	567,842	575,924
Unvested shares of restricted stock units	6,359	24,615
Total common stock equivalents	11,704,201	600,539

Application of New Accounting Standards

The Company adopted ASU 2016-02, *Leases (Topic 842)*, ("ASC 842") effective January 1, 2019, which required lessees to recognize a right-of-use asset and a corresponding lease liability for all leases with lease terms of greater than 12 months. ASC 842 provided for a modified retrospective transition approach allowing the Company to recognize and measure leases on the balance sheet at the beginning of either the earliest period presented or as of the beginning of the period of adoption with the option to elect certain practical expedients. The Company elected the optional transition method that allowed for a cumulative-effect adjustment in the period of adoption without a restatement of prior periods. As a result of the adoption, the Company adjusted its beginning balance of 2019 by recording operating lease ROU assets and liabilities through a cumulative-effect adjustment. The adoption of the new standard did not materially impact the Company's consolidated results of operations and cash flows and did not have an impact on the Company's beginning accumulated deficit balance.

The Company elected the 'package of practical expedients', which permitted it to not reassess its prior conclusions about lease identification, lease classification and initial direct costs. The Company did not elect the use of hindsight practical expedient. The new standard also provided practical expedients for an entity's ongoing accounting. The Company elected the short-term lease recognition exemption for all leases that qualify.

New Accounting Requirements and Disclosures

Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which modifies fair value disclosures and removes some disclosure requirements for both public and private companies. In addition, public companies are subject to some new disclosure requirements which requires to disclose the changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. ASU No. 2018-13 is effective for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early adoption is permitted. The Company does not expect the adoption of this standard to have a material effect on its financial statements.

Financial Instruments – Credit Losses

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments — Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which requires the measurement of all expected credit losses for financial assets including trade receivables held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. ASU No. 2016-13 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The Company does not expect the adoption of this standard to have a material effect on its financial statements.

In April 2019, the FASB issued ASU No. 2019-04, *Codification Improvements to Topic 326, Financial Instruments-Credit Losses, and Topic 825, Financial Instruments*, which provides practical expedients and policy elections related to the presentation and disclosure of accrued interest and the related allowance for credit losses and clarifies how to disclose line-of-credit arrangements that are converted to term loans. ASU No. 2019-04 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The Company does not expect the adoption of this standard to have a material effect on its financial statements.

NOTE 2 - FAIR VALUE OF MEASUREMENTS AND INVESTMENT SECURITIES

Investment Securities

The following tables present the Company's investment securities (including, if applicable, those classified on the Company's balance sheet as cash equivalents) that are measured at fair value on a recurring basis as of December 31, 2019 and 2018:

	Fair Value at December 31, 2019			Fair Value at December 31, 2018		
(in thousands)	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Cash Equivalents:						
Money market funds and treasury bills	$ 77,170	$ —	$ —	$ 24,953	$ —	$ —
Total Cash Equivalents	$ 77,170	$ —	$ —	$ 24,953	$ —	$ —
Investment Securities:						
U.S. government agency-backed securities	$ —	$ —	$ —	$ —	$ 7,383	$ —
Corporate debt securities	—	—	—	—	41,921	—
Total Investment Securities	$ —	$ —	$ —	$ —	$ 49,304	$ —

Money market funds, U.S. Treasury, U.S. government agency-backed securities, corporate debt securities and municipal bonds are valued based on various observable inputs such as benchmark yields, reported trades, broker/dealer quotes, benchmark securities and bids.

The Company did not have any investment securities classified as available-for-sale as of December 31, 2019. Investment securities classified as available-for-sale as of December 31, 2018 are presented in the below table:

(in thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Estimated Fair Value
December 31, 2018				
U.S. government agency-backed securities	$ 7,382	$ 2	$ (1)	$ 7,383
Corporate debt securities	41,968	—	(47)	41,921
Total	$ 49,350	$ 2	$ (48)	$ 49,304

Warrant Derivative Liability and Private Placement Option Liability

The Company's financial liabilities recorded at fair value on a recurring basis include the fair values of the warrant derivative liability and the private placement option liability. As of December 31, 2019, the fair values of the warrant derivative liability and the private placement option liability are classified as current liabilities in the accompanying consolidated balance sheets. These liabilities will be shown as current liabilities on the balance sheet when it is deemed more probable than not by management to be exercised within one year.

Inputs used to determine estimated fair value (Level 3) of the warrants include the fair value of the underlying stock relative to the warrant exercise price at the valuation measurement date, volatility of the price of the underlying stock, the expected term of the warrants, and risk-free interest rates.

The fair value of the warrants has been estimated with the following weighted-average assumptions:

	December 31, 2019	September 30, 2019	August 21, 2019
Risk-free interest rate	1.83%	1.62%	1.54%
Volatility	78.67%	70.89%	69.72%
Expected life (years)	6.64	6.89	7.00

The following table provides the warrant derivative and private placement option reported at fair value and measured on a recurring basis at December 31, 2019:

	Fair Value at December 31, 2019		
(in thousands)	Level 1	Level 2	Level 3
Warrant derivative liability	$ —	$ —	$ 52,184
Private placement option liability	—	—	12,094
Total fair value	$ —	$ —	$ 64,278

The ending balance of the Level 3 financial instruments presented above represents our best estimate of valuation and may not be substantiated by comparison to independent markets and, in many cases, could not be realized in immediate settlement of the instruments.

The table below provides the Level 3 liability adjustments for any issuances of warrants and private placement options and changes in fair value that occurred during the year ended December 31, 2019:

(in thousands)	Warrant Derivative Liability	Private Placement Option Liability	Total
Balance, December 31, 2018	$ —	$ —	$ —
Issuance of warrants	32,992	—	32,992
Private placement option liability	—	12,094	12,094
Change in fair value	19,192	—	19,192
Balance, December 31, 2019	$ 52,184	$ 12,094	$ 64,278

NOTE 3 - LEASES

The Company determines whether an arrangement is a lease at its inception. Operating leases relate primarily to office space and manufacturing facilities with remaining lease terms of one year to seven years, some of which include options to extend the lease term for up to five years. Management considered the options in determining the lease term used to establish the Company's ROU assets and lease liabilities.

The Company entered into a lease agreement for office space and equipment in South San Francisco, California commencing in April 2019 and expiring in 2022. The Company recorded right-of-use assets of $1.2 million and leased assets of $0.2 million for the real estate and equipment components of the lease, respectively, and a corresponding lease liability of $1.4 million upon lease commencement.

In July 2019, the Company exercised the first of its renewal options to extend its lease of office and laboratory space at its Houston, Texas facility for an additional year, commencing February 1, 2020. As a result of the lease renewal, the Company recorded an incremental ROU asset and lease liability of $1.0 million upon exercising the option.

As most of the Company's leases do not provide an implicit rate, the Company's incremental borrowing rate is based on the information available at lease commencement date and was used to determine the present value of lease payments. Components of lease cost are as follows:

(in thousands)	Year Ended December 31, 2019
Finance lease cost:	
Amortization of leased assets	$ 61
Interest on lease liabilities	25
Operating lease cost	2,135
Short-term lease cost	296
Total lease cost	$ 2,517
Weighted-average remaining lease term:	
Operating leases	5.2 years
Finance leases	2.4 years
Weighted-average discount rate:	
Operating leases	12.1%
Finance leases	13.4%

Supplemental cash flow information and non-cash activity related to the Company's operating and finance leases are as follows:

(in thousands)	Year Ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 2,378
Operating cash flows from finance leases	25
Financing cash flows from finance leases	47
Non-cash activity:	
Right-of-use assets obtained in exchange for lease obligations	$ 2,263

Maturities of lease liabilities by year for leases are as follows:

(in thousands)	Operating Leases	Financing Leases
2020	$ 2,663	$ 96
2021	1,673	90
2022	1,418	39
2023	1,143	—
2024	1,185	—
2025 and beyond	2,065	—
Total lease payments	10,147	225
Less: Imputed interest	(2,748)	(33)
Present value of lease liabilities	$ 7,399	$ 192

As of December 31, 2018, minimum lease payments under non-cancelable leases by period were expected to be as follows (in thousands):

Year	Operating Leases	Capital Leases
2019	$ 2,087	$ 68
2020	1,112	68
2021	1,055	43
2022	1,094	—
2023	1,133	—
Thereafter	3,222	—
Total minimum rentals	$ 9,703	$ 179

NOTE 4 - DEBT

Oxford Loan

On December 21, 2017 (the "Oxford Closing Date"), the Company entered into a loan and security agreement (the "Oxford Loan Agreement") with Oxford Finance LLC, as the collateral agent and a lender, pursuant to which the Company borrowed $35.0 million in a single term loan (the "Oxford Loan") on the Oxford Closing Date. On the Oxford Closing Date, the Company used approximately $32.9 million of the proceeds from the Oxford Loan to repay its indebtedness to a previous lender.

The Company's obligations under the Oxford Loan Agreement are secured by a first priority security interest in substantially all of the Company's current and future assets, other than its intellectual property. The Company has also agreed not to encumber its intellectual property assets, except as permitted by the Oxford Loan Agreement. The Oxford Loan matures on December 1, 2022 (the "Oxford Maturity Date") and will be interest-only through January 31, 2020, followed by 35 equal monthly payments of principal and unpaid accrued interest. The Oxford Loan bears interest at a floating per annum rate equal to (i) 7.25% plus (ii) the greater of (a) the 30-day U.S. Dollar LIBOR rate reported in The Wall Street Journal on the last business day of the month that immediately precedes the month in which the interest will accrue and (b) 1.25%. The interest rate on amounts borrowed under the Oxford Loan Agreement was 11.44% at December 31, 2019.

The Company will be required to make a final payment of 8.70% of the principal amount of the Oxford Loan borrowed (the "Oxford Final Payment Fee"), payable on the earlier of (i) the Oxford Maturity Date, (ii) the acceleration of the Oxford Loan, or (iii) the prepayment of the Oxford Loan. The Company may prepay all, but not less than all, of the borrowed amounts, provided that the Company will be obligated to pay a prepayment fee equal to (i) 3.00% of the outstanding principal balance if prepaid on or before the first anniversary of the Closing Date, (ii) 2.00% of the outstanding principal balance, if prepaid after the first anniversary and before the second anniversary of the Closing Date, and (iii) 1.00% of the outstanding principal balance prepaid thereafter and prior to the Maturity Date (each, a "Prepayment Fee"). While any amounts are outstanding under the Oxford Loan Agreement, the Company is subject to a number of affirmative and restrictive covenants, including covenants regarding delivery of financial statements, payment of taxes, maintenance of insurance, dispositions of property, business combinations or acquisitions, incurrence of additional indebtedness and transactions with affiliates, among other customary covenants. The Company is also restricted from paying dividends or making other distributions or payments of its capital stock, subject to limited exceptions. Upon the occurrence of certain events, including but not limited to the Company's failure to satisfy its payment obligations under the Oxford Loan Agreement, the breach of certain of its other covenants under the Oxford Loan Agreement, or the occurrence of a material adverse change, the collateral agent will have the right, among other remedies, to declare all principal and interest immediately due and payable, and the lender will have the right to receive the Oxford Final Payment Fee and, if the payment of principal and interest is due prior to the Oxford Maturity Date, a Prepayment Fee.

On December 24, 2019, the Company entered into a First Amendment to Loan and Security Agreement (the "Amendment") with Oxford Finance LLC, in connection with the proposed sale of certain assets of the Company. Pursuant to the Amendment, the Loan Agreement was amended to, among other things: (i) provide for the Collateral Agent's and the Lenders' consent to (a) the Company's entry into an asset purchase agreement relating to the proposed sale of certain of the Company's assets and (b) the Company's consummation of such asset sale, provided such sale occurs on or prior to March 31, 2020; (ii) if such asset sale occurs on or prior to March 31, 2020, extend the interest-only period by up to 18 months; (iii) if the proposed asset sale closes on or prior to March 31, 2020, provide for a partial repayment to the Lenders of an amount that equals the vast majority of the proceeds the Company expects to receive at the closing of the asset sale, a portion of which will be applied as partial payment of the Oxford Final Payment Fee; and (v) if the proposed asset sale occurs on or prior to March 31, 2020, grant the Lenders and the Collateral Agent a security interest in the Company's intellectual property as of the closing of the asset sale, in each case as set forth in the Amendment. In the event the proposed asset sale does not close on or prior to March 31, 2020, the Amendment provides that the Company, the Collateral Agent and the Lenders shall renegotiate the foregoing terms.

The Company paid expenses related to the Oxford Loan Agreement of $0.1 million, which, along with the final facility charge of $3.0 million, have been recorded as deferred issuance costs, which offset long-term debt on the Company's consolidated balance sheet. The deferred issuance costs are being amortized over the term of the loan as interest expense using the effective interest method. During the years ended December 31, 2019 and 2018, interest expense of amortized deferred issuance costs included $0.9 million and $0.9 million, respectively.

The future gross payments due under the Company's debt arrangements are as follows:

(in thousands)	Payments
Year 2020	$ 11,000
Year 2021	12,000
Year 2022	15,045
Total debt	$ 38,045
Less deferred issuance costs	(1,328)
Less current portion	(11,000)
Total long-term debt	$ 25,717

Management believes that the carrying value of the debt facility approximates its fair value, as the Company's debt facility bears interest at a rate that approximates prevailing market rates for instruments with similar characteristics. The fair value of the Company's debt facility is determined under Level 2 in the fair value hierarchy.

NOTE 5 - AUGUST 2019 PUBLIC OFFERING AND PRIVATE PLACEMENT

August 2019 Public Offering

On August 16, 2019, the Company entered into an underwriting agreement (the “Underwriting Agreement”) with Jefferies LLC and Wells Fargo Securities, LLC, as representatives of the several underwriters named therein (the “Underwriters”), relating to an underwritten public offering (the “Offering”) of 575,000 shares of the Series 1 Redeemable Convertible Non-Voting Preferred Stock of the Company (the “Series 1 Preferred Stock”) and warrants (the “Public Warrants”) to purchase up to 5,750,000 shares of its common stock. Each share of Series 1 Preferred Stock was being sold together with a warrant to purchase 10 shares of common stock at a combined price to the public of $100.00. Under certain circumstances, each warrant to purchase 10 shares of common stock will be exercisable, at the irrevocable election of the holder, for one share of Series 1 Preferred Stock. The offering closed on August 21, 2019, and the net proceeds to the Company from the Offering was approximately $53.8 million, after deducting underwriting discounts and commissions and offering expenses payable by the Company, and excluding any proceeds that the Company may receive upon exercise of the Public Warrants.

All of the Public Warrants sold in the Offering have an exercise price of $13.00 per share of common stock or, in certain circumstances, for $130.00 per share of Series 1 Preferred Stock, subject to proportional adjustments in the event of stock splits or combinations or similar events. The Public Warrants will be immediately exercisable upon issuance, provided that the holder will be prohibited, subject to certain exceptions, from exercising a warrant for shares of common stock to the extent that immediately prior to or after giving effect to such exercise, the holder, together with its affiliates and other attribution parties, would own more than 9.99% of the total number of shares of common stock then issued and outstanding, which percentage may be changed at the holder’s election to a lower percentage at any time or to a higher percentage not to exceed 19.99% upon 61 days’ notice to the Company. The Public Warrants will expire on August 21, 2026, unless exercised prior to that date.

Private Placement

On August 16, 2019, the Company entered into a securities purchase agreement (the “Securities Purchase Agreement”) with certain institutional investors named therein (the “Purchasers”), pursuant to which the Company has agreed to issue in a private placement (i) 350,000 shares of its Series 2 Redeemable Convertible Non-Voting Preferred Stock (the “Series 2 Preferred Stock”), at a purchase price of $100.00 per share, and related warrants (the “Private Warrants”) to purchase up to 2,800,000 shares of common stock at an exercise price of $10.00 per share, and (ii) 250,000 shares of its Series 3 Redeemable Convertible Non-Voting Preferred Stock (the “Series 3 Preferred Stock” and, together with the Series 1 Preferred Stock and Series 2 Preferred Stock, the “Preferred Stock”), at a purchase price of $140.00 per share, and related warrants (also, “Private Warrants”) to purchase up to 875,000 shares of common stock at an exercise price of $14.00 per share. The purchase and sale of the securities issuable under the private placement agreement may occur in two or more separate closings, each to be conducted at the Purchasers’ discretion within five days’ notice to the Company. The purchase and sale was subject to the Company’s obtaining stockholder approval for additional authorized shares of Common Stock or a reverse stock split (the “Required Stockholder Approval”), which occurred in the first quarter of 2020. The right of the Purchasers to purchase

such securities will expire two and a half years after the Required Stockholder Approval, on June 15, 2022, with respect to the Series 2 Preferred Stock, and three years after such stockholder approval, on January 15, 2023, with respect to the Series 3 Preferred Stock, if not exercised prior to that date.

The Company received $11.2 million in net option fee proceeds upon the execution of the Securities Purchase Agreement.

Total offering costs incurred by the Company related to the Public Warrants, Private Warrants and options amounted to $3.0 million, which are presented as other expense on the accompanying consolidated statements of operations and comprehensive loss.

NOTE 6 - WARRANT DERIVATIVE LIABILITY

In connection with the Company's August 2019 Public Offering, the Company issued immediately exercisable warrants ("Series 1 warrants") to purchase up to 5,750,000 shares of common stock and, under certain circumstances, each warrant to purchase 10 shares of common stock will be exercisable, at the irrevocable election of the holder, for one share of Series 1 Preferred Stock. The Company recorded the Series 1 warrants as a derivative liability in the accompanying consolidated balance sheet and is measured at fair value using a binomial model with gains or losses recognized in the consolidated statement of operations and comprehensive loss at the end of each reporting period. Offering expenses arising from the issuance of warrants were expensed as incurred.

The following table reflects the fair value roll forward reconciliation of the warrant derivative liability for the year ended December 31, 2019:

(in thousands)	Warrant Derivative Liability
Fair value of Series 1 warrants at the date of issuance, August 21, 2019	$ 32,992
Change in fair value	19,192
Fair value at December 31, 2019	$ 52,184

NOTE 7 - PRIVATE PLACEMENT OPTION LIABILITY

In August 2019, the Company executed the Securities Purchase Agreement in relation to the August 2019 private placement, and received net option fee proceeds of approximately $11.2 million. Pursuant to the Securities Purchase Agreement, the Company agreed to issue, in multiple private placements, Series 2 and 3 Preferred Stock and Private Warrants upon the request of the Purchasers, contingent on the Company obtaining the Required Stockholder Approval. The Company obtained the Required Stockholder Approval in the first quarter of 2020.

The right of the Purchasers to purchase such securities will expire two and a half years after the obtaining stockholder approval for additional authorized shares or a reverse stock split, with respect to the Series 2 Preferred Stock, and three years after such stockholder approval or such reverse stock split, with respect to the Series 3 Preferred Stock, if not exercised prior to that date.

The Company determined that the option fee is a liability because it can be exercised for Series 2 and 3 Preferred Stock that are puttable by the holder outside the control of the Company. The Company recorded the net proceeds of the Option Fee as a liability which approximates the fair value at December 31, 2019.

NOTE 8 - REDEEMABLE CONVERTIBLE PREFERRED STOCK

In August 2019, the Company sold Series 1 Preferred Stock pursuant to the Offering. The Company has 10,000,000 authorized shares of preferred stock with a par value of $0.01, of which the Company has designated 1,517,500 shares as Series 1 redeemable convertible non-voting preferred stock, 350,000 shares as Series 2 redeemable convertible non-voting preferred stock and 250,000 shares as Series 3 redeemable convertible non-voting preferred stock. There were 538,000 shares of Series 1 Preferred Stock issued and outstanding as of December 31, 2019. There were no shares of Series 2 or 3 Preferred Stock issued and outstanding as of December 31, 2019. There were no preferred shares issued and outstanding at December 31, 2018. The Series 1 Preferred Stock was issued together with warrants for a combined purchase price of $100.00 per share of Series 1 Preferred Stock and one warrant to purchase 10 shares of common stock. During the year ended December 31, 2019, 37,000 shares of Series 1 Preferred Stock were converted to common stock.

As of December 31, 2019, the Company classified the Series 1 Preferred Stock as temporary equity, as the Series 1 Preferred Stock is redeemable at the option of the holders upon passage of time, which is outside of the Company's control to prevent.

The Series 1 Preferred Stock is not currently redeemable and is only redeemable upon a fundamental change at a redemption price. The Company does not believe a fundamental change is considered probable until it occurs. Subsequent adjustment of the amount presented in temporary equity to its redemption amount is unnecessary if it is not probable that the instrument will become redeemable. As (i) the Series 1 Preferred Stock is only redeemable upon a fundamental change, the occurrence of which is not probable, and (ii) the occurrence of Transition Date (defined below) is probable, the Company did not accrete the Series 1 Preferred Stock to its redemption amount.

Optional Conversion

Each share of Preferred Stock is initially convertible into 10 shares of Common Stock. The conversion price at which Preferred Stock may be converted into shares of common stock, is subject to adjustment in connection with certain specified events.

Redemption

Until the applicable Transition Date (defined below), at any time on or after the date that is the fifth (5th) anniversary of the initial issue date of the applicable series of preferred stock, all or any portion of the preferred stock is redeemable at the option of the holder at a redemption price of $100.00 per share (for Series 1 and Series 2 Preferred Stock) and $140.00 per share (for Series 3 Preferred Stock). The “Transition Date” means:

- With respect to the Series 1 Preferred Stock, the first date following August 21, 2021, on which each of the Conditions (as defined below) is met (the “Series 1 Transition Date”);
- With respect to the Series 2 Preferred Stock, the first date following the six-month anniversary of the Series 1 Transition Date on which each of the Conditions is met (the “Series 2 Transition Date”); and
- With respect to the Series 3 Preferred Stock, the first date following the six-month anniversary of the Series 2 Transition Date on which each of the Conditions is met.

The “Conditions” mean: (1) the closing price of the Company’s common stock has been equal to or exceeded $25.00 per share for 180 calendar days (for determining if the Conditions are met for the Series 1 Preferred Stock and Series 2 Preferred Stock) and $35.00 per share (for the Series 3 Preferred Stock) for 180 calendar days; (2) the 50-day average trading volume of the Company’s common stock on the Nasdaq stock market is greater than 50,000 shares; and (3) a Phase 3 or Phase 2 pivotal clinical trial for one of the Company’s CAR-T product candidates has been initiated, meaning that at least one clinical trial site has been activated.

Dividends

Shares of Preferred Stock will be entitled to receive dividends equal to (on an as-if-converted-to-common stock basis), and in the same form and manner as, dividends actually paid on shares of common stock.

Liquidation

Until the applicable Transition Date, in the event of a liquidation, dissolution, winding up or deemed liquidation, holders of the Preferred Stock will receive a payment equal to the applicable per share purchase price of their Preferred Stock before any proceeds are distributed to the holders of Common Stock. The liquidation preferences, protective voting provisions and redemption rights of the Preferred Stock will terminate upon the occurrence of certain events.

Voting

Shares of Preferred Stock will generally have no voting rights, except to the extent expressly provided in the Company’s certificate of incorporation or as otherwise required by law.

NOTE 9 - STOCKHOLDERS' EQUITY AND SHARE-BASED COMPENSATION PLANS

Stockholder's Equity

On April 20, 2018, the Company completed an underwritten public offering of 920,000 shares of its common stock at a price of $75.00 per share, for an aggregate offering size of $69.0 million, pursuant to a registration statement on Form S-3. The net proceeds to the Company, after deducting underwriting discounts, and commissions and offering expenses was approximately $64.7 million.

On October 5, 2018, the Company entered into an Open Market Sale Agreement (the “Sale Agreement”) with Jefferies LLC ("Jefferies"), as sales agent, pursuant to which the Company may offer and sell, from time to time, through Jefferies, shares of the Company’s common

stock having an aggregate offering price of up to $60.0 million. The shares will be offered and sold pursuant to the Company's prospective supplement to its shelf registration statement on Form S-3 (the "Prospective Supplement"). During the year ended December 31, 2019, the Company received $9.0 million in net proceeds from the sale of 259,115 shares of its common stock in the open market. On August 16, 2019, in connection with the Public Offering, the Company delivered written notice to Jefferies that the Company was suspending and terminating the Prospectus Supplement related to the shares of its common stock issuable pursuant to the Sale Agreement. The Company will not make any sales of its securities pursuant to the Sales Agreement, unless and until a new prospectus supplement is filed. Other than the termination of the Prospectus Supplement, the Sale Agreement remains in full force and effect.

Share-Based Compensation Plans

The Company has five share-based compensation plans, including the 2019 Equity Incentive Plan the ("2019 Plan") which was adopted in June 2019. Each plan authorizes the granting of shares of common stock and options to purchase common stock to employees and directors of the Company, as well as non-employee consultants, and allows the holder of the option to purchase common stock at a stated exercise price. The only plan under which the Company may currently grant equity awards is the 2019 Plan although there remain outstanding awards under the other four plans. Options vest according to the terms of the grant, which may be immediately or based on the passage of time, generally over four years, and have a term of up to 10 years. Unexercised stock options terminate on the expiration date of the grant. The Company recognizes the share-based compensation expense over the requisite service period of the individual grantees, which generally equals the vesting period.

2019 Equity Incentive Plan

The 2019 Plan, is designed to secure and retain the services of the Company's employees and directors. The 2019 Plan is successor to and continuation of the 2014 Equity Incentive Plan, as amended, the ("2014 Plan"), and no additional awards may be issued from the 2014 Plan. Subject to adjustment for certain changes in the Company's capitalization, the aggregate number of shares of common stock that may be issued under the 2019 Plan, or the Share Reserve, will not exceed the sum of (i) 250,000 new shares, plus (ii) an additional 600,000 shares that were approved at the Company's Special Meeting of Stockholders in January 2020, and plus (iii) the Prior Plans' Returning Shares, as defined in the 2019 Plan documents, in an amount not to exceed 600,540 shares, including any stock award granted under the 2014 Plan, 2011 Stock Option Plan, as amended, or 2006 Stock Option Plan, as amended, that were outstanding as of the date the 2019 Plan was approved by the Company's stockholders, as such shares become available from time to time.

The following shares of common stock, or the 2019 Plan Returning Shares, will also become available again for issuance under the 2019 Plan: (i) any shares subject to a stock award granted under the 2019 Plan that are not issued because such stock award expires or otherwise terminates without all of the shares covered by such stock award having been issued; (ii) any shares subject to a stock award granted under the 2019 Plan that are not issued because such stock award is settled in cash; and (iii) any shares issued pursuant to a stock award granted under the 2019 Plan that are forfeited back to or repurchased by the Company because of a failure to vest.

The 2019 Plan provides for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, and other stock awards.

At December 31, 2019 and 2018, outstanding awards were comprised of the following:

	December 31, 2019	December 31, 2018
Options	471,282	401,535
Inducement option awards	96,560	122,500
Restricted stock units	5,609	19,490
Inducement restricted stock units outstanding	750	5,125
Total outstanding awards	574,201	548,650

Grant Date Fair Value

The valuation of the share-based compensation awards is a significant accounting estimate that requires the use of judgments and assumptions that are likely to have a material impact on the financial statements. The fair value of option grants is determined using the Black-Scholes option-pricing model. Expected volatilities utilized in the model are based on historical volatility of the Company's common stock. Similarly, the dividend yield is based on historical experience and the estimate of future dividend yields. The risk-free interest rate is derived from the U.S. Treasury yield curve in effect at the time of grant. The expected term of the options is based on the average period the stock options are expected to remain outstanding. As the Company does not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior, the expected term is calculated as the midpoint between the weighted-average vesting term and the contractual expiration period also known as the simplified method.

The fair value of the option grants has been estimated, with the following weighted-average assumptions:

	Year Ended	
	December 31, 2019	December 31, 2018
Options granted	276,830	262,319
Weighted-average exercise price	26.12	68.79
Weighted-average grant date fair value	16.99	45.10
Assumptions:		
Risk-free interest rate	2.23%	2.67%
Volatility	72%	72%
Expected life (years)	6.04	6.08
Expected dividend yield	—%	—%

Share-Based Compensation Activity

The following table summarizes the stock option activity for all stock plans during the year ended December 31, 2019 and 2018 as follows:

Options	Outstanding Stock Options		Weighted Average Exercise Price	Weighted Average Remaining Contractual Term *(in years)*		Aggregate Intrinsic Value *(in thousands)*
Balance at December 31, 2017	528,647	$	123.51	7.35	$	7,223
Granted	262,319	$	68.79			
Exercised	(104,445)	$	31.99			
Forfeited	(110,597)	$	155.64			
Balance at December 31, 2018	575,924	$	109.01	8.09	$	87
Granted	276,830	$	26.12			
Exercised	(220)	$	25.50			
Forfeited	(284,692)	$	93.81			
Balance at December 31, 2019	567,842	$	76.25	7.82	$	12
Exercisable at December 31, 2019	271,356	$	109.26	6.66	$	5

For the years ended December 31, 2019 and 2018, the Company received cash of $0.1 million and $3.3 million, respectively, upon option exercises.

The following table summarizes the options outstanding and exercisable at December 31, 2019:

Options Outstanding				Options Exercisable		
Exercise Price	Total Shares	Weighted Average Remaining Contractual Term *(in years)*	Weighted Average Exercise Price	Total Shares	Weighted Average Remaining Contractual Term *(in years)*	Weighted Average Exercise Price
$5.10 to $27.99	116,935	8.23	$ 19.72	19,560	2.12	$ 24.78
$28.00 to $34.59	114,298	9.05	$ 33.66	12,550	8.97	$ 33.91
$34.60 to $78.49	112,977	7.78	$ 68.77	68,586	7.22	$ 70.77
$78.50 to $117.99	91,960	7.84	$ 96.55	57,690	7.72	$ 99.18
$118.00 to $234.70	131,672	6.42	$ 155.68	112,970	6.32	$ 160.77
Total	567,842	7.82	$ 76.25	271,356	6.66	$ 109.26

The following table summarizes the stock award activity for all stock plans during the year ended December 31, 2019:

Awards	Outstanding Restricted Stock Awards and Units	Weighted-Average Grant Date Fair Value Per Share	Outstanding Aggregate Intrinsic Value (in thousands)	Total Fair Value of Restricted Awards Vested (in thousands)
Balance at December 31, 2017	14,066	$ 138.69	$ 1,183	
Granted	21,125	$ 71.36		
Vested	(5,723)	$ 158.47	$ 420	$ 907
Forfeited	(4,853)	$ 118.85		
Balance at December 31, 2018	24,615	$ 80.23	$ 719	
Granted	3,000	$ 33.30		
Vested	(14,478)	$ 64.16	$ 240	$ 929
Forfeited	(6,778)	$ 82.44		
Balance at December 31, 2019	6,359	$ 92.29	$ 82	

2014 Employee Stock Purchase Plan

The 2014 Employee Stock Purchase Plan, the ("ESPP"), provides for eligible Company employees, as defined by the ESPP, to be given an opportunity to purchase the Company's common stock at a discount, through payroll deductions, with stock purchases being made upon defined purchase dates. The ESPP authorizes the issuance of up to 55,000 shares of the Company’s common stock to participating employees and allows eligible employees to purchase shares of common stock at a 15% discount from the lesser of the grant date or purchase date fair market value.

A summary of activity within the ESPP follows:

	Year Ended	
(in thousands except share data)	December 31, 2019	December 31, 2018
Deductions from employees	$ 70	$ 221
Share-based compensation expense recognized	$ 95	$ 138
Remaining share-based compensation expense	$ 206	$ 464
Proceeds received by the Company for ESPP	$ 98	$ 205
Weighted-average purchase price per common share	$ 12.25	$ 45.30
Number of shares purchased by employees under ESPP	8,000	4,539

As of December 31, 2019, there were 33,463 shares available for issuance under the ESPP.

Share-Based Compensation Expense

Share-based compensation expense by classification for December 31, 2019 and 2018 are as follows:

	Year Ended	
(in thousands)	December 31, 2019	December 31, 2018
General and administrative	$ 4,017	$ 7,479
Research and development	3,321	6,345
Total	$ 7,338	$ 13,824

At December 31, 2019, total compensation cost not yet recognized was $7.4 million and the weighted-average period over which this amount is expected to be recognized is 1.98 years. The aggregate fair value of options and restricted shares vesting in the years ended December 31, 2019 and 2018 was $8.9 million and $13.9 million, respectively.

NOTE 10 - COMMITMENTS AND CONTINGENCIES

Co-Development and Co-Commercialization Agreement - Adaptimmune Therapeutics plc

On December 16, 2016, the Company entered into a Co-Development and Co-Commercialization Agreement with and Adaptimmune Therapeutics plc (Adaptimmune) in order to facilitate a staged collaboration to evaluate, develop and commercialize next generation T cell therapies. Under the Agreement, the parties agreed to evaluate the Company's GoTCR technology (inducible MyD88/CD40 co-stimulation, or iMC) with Adaptimmune's affinity-optimized SPEAR® T cells for the potential to create enhanced TCR product candidates. Depending on results of the preclinical proof-of-concept phase, the parties expect to progress to a two-target co-development and co-commercialization phase. To the extent necessary, and in furtherance of the parties' proof-of-concept and co-development efforts, the parties granted each other a royalty-free, non-transferable, non-exclusive license covering their respective technologies for purposes of facilitating such proof-of-concept and co-development efforts. In addition, as to covered therapies developed under the agreement, the parties granted each other a reciprocal exclusive license for the commercialization of such therapies. With respect to any joint commercialization of a covered therapy, the parties agreed to negotiate in good faith the commercially reasonable terms of a co-commercialization agreement. The parties also agreed that any such agreement shall provide for, among other things, equal sharing of the costs of any such joint commercialization and the calculation of profit shares as set forth in the Agreement. The Agreement will expire on a country-by-country basis once the parties cease commercialization of the T cell therapies covered by the Agreement, unless earlier terminated by either party for material breach, non-performance or cessation of development, bankruptcy/insolvency, or failure to progress to co-development phase.

License Agreement - Baylor

In March 2016, the Company and Baylor College of Medicine ("BCM") entered into two additional license agreements pursuant to which the Company obtained exclusive rights to technologies and patent rights owned by BCM. The Company paid BCM a nonrefundable license fee of $0.1 million and could incur additional payments upon the achievement of certain milestone events as set forth in the agreement. If the Company is successful in developing any of the licensed technologies, resulting sales would be subject to a royalty payment in the low single digits.

License Agreement - Agensys, Inc.

On December 10, 2015, the Company and Agensys, Inc. ("Agensys"), entered into a license agreement (the "Agensys Agreement"), pursuant to which (i) Agensys granted the Company, within the field of cell and gene therapy of diseases in humans, an exclusive, worldwide license and sublicense to its patent rights directed to prostate stem cell antigen 1 ("PSCA") and related antibodies, and (ii) the Company granted Agensys a non-exclusive, fully paid license to the Company's patents directed to inventions that were made by the Company in the course of developing the Company's licensed products, solely for use with Agensys therapeutic products containing a soluble antibody that binds to PSCA or, to the extent not based upon the Company's other proprietary technology, to non-therapeutic applications of antibodies not used within the field. As consideration for the rights granted to the Company under the Agreement, the Company agreed to pay to Agensys a non-refundable upfront fee of $3,000,000, which was included in license fee expense. The Company is also required to make aggregate milestone payments to Agensys of up to (i) $5,000,000 upon the first achievement of certain specified

clinical milestones for its licensed products, (ii) $50,000,000 upon the achievement of certain specified clinical milestones for each licensed product, and (iii) $75,000,000 upon the achievement of certain sales milestones for each licensed product. The Agreement additionally provides that the Company will pay to Agensys a royalty that ranges from the mid to high single digits based on the level of annual net sales of licensed products by the Company, its affiliates or permitted sublicensees. The royalty payments are subject to reduction under specified circumstances. These milestone and royalty payments will be expensed as incurred. Under the Agreement, Agensys also was granted the option to obtain an exclusive license, on a product-by-product basis, from the Company to commercialize in Japan each licensed product developed under the Agensys Agreement that has completed a phase 2 clinical trial. As to each such licensed product, if Agensys or its affiliate, Astellas Pharma, Inc., exercises the option, the Agensys Agreement provides that the Company will be paid an option exercise fee of $5,000,000. In addition, the Agensys Agreement provides that the Company will be paid a royalty that ranges from the mid to high single digits based on the level of annual net sales in Japan of each such licensed product. If the option is exercised, the aggregate milestone payments payable by the Company to Agensys, described above with respect to each licensed product, would be reduced by up to an aggregate of $65,000,000 upon the achievement of certain specified clinical and sales milestones. The Agensys Agreement will terminate upon the expiration of the last royalty term for the products covered by the Agensys Agreement, which is the earlier of (i) the date of expiration or abandonment of the last valid claim within the licensed patent rights covering any licensed products under the Agreement, (ii) the expiration of regulatory exclusivity as to a licensed product, and (iii) 10 years after the first commercial sale of a licensed product. Either party may terminate the Agensys Agreement upon a material breach by the other party that remains uncured following 60 days after the date of written notice of such breach (or 30 days if such material breach is related to failure to make payment of amounts due under the Agensys Agreement) or upon certain insolvency events. In addition, Agensys may terminate the Agensys Agreement immediately upon written notice to the Company if the Company or any of its affiliates or permitted sublicensees commences an interference proceeding or challenges the validity or enforceability of any of Agensys' patent rights.

License Agreement - BioVec

On June 10, 2015, the Company and BioVec Pharma, Inc. ("BioVec") entered into a license agreement (the "BioVec Agreement") pursuant to which BioVec agreed to supply the Company with certain proprietary cell lines and granted to the Company a non-exclusive, worldwide license to certain of its patent rights and related know-how related to such proprietary cell lines. As consideration for the products supplied and rights granted to the Company under the BioVec Agreement, the Company agreed to pay to BioVec an upfront fee of $100,000 within ten business days of the effective date of the BioVec Agreement and a fee of $300,000 within ten business days of its receipt of the first release of GMP lot of the products licensed under the BioVec Agreement. In addition, the Company agreed to pay to BioVec an annual fee of $150,000, commencing 30 days following the first filing of an Investigational New Drug Application (an IND filing), or its foreign equivalent, for a product covered by the license; with such annual fees being creditable against any royalties payable by the Company to BioVec under the BioVec Agreement. The Company also is required to make a $250,000 milestone payment to BioVec for each of the first three licensed products to enter into a clinical phase trial and one-time milestone payments of $2,000,000 upon receipt of a registration granted by the Federal Drug Administration or European Medicines Agency on each of the Company's first three licensed products. The BioVec Agreement additionally provides that the Company will pay to BioVec a royalty in the low single digits on net sales of products covered by the BioVec Agreement. The Company may also grant sublicensees under the licensed patent rights and know-how to third parties for limited purposes related to the use, sale and other exploitation of the products licensed under the BioVec Agreement. The BioVec Agreement will continue until terminated. The BioVec Agreement may be terminated by the Company, in its sole discretion, at any time upon 90 days written notice to BioVec. Either party may terminate the BioVec Agreement in the event of a breach by the other party of any material provision of the BioVec Agreement that remains uncured on the date that is 60 days after written notice of such failure or upon certain insolvency events that remain uncured following the date that is 30 days after the date of written notice to a party regarding such insolvency event.

Litigation

Securities Litigation

On February 6, 2018, a purported securities class action complaint captioned *Nipun Kakkar v. Bellicum Pharmaceuticals, Inc., Rick Fair and Alan Musso* was filed against us, and certain of our officers in the U.S. District Court for the Southern District of Texas, Houston Division. A second substantially similar class action was filed on March 14, 2018 by plaintiff Frances Rudy against the same defendants in the same court. The lawsuits purport to assert class action claims on behalf of purchasers of our securities during the period from May 8, 2017 through January 30, 2018. The complaints allege that the defendants violated the Exchange Act by making materially false and misleading statements concerning our clinical trials being conducted in the U.S. to assess rivo-cel (rivogenlecleucel, formerly known as BPX-501) as an adjunct T-cell therapy administered after allogeneic hematopoietic stem cell transplantation. The complaints purport to assert claims for violations of Sections 10(b) and 20(a) of the Exchange Act and Rule 10b-5 promulgated thereunder. The complaints seek, on behalf of the purported class, an unspecified amount of monetary damages, interest, fees and expenses of attorneys and experts, and other relief. On April 9, 2018, the District Court consolidated the two lawsuits under the Kakkar action. On March 26, 2019, the court appointed lead plaintiffs to represent the putative class and on May 15, 2019, plaintiffs filed an amended class action complaint.

On July 5, 2019, defendants filed a motion to dismiss the amended complaint. Plaintiffs filed an opposition to the motion to dismiss on August 26, 2019 and the Company filed its reply to the opposition on September 22, 2019.

On July 8, 2019, a purported shareholder derivative complaint captioned *Scott Ludovissy and Ann Gordon Trammell v. Richard A. Fair, et al.* was filed against the Company's directors and certain of the Company's officers in the U.S. District Court for the Southern District of Texas, Houston Division. The lawsuit purports to seek damages on behalf of the Company against the individual defendants for breach of fiduciary duty, waste, unjust enrichment and violations of Section 14(a) of the Exchange Act. The complaint alleges that the defendants caused or allowed the Company to disseminate misstatements regarding the clinical trials for rivo-cel and to make false or misleading statements in the proxy materials for the Company's 2017 annual meeting of stockholders.

On July 19, 2019, another purported shareholder derivative complaint captioned *Seung Paik v. Richard A. Fair, et al.* was filed against the same defendants in the same court. The Ludovissy and Paik derivative causes of action have been stayed until reinstated on motion of the parties.

On November 1, 2019, an additional purported shareholder derivative complaint captioned *Mildred Taylor and Jessica Amor v. Richard A. Fair, et al*. was filed against certain of the Company's officers and directors in the District of Delaware. The Taylor complaint includes substantially similar factual allegations as the other matters described above and seeks to hold the defendants liable for allegedly causing the Company to make material misstatements.

Other Litigation

On May 29, 2019, Bellicum was served with a second amended complaint indicating that the Company had been added as an additional defendant in an ongoing civil tort lawsuit, captioned *Kelly v. Children's Hospital of Los Angeles et al*., filed in the Los Angeles County Superior Court, Case No. BC681477. On July 10, 2019, a third amended complaint was filed, which alleges claims for wrongful death, negligence, breach of fiduciary duty, fraud, medical battery on decedent, medical battery on individual plaintiffs, products liability - failure to warn, breach of express warranty and products liability design or manufacturing defect. Plaintiffs are seeking unspecified monetary damages including punitive damages. In response to the third amended complaint, Bellicum filed a demurrer and a motion to strike portions of the third amended complaint, both of which are set for hearing on April 10, 2020.

The Company intends to vigorously defend itself in these proceedings. An adverse finding could materially affect our business and results of operations.

NOTE 11 - INCOME TAXES

The reconciliation between federal income taxes at the statutory U.S. federal income tax rate and the Company's income tax expense for the year is as follows:

(in thousands)	December 31, 2019	December 31, 2018
Tax benefit at statutory rate	$ (23,591)	$ (20,608)
Other	(294)	128
Stock based compensation	2,674	2,213
Issuance costs on warrants, private placement option, and preferred stock	4,657	—
Deferred tax valuation allowances	19,542	21,606
Research and development credit	(2,988)	(3,339)
Income tax expense	$ —	$ —

Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes, and the amounts used for income tax purposes. Significant components of the Company's deferred taxes as of December 31, 2019 and 2018 are as follows:

(in thousands)	December 31, 2019	December 31, 2018
Deferred tax assets (liabilities):		
Federal net operating loss carryforward	$ 81,960	$ 63,624
Stock compensation	3,270	4,533
Intangible assets	8,077	8,392
Research and development credit	16,601	13,612
Operating lease right-of-use assets	(1,229)	—
Lease liabilities	1,538	—
Other	2,336	2,858
Total deferred tax assets, net of deferred tax liabilities	112,553	93,019
Valuation allowance	(112,553)	(93,019)
Net deferred tax assets	$ —	$ —

Net operating loss carryforwards and research tax credits as of December 31, 2019 and 2018 are as follows:

(in thousands)	December 31, 2019	December 31, 2018
U.S. federal income tax net operating loss carryforwards	$ 390,286	$ 302,971
U.K. net operating loss carryforwards	$ —	$ 2,424
U.S. federal research tax credits	$ 11,348	$ 8,939
Texas research tax credits	$ 5,252	$ 4,673

The Company has $169.0 million of U.S. federal net operating loss carryovers that have no expiration date and the remaining begin to expire in 2025. The U.S. Federal and state research credits will begin to expire in 2028 and 2034 respectively. No study has been performed on the research and development (R&D) credits and gross R&D credits in the amount of $16.6 million could be limited based on review by the Internal Revenue Service.

The Internal Revenue Code Section 382 limits NOL and tax credit carry forwards when an ownership change of more than 50% of the value of the stock in a loss corporation occurs. Accordingly, the ability to utilize remaining NOL and tax credit carryforwards may be significantly restricted.

In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax asset will be realized. The ultimate realization of deferred tax assets is dependent upon the Company attaining future taxable income during periods in which those temporary differences become deductible.

Due to the uncertainty surrounding the realization of the benefits of its deferred assets, including NOL carryforwards, the Company has provided a 100% valuation allowance on its deferred tax assets at December 31, 2019 and 2018. The changes in the valuation allowance was an increase of $19.5 million and an increase of $21.6 million for the years ended December 31, 2019 and 2018, respectively.

NOTE 12 - SELECTED QUARTERLY FINANCIAL DATA

Selected quarterly financial data for the year ended December 31, 2019 and 2018 is presented below:

(unaudited; in thousands except per share data)

2019	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total revenues	$ 516	$ 1,391	$ 103	$ 5,133
Loss from operations	$ (23,868)	$ (26,159)	$ (23,437)	$ (13,900)
Net loss	$ (24,528)	$ (26,936)	$ (32,032)	$ (28,981)
Net loss per share attributable to common shareholders - basic and diluted	$ (5.54)	$ (5.85)	$ (6.79)	$ (5.82)

2018	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total revenues	$ 154	$ 362	$ 292	$ 312
Loss from operations	$ (22,104)	$ (23,567)	$ (23,228)	$ (26,567)
Net loss	$ (22,840)	$ (24,175)	$ (23,801)	$ (27,220)
Net loss per share attributable to common shareholders - basic and diluted	$ (6.83)	$ (5.95)	$ (5.49)	$ (6.27)

NOTE 13 - SUBSEQUENT EVENTS

M.D. Anderson Asset Purchase Agreement

On January 17, 2020, the Company entered into an Asset Purchase Agreement with The University of Texas M.D. Anderson Cancer Center, as amended by the First Amendment to Asset Purchase Agreement dated February 21, 2020, in connection with the sale of certain assets of the Company. Pursuant to the Asset Purchase Agreement, the Company agreed to sell to M.D. Anderson certain assets and liabilities relating to the Company's manufacturing facility and related laboratories and office space located at 2130 W. Holcombe Blvd., Houston, Texas 77030, for a purchase price of $15.0 million, payable in cash upon closing, less $1.5 million to be held in escrow for up to 18 months after the closing of the transaction.

The closing of the transaction is contingent upon, among other things, (a) the Board of Regents of the University of Texas System's approval of the transaction, (b) the entry into a Master Services Agreement, by and between the Company and M.D. Anderson, pursuant to which M.D. Anderson will provide the Company with certain clinical supply services, (c) completion of an on-site inspection of the Facility by certain regulatory entities, (d) the Company obtaining consent from the landlord of the Facility, and (e) the satisfaction of customary terms and conditions, including adjustment to the purchase price and provisions that require the Company to indemnify M.D. Anderson for certain losses that it incurs as a result of a breach by the Company of its representations and warranties in the Asset Purchase Agreement and certain other matters. The closing of the transaction is expected to occur on or before March 31, 2020.

ITEM 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

ITEM 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer and Corporate Controller (our principal executive officer, principal financial officer and principal accounting officer, respectively), evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of December 31, 2019. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer, Chief Financial Officer and Corporate Controller concluded that, as of such date, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Controls over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f) and 15d-15(f). Our internal control over financial reporting is designed under the supervision of our Chief Executive Officer, Chief Financial Officer and Corporate Controller to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with United States generally accepted accounting principles.

The Company's internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Consolidated Financial Statements.

Management, including our Chief Executive Officer and Chief Financial Officer and Corporate Controller, has assessed the effectiveness of our internal control over financial reporting based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) in Internal Control-Integrated Framework. Based on those criteria and our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2019. Ernst & Young LLP, the Company's independent registered public accounting firm, has issued an attestation report on the Company's internal control over financial reporting which is included herein.

Inherent Limitations of Internal Controls

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our latest fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. Other Information

None.

PART III

ITEM 10. Directors, Executive Officers and Corporate Governance

The information required by this item and not set forth below will be set forth in the sections headed “Election of Directors,” “Information about our Executive Officers” and “Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive proxy statement for our Annual Meeting of Stockholders, or our Proxy Statement, to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2019, and is incorporated herein by reference.

ITEM 11. Executive Compensation

The information required by this item will be set forth in the section headed “Executive and Director Compensation” in our Proxy Statement and is incorporated herein by reference.

ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item will be set forth in the section headed “Equity Benefit Plans” and “Security Ownership of Certain Beneficial Owners and Management” in our Proxy Statement and is incorporated herein by reference.

The information required by Item 201(d) of Regulation S-K will be set forth in the section headed “Executive and Director Compensation” in our Proxy Statement and is incorporated herein by reference.

ITEM 13. Certain Relationships and Related Party Transactions, and Director Independence

The information required by this item will be set forth in the sections headed “Certain Relationships and Related Party Transactions” and “Election of Directors” in our Proxy Statement and is incorporated herein by reference.

ITEM 14. Principal Accounting Fees and Services

The information required by this item will be set forth in the section headed “Principal Accounting Fees and Services” in our Proxy Statement and is incorporated herein by reference.

PART IV

ITEM 15. Exhibits, Financial Statements and Schedules

(a)(1) Financial Statements.

The response to this portion of Item 15 is set forth under Part II, Item 8 above.

(a)(2) Financial Statement Schedules.

We have omitted these schedules because they are not required, or are not applicable, or the required information is shown in the consolidated financial statements or notes thereto.

(a)(3) Exhibits.

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation, as amended by Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Registrant.
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed with the SEC on August 5, 2019).
3.3	Certificate of Designations, Preferences and Rights of Series 1 Redeemable Convertible Non-Voting Preferred Stock, Series 2 Redeemable Convertible Non-Voting Preferred Stock and Series 3 Redeemable Convertible Non-Voting Preferred Stock of Bellicum Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's report on Form 8-K, filed with the SEC on August 19, 2019).
4.1	Reference is made to Exhibits 3.1 and 3.2.
4.2	Form of Common Stock Certificate of the Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
4.3	Second Amended and Restated Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated August 22, 2014 (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
4.4	Registration Rights Agreement by and among the Registrant and Baker Brothers Life Sciences, LP, and two of its affiliated funds, dated January 15, 2016 (incorporated by reference to Exhibit 4.4 to Registrant's Registration Statement on Form S-3 (File No. 333-209012), filed with the SEC on January 15, 2016).
4.5	Form of Warrant issued in public offering (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-36783), filed with the SEC on August 19, 2019).
4.6	Form of Warrant issued in private offering (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-36783), filed with the SEC on August 19, 2019).
4.7	Description of Securities
4.8	Securities Purchase Agreement, dated August 16, 2019, by and among the Company and the institutional investors named therein, (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36783), filed with the SEC on August 19, 2019).
10.1+	Form of Indemnification Agreement by and between the Registrant and its directors and officers (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.2+	Bellicum Pharmaceuticals, Inc. 2006 Stock Option Plan and Form of Nonqualified Stock Option Agreement (incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.3+	Bellicum Pharmaceuticals, Inc. 2011 Stock Option Plan and Forms of Incentive Stock Option Grant Agreement and Nonqualified Stock Option Agreement (incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).

Exhibit Number	Description
10.4(A)+	Bellicum Pharmaceuticals, Inc. 2014 Equity Incentive Plan, as amended (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 5, 2019).
10.4(B)+	Form of Stock Option Grant Notice and Option Agreement under the 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.4(B) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.4(C)+	Form of Stock Option Grant Notice and Option Agreement under the 2014 Equity Incentive Plan (with accelerated vesting) (incorporated by reference to Exhibit 10.4(C) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.4(D)+	Form of Restricted Stock Award Notice and Restricted Stock Award Agreement under the 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.4(D) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.4(E)+	Form of Restricted Stock Unit Notice and Restricted Stock Unit Agreement under the 2014 Equity Incentive Plan (incorporated by reference to Exhibit 10.4(E) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.4(F)+	Form of Stock Option Grant Notice and Option Agreement under the 2014 Equity Incentive Plan (Inducement Award)(incorporated by reference to Exhibit 10.4(F) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.4(G)+	Form of Stock Option Grant Notice and Option Agreement under the 2014 Equity Incentive Plan (Non-Employee Director Form) (incorporated by reference to Exhibit 10.4(G) to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.5(A)+	Bellicum Pharmaceuticals, Inc. 2019 Equity Incentive Plan, as amended (incorporated by reference to Exhibit 99.1 of the Registrant's Registration Statement on Form S-8 filed with the SEC on January 29, 2020).
10.5(B)+	Forms of stock option grant notice, stock option agreement and notice of exercise, and forms of restricted stock award notice and restricted stock award agreement under the Bellicum Pharmaceuticals, Inc. 2019 Equity Incentive Plan.
10.6+	Bellicum Pharmaceuticals, Inc. Non-Employee Director Compensation Policy.
10.7+	Incentive Award Program (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on February 27, 2015).
10.8+	Incentive Award Program, as amended on February 19, 2018 (incorporated by reference to Exhibit 10.7 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.9+	Letter Agreement by and between the Registrant and Richard A. Fair, dated January 25, 2017 (incorporated by reference to Exhibit 10.43 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2017).
10.10+	Retention Agreement by and between Registrant and Rosemary Williams, dated July 17, 2018 (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2018).
10.11+	Employment Agreement by and between Registrant and Rosemary Williams, effective January 1, 2017 (incorporated by reference to Exhibit 10.14 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 12, 2019).
10.12+	Employment Agreement by and between Registrant and Shane M. Ward, effective May 29, 2018 (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2018).
10.13+	Employment Agreement by and between Registrant and Atabak Mokari, effective November 19, 2018 (incorporated by reference to Exhibit 10.16 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 12, 2019).
10.14+	Employment Agreement by and between Registrant and Aaron Foster, Ph.D., effective June 1, 2016 (incorporated by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 12, 2019).
10.15	Notice of Expansion of Licensed Field to Obtain Additional Exclusive Rights (incorporated by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.16*	Amended and Restated License Agreement by and between the Registrant and ARIAD Pharmaceuticals, Inc., dated March 7, 2011 (incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).

Exhibit Number	Description
10.17*	Omnibus Amendment Agreement by and between Registrant and ARIAD Pharmaceuticals, Inc., dated October 3, 2014 (incorporated by reference to Exhibit 10.16 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.18*	Exclusive License Agreement by and between the Registrant and Baylor College of Medicine, dated March 20, 2008 (incorporated by reference to Exhibit 10.17 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.19*	Exclusive License Agreement by and between the Registrant and Baylor College of Medicine, dated June 27, 2010 (incorporated by reference to Exhibit 10.18 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.20*	Cancer Research Grant Contract by and between the Registrant and the Cancer Prevention and Research Institute of Texas, dated July 27, 2011 (incorporated by reference to Exhibit 10.19 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.21*	Exclusive License Agreement by and between the Registrant and Baylor College of Medicine, effective November 1, 2014 (incorporated by reference to Exhibit 10.20 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.22*	License Agreement by and between the Registrant and BioVec Pharma, Inc., dated as of June 4, 2015 (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 13, 2015).
10.23*	Exclusive License Agreement by and between the Registrant and Agensys, Inc., effective as of December 10, 2015 (incorporated by reference to Exhibit 10.33 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 14, 2016).
10.24*	Co-Development and Co-Commercialisation Agreement by and between the Registrant and Adaptimmune Limited, effective as of December 16, 2016 (incorporated by reference to Exhibit 10.41 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2017).
10.25	Lease Agreement by and between Registrant and Sheridan Hills Developments L.P., dated June 1, 2012 (incorporated by reference to Exhibit 10.21 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.26	First Amendment to Lease Agreement by and between Registrant and Sheridan Hills Developments L.P., dated September 13, 2013 (incorporated by reference to Exhibit 10.22 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.27	Second Amendment to Lease Agreement by and between Registrant and Sheridan Hills Developments L.P., dated June 20, 2014 (incorporated by reference to Exhibit 10.23 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.28	Third Amendment to Lease Agreement by and between Registrant and Sheridan Hills Developments L.P., dated July 21, 2014 (incorporated by reference to Exhibit 10.24 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.29	Fourth Amendment to Lease Agreement by and between Registrant and Sheridan Hills Developments L.P., dated November 12, 2014 (incorporated by reference to Exhibit 10.25 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-200328), originally filed with the SEC on November 18, 2014).
10.30	Fifth Amendment to Lease Agreement by and between the Registrant and Sheridan Hills Developments L.P., effective as of September 24, 2015 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).
10.31	Lease Agreement by and between the Registrant and Sheridan Hills Developments L.P., dated as of May 6, 2015 (incorporated by reference to Exhibit 10.32 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 14, 2016).
10.32	First Amendment to Lease Agreement by and between the Registrant and Life Science Plaza Investment Group, LP, effective as of July 11, 2016 (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 8, 2016).
10.33	Second Amendment to Lease Agreement by and between the Registrant and Life Science Plaza Investment Group, LP, effective as of September 26, 2016 (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).

Exhibit Number	Description
10.34	Loan and Security Agreement by and between the Registrant and Oxford Finance LLC dated as of December 21, 2017 (incorporated by reference to Exhibit 10.44 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 13, 2018).
10.35*	First Amendment to Loan and Security Agreement, dated December 24, 2019, by and between the Registrant and Oxford Finance LLC.
10.36	Open Market Sale AgreementSM, dated October 5, 2018, by and between the Registrant and Jefferies LLC (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on October 5, 2018).
10.37*	Supply Agreement by and between Registrant and Miltenyi Biotech GmbH, dated March 27, 2019 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on May 7, 2019).
10.38*	Asset Purchase Agreement, dated January 17, 2020, by and between the Registrant and The University of Texas M.D. Anderson Cancer Center
10.39	First Amendment to Asset Purchase Agreement, dated February 21, 2020, by and between the Registrant and The University of Texas M.D. Anderson Cancer Center
21.1	Subsidiaries of the Registrant
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
24.1	Power of Attorney. Reference is made to the signature page hereto.
31.1	Certification of the Principal Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934.
31.2	Certification of the Principal Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934.
32.1#	Certification of the Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2#	Certification of the Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS**	XBRL Instance
101.SCH**	XBRL Taxonomy Extension Schema
101.CAL**	XBRL Taxonomy Extension Calculation
101.DEF**	XBRL Taxonomy Extension Definition
101.LAB**	XBRL Taxonomy Extension Labels
101.PRE**	XBRL Taxonomy Extension Presentation

+ Indicates management contract or compensatory plan.

* Certain portions of this exhibit (indicated by "[***]") have been omitted as the Registrant as determined (i) the omitted information is not material and (ii) the omitted information would likely cause harm to the Registrant if publicly disclosed.

This certification is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

ITEM 15. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Bellicum Pharmaceuticals, Inc.

Date: March 12, 2020

By: /s/ Richard A. Fair
Richard A. Fair
President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Richard A. Fair as his true and lawful attorney-in-fact, with the power of substitution, for him in any and all capacities, to sign any amendments to this report, and to file the same, with exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorney-in-fact, or his substitute or substitutes may do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Richard A. Fair Richard A. Fair	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 12, 2020
/s/ Atabak Mokari Atabak Mokari	Chief Financial Officer *(Principal Financial Officer)*	March 12, 2020
/s/ David E. Strauss David E. Strauss	Corporate Controller *(Principal Accounting Officer)*	March 12, 2020
/s/ James Brown James Brown	Chairman of the Board of Directors	March 12, 2020
/s/ James M. Daly James M. Daly	Member of the Board of Directors	March 12, 2020
/s/ Stephen R. Davis Stephen R. Davis	Member of the Board of Directors	March 12, 2020
/s/ Reid M. Huber, Ph.D. Reid M. Huber, Ph.D.	Member of the Board of Directors	March 12, 2020
/s/ Judith Klimovsky Judith Klimovsky	Member of the Board of Directors	March 12, 2020
/s/ Jon P. Stonehouse Jon P. Stonehouse	Member of the Board of Directors	March 12, 2020

Exhibit 3.1

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BELLICUM PHARMACEUTICALS, INC

Thomas J. Farrell hereby certifies that:

ONE: He is the duly elected and acting Chief Executive Officer of Bellicum Pharmaceuticals, Inc., a Delaware corporation.

TWO: The date of filing of said corporation's original certificate of incorporation with the Delaware Secretary of State was July 14, 2004, under the name of Bellicum Pharmaceuticals, Inc.

THREE: The Amended and Restated Certificate of Incorporation of the corporation is hereby amended and restated to read in its entirety as follows:

I.

The name of this corporation is Bellicum Pharmaceuticals, Inc. (the "***Company***").

II.

The address of the registered office of the Company in the State of Delaware is 1209 Orange Street, in the City of Wilmington, Delaware, 19801, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

III.

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law ("***DGCL***").

IV.

A. The Company is authorized to issue two classes of stock to be designated, respectively, "***Common Stock***" and "***Preferred Stock***." The total number of shares which the Company is authorized to issue is 210,000,000 shares. 200,000,000 shares shall be Common Stock, each having a par value of $0.01. 10,000,000 shares shall be Preferred Stock, each having a par value of $0.01.

B. The Preferred Stock may be issued from time to time in one or more series. The Board of Directors of the Company (the "***Board of Directors***") is hereby expressly authorized to provide for the issue of any or all of the unissued and undesignated shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the Board of Directors providing for the issuance of such shares and as may be permitted by the DGCL. The Board of Directors is also expressly authorized to increase or decrease the number of shares of any series subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the stock of the Company entitled to vote thereon, without a separate vote of the holders of the Preferred Stock, or of any series

thereof, unless a vote of any such holders is required pursuant to the terms of any certificate of designation filed with respect to any series of Preferred Stock.

C. Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Company for their vote; *provided, however*, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Amended and Restated Certificate of Incorporation (this "***Certificate of Incorporation***") (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series of Preferred Stock are entitled, either separately or together as a class with the holders of one or more other such series of Preferred Stock, to vote thereon by law or pursuant to this Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock).

V.

For the management of the business and for the conduct of the affairs of the Company, and in further definition, limitation and regulation of the powers of the Company, of its directors and of its stockholders or any class thereof, as the case may be, it is further provided that:

A. The management of the business and the conduct of the affairs of the Company shall be vested in its Board of Directors. The number of directors that shall constitute the Board of Directors shall be fixed exclusively by resolutions adopted by a majority of the authorized number of directors constituting the Board of Directors.

B. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. The Board of Directors is authorized to assign members of the Board of Directors already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the initial classification of the Board of Directors, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following such initial classification, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following such initial classification, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this section, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

C. Subject to the rights of any series of Preferred Stock that may be designated from time to time to elect additional directors under specified circumstances, neither the Board of Directors nor any individual director may be removed without cause. Subject to any limitations imposed by applicable law, any individual director or directors may be removed with cause by the affirmative vote of the holders of at least 66 2/3% of the voting power of all then-outstanding shares of capital stock of the Company entitled to vote generally at an election of directors, voting together as a single class.

D. Subject to any limitations imposed by applicable law and subject to the rights of the holders of any series of Preferred Stock that may be designated from time to time, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors, shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders and except as otherwise provided by applicable law, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified.

E. The Board of Directors is expressly empowered to adopt, amend or repeal the Amended and Restated Bylaws of the Company (the "***Bylaws***"). Any adoption, amendment or repeal of the Bylaws by the Board of Directors shall require the approval of a majority of the authorized number of directors. The stockholders shall also have power to adopt, amend or repeal the Bylaws; *provided, however,* that, in addition to any vote of the holders of any class or series of stock of the Company required by law or by this Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the

holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of the capital stock of the Company entitled to vote generally in the election of directors, voting together as a single class.

F. The directors of the Company need not be elected by written ballot unless the Bylaws so provide.

G. No action shall be taken by the stockholders of the Company except at an annual or special meeting of stockholders called in accordance with the Bylaws. No action shall be taken by the stockholders of the Company by written consent or electronic transmission.

H. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Company shall be given in the manner provided in the Bylaws.

VI.

A. The liability of a director of the Company for monetary damages shall be eliminated to the fullest extent under applicable law.

B. To the fullest extent permitted by applicable law, the Company is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Company (and any other persons to which applicable law permits the Company to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise in excess of the indemnification and advancement otherwise permitted by such applicable law. If applicable law is amended after approval by the stockholders of this Article VI to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director to the Company shall be eliminated or limited to the fullest extent permitted by applicable law as so amended.

C. Any repeal or modification of this Article VI shall only be prospective and shall not affect the rights or protections or increase the liability of any director under this Article VI in effect at the time of the alleged occurrence of any act or omission to act giving rise to liability or indemnification.

VII.

Unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of the Company; (2) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Company to the Company or the Company's stockholders; (3) any action asserting a claim against the Company or any director or officer or other employee of the Company arising pursuant to any provision of the DGCL, the Company's Certificate of Incorporation or Bylaws; or (4) any action asserting a claim against the Company or any director or officer or other employee of the Company governed by the internal affairs doctrine.

VIII.

A. The Company reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, except as provided in Section B of this Article VIII, and all rights conferred upon the stockholders herein are granted subject to this reservation.

B. Notwithstanding any other provisions of this Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the Company required by law or by this Certificate of Incorporation or any certificate of designation filed with respect to a series of Preferred Stock that may be designated from time to time, subject to the rights of the holders of any series of Preferred Stock, the affirmative vote of the holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of capital stock of the Company entitled to vote generally in the election of directors, voting together as a single class, shall be required to alter, amend or repeal Articles V, VI or VIII of this Certificate of Incorporation.

* * * *

FOUR: This Certificate of Incorporation has been duly adopted and approved by the Board of Directors and by written consent of the stockholders in accordance with Sections 228, 242 and 245 of the DGCL and written notice of such action has been given as provided in section 228 of the DGCL.

[Signature page follows]

IN WITNESS WHEREOF, Bellicum Pharmaceuticals, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by its Chief Executive Officer this 23rd day of December, 2014.

BELLICUM PHARMACEUTICALS, INC.

/S/ **THOMAS J. FARRELL**
THOMAS J. FARRELL
Chief Executive Officer

CERTIFICATE OF AMENDMENT OF THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF
BELLICUM PHARMACEUTICALS, INC.

Bellicum Pharmaceuticals, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "***Company***"), hereby certifies that:

First: The name of the Company is **BELLICUM PHARMACEUTICALS, INC.**

Second: The date of filing of the Company's original certificate of incorporation with the Delaware Secretary of State was July 14, 2004, under the name of Bellicum Pharmaceuticals, Inc.

Third: The Board of Directors of the Company, acting in accordance with the provisions of Sections 141 and 242 of the General Corporation Law of the State of Delaware, adopted resolutions to amend its Amended and Restated Certificate of Incorporation as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

> "The Company is authorized to issue two classes of stock to be designated, respectively, "***Common Stock***" and "***Preferred Stock***." The total number of shares which the Company is authorized to issue is 50,000,000 shares. 40,000,000 shares shall be Common Stock, each having a par value of $0.01. 10,000,000 shares shall be Preferred Stock, each having a par value of $0.01."

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment of the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each ten (10) shares of Common Stock, par value $0.01 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value $0.01 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Global Market on the date this Certificate of Amendment of the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

Fourth: Thereafter pursuant to a resolution of the Board of Directors, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at a special meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, the Company on has caused this Certificate of Amendment to be signed by its Chief Executive Officer this 5th day of February, 2020.

Bellicum Pharmaceuticals, Inc.

By: /s/ Richard Fair
Name: Richard Fair
Title: Chief Executive Officer

Exhibit 4.7

DESCRIPTION OF COMMON STOCK

General

The following description summarizes the most important terms of our common stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this "Description of Common Stock," you should refer to our amended and restated certificate of incorporation (the "Restated Certificate") and amended and restated bylaws (the "Restated Bylaws"), which are included as exhibits to our Annual Report on Form 10-K, and to the applicable provisions of the Delaware General Corporation Law (the "DGCL"). Our authorized capital stock consists of 40,000,000 shares of common stock, par value $0.01 per share, and 10,000,000 shares of preferred stock, par value $0.01 per share. Our board of directors has the authority, without stockholder approval, except as required by the listing standards of The Nasdaq Stock Market LLC, to issue additional shares of our capital stock. In addition, our board of directors has the authority, without further action by our stockholders, to designate the rights, preferences, privileges, qualifications and restrictions of our preferred stock in one or more series.

Voting Rights

Our common stock is entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, including the election of directors, and does not have cumulative voting rights. Accordingly, the holders of a majority of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election. For most other matters, the approval of a majority of the shares voting at an annual or special meeting of stockholders will be required. Exceptions to this include removing directors for cause and amending our Restated Certificate and Restated Bylaws, each of which will require the approval of the holders of at least 66-2/3% of the voting power of all of our then-outstanding common stock.

Dividends and Distributions

Subject to preferences that may be applicable to any then-outstanding preferred stock, the holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation, Dissolution or Winding Up

In the event of our liquidation, dissolution or winding-up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Other Rights and Preferences

Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Board of Directors

Our board of directors is divided into three classes. At each annual meeting of stockholders, the successors to directors whose terms then expire will serve until the third annual meeting following their election and until their successors are duly elected and qualified.

Anti-Takeover Provisions

Delaware Anti-Takeover Law

We are subject to Section 203 of the DGCL, which generally prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the time that such stockholder became an interested stockholder, unless:

- prior to such time, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (1) by persons who are directors and also officers and (2) 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
- at or subsequent to such time, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66-2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 of the DGCL defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 of the DGCL defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws Provisions

Provisions of the Restated Certificate and the Restated Bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, the Restated Certificate and the Restated Bylaws:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;
- provide that the authorized number of directors may be changed only by resolution adopted by a majority of the board of directors;

- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66 2/3% of the voting power of all of our then outstanding common stock, subject to the rights of any series of preferred stock that may be designated from time to time to elect additional directors under specified circumstances;

- provide that all vacancies, including newly created directorships, may, except as otherwise required by law or subject to the rights of holders of preferred stock as designated from time to time, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;

- divide our board of directors into three classes;

- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent or electronic transmission;

- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder's notice;

- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose); and

- provide that special meetings of our stockholders may be called only by the chairman of the board, our Chief Executive Officer or by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exists any vacancies).

- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to us or our stockholders, (3) any action asserting a claim against the us arising pursuant to any provision of the DGCL or our certificate of incorporation or bylaws, or (4) any action asserting a claim against us governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation and bylaws has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. This choice of forum provision does not apply to suits brought to enforce a duty or liability created by the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction.

The amendment of any of these provisions, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require the affirmative vote of the holders of at least 66-2/3% of the voting power of all of our then outstanding common stock.

The foregoing provisions may make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. As a consequence, these provisions also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

BELLICUM PHARMACEUTICALS, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

Each member of the Board of Directors (the ***"Board"***) who is not also serving as an employee of Bellicum Pharmaceuticals, Inc. (***"Bellicum"***) or any of its subsidiaries (each such member, an ***"Eligible Director"***) will receive the compensation described in this Non-Employee Director Compensation Policy for his or her Board service. This policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

Annual Cash Compensation

The annual cash compensation amount set forth below is payable in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If an Eligible Director joins the Board or a committee of the Board at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid for the first fiscal quarter in which the Eligible Director provides the service, and regular full quarterly payments thereafter. All annual cash fees are vested upon payment.

1. Annual Board Service Retainer:

    a. All Eligible Directors: $40,000
    b. Chairman of the Board Service Retainer (in addition to Eligible Director Service Retainer): $30,000
    c. Lead Independent Director Service Retainer (in addition to Eligible Director Service Retainer): $15,000

2. Annual Committee Member Service Retainer:

    a. Member of the Audit Committee: $7,500
    b. Member of the Compensation Committee: $5,000
    c. Member of the Nominating & Governance Committee: $3,500
    d. Member of the Science Committee: $5,000
    e. Member of the Finance Committee: $5,000

3. Annual Committee Chair Service Retainer (in addition to Committee Member Service Retainer):

    a. Chairman of the Audit Committee: $7,500
    b. Chairman of the Compensation Committee: $5,000
    c. Chairman of the Nominating & Governance Committee: $4,000
    d. Chairman of the Science Committee: $5,000
    e. Chairman of the Finance Committee: $5,000

4. Meeting Attendance Fee for Science Committee:

    a. In addition to the Science Committee Service Retainer, $1,000 per meeting of the Science Committee in excess of five meetings per year, not to exceed $7,000 per year.

Equity Compensation

The equity compensation set forth below will be granted under the Bellicum, Inc. 2019 Equity Incentive Plan (the ***"Plan"***). All stock options granted under this policy will be nonstatutory stock options, with an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying Company common stock on the date of grant, and a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan, provided that upon a termination of service other than for death, disability or cause, the post-termination exercise period will be 12 months from the date of termination).

1. Initial Grant: On the date of the Eligible Director's initial election to the Board, for each Eligible Director who is first elected to the Board (or, if such date is not a market trading day, the first market trading day thereafter), the Eligible Director will be automatically, and without further action by the Board or Compensation Committee of the Board, granted a stock option for 50,000 shares (the "***Initial Grant***"). The shares subject to each Initial Grant will vest with respect to one-third of the shares on the one-year anniversary of the date of grant, and in equal monthly installments over the following two-year period such that the option is fully vested on the third anniversary of the date of grant, subject to the Eligible Director's Continuous Service (as defined in the Plan) through each such vesting date and will vest in full upon a Change in Control (as defined in the Plan).

2. Annual Grant: On the date of each Bellicum annual stockholder meeting, for each Eligible Director who continues to serve as a non-employee member of the Board (or who is first elected to the Board at such annual stockholder meeting), the Eligible Director will be automatically, and without further action by the Board or Compensation Committee of the Board, granted a stock option for 25,000 shares (the "***Annual Grant***"). In addition, each Eligible Director who is first elected to the Board and other than at an annual stockholder meeting will be automatically, and without further action by the Board or Compensation Committee of the Board, granted an Annual Grant, pro rated for the number of months remaining until the next annual stockholder meeting. The shares subject to the Annual Grant will vest in full on the one-year anniversary of the date of grant, subject to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting date and will vest in full upon a Change in Control (as defined in the Plan).

As updated effective June 13, 2019

Exhibit 10.35
[***] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would likely be competitively harmful if publicly disclosed.

FIRST AMENDMENT TO LOAN AND SECURITY AGREEMENT

THIS **FIRST AMENDMENT** to Loan and Security Agreement (this "**Amendment**") is entered into as of December 24, 2019, by and between **OXFORD FINANCE LLC**, a Delaware limited liability company with an office located at 133 North Fairfax Street, Alexandria, Virginia 22314 ("**Oxford**"), as collateral agent (in such capacity, "**Collateral Agent**"), the Lenders listed on Schedule 1.1 hereof or otherwise a party hereto from time to time including Oxford in its capacity as a Lender (each a "**Lender**" and collectively, the "**Lenders**") and BELLICUM PHARMACEUTICALS, INC., a Delaware corporation with offices located at 2130 West Holcombe Boulevard, Suite 800, Houston, Texas 77030 ("**Borrower**").

Recitals

A. Collateral Agent, Lenders and Borrower have entered into that certain Loan and Security Agreement dated as of December 21, 2017 (as amended from time to time, the "**Loan Agreement**").

B. Lenders have extended credit to Borrower for the purposes permitted in the Loan Agreement.

C. Borrower desires to enter into the MD Anderson Asset Purchase Agreement (as defined herein) pursuant to which Borrower agrees to (i) sell, convey, transfer, assign and deliver to The University of Texas M.D. Anderson Cancer Center certain Purchased Assets (as defined in the MD Anderson Asset Purchase Agreement), and (ii) enter into certain other arrangements all as more particularly described in the MD Anderson Asset Purchase Agreement.

D. Borrower has requested that Collateral Agent and Lenders (i) consent to the MD Anderson Asset Purchase Agreement and the transactions contemplated therein as more fully set forth herein, (ii) modify the repayment provisions of the Loan Agreement, and (iii) make certain other revisions to the Loan Agreement as more fully set forth herein. In exchange for the agreement of the Lenders and Collateral Agent to (i) consent to the MD Anderson Asset Purchase Agreement and the transactions contemplated therein as more fully set forth herein, and (ii) modify the repayment provisions of the Loan Agreement, the Borrower has agreed to grant to the Lenders and the Collateral Agent a new security interest in Borrower's Intellectual Property as of the MD Anderson Closing Date, all as more fully set forth herein.

E. Collateral Agent and Lenders have agreed to amend certain provisions of the Loan Agreement to set forth the agreement above, but only to the extent, and subject to the terms and conditions and in reliance upon the representations and warranties, set forth below.

Agreement

Now, Therefore, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. **Definitions**. Capitalized terms used but not defined in this Amendment shall have the meanings given to them in the Loan Agreement.

2. **Consent**. Pursuant to Section 7.1 of the Loan Agreement, Borrower shall not Transfer all or any part of its business or property without the prior written consent of the Required Lenders, except for certain specifically enumerated permitted Transfers. Notwithstanding anything to the contrary contained in Section 7.1 of the Loan Agreement and provided that (i) all upfront payments, royalties, milestone payments or other proceeds arising from the MD Anderson Asset Purchase Agreement that are payable to Borrower or any of its Subsidiaries are paid to a Deposit Account that is governed by a Control Agreement in favor of Collateral Agent, and (ii) no Event of Default has occurred and is continuing prior to, or would occur immediately after, as a result of the consummation of the transactions contemplated by the MD Anderson Asset Purchase Agreement, Collateral Agent and Lenders hereby consent, subject to the terms hereof, to Borrower's (x) entry into the MD Anderson Asset Purchase Agreement and (y) the performance of Borrower's obligations therein, and agree that the execution and performance of the MD Anderson Asset Purchase Agreement shall not, in and of itself, constitute an "Event of Default" under Section 7.1 of the Loan Agreement

3. Amendments to Loan Agreement.

3.1 Section 2.2(b) (Term Loan). Section 2.2(b) of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"(b) Repayment. Borrower shall make monthly payments of interest only on each Payment Date during the Interest-Only Period. Borrower agrees to pay, on the Funding Date of the Term Loan, any initial partial monthly interest payment otherwise due for the period between the Funding Date of the Term Loan and the first Payment Date thereof. For each Payment Date which does not occur during the Interest-Only Period, Borrower shall make equal monthly payments of principal, together with applicable interest, in arrears, to each Lender, as calculated by Collateral Agent (which calculations shall be deemed correct absent manifest error) based upon: (1) the amount of such Lender's Term Loan, (2) the effective rate of interest, as determined in Section 2.3(a), and (3) a repayment schedule outlined in Annex I attached hereto, as applicable as determined by (x) the date of the MD Anderson Closing Date, and (y) the date of the achievement of the Capital Event; provided, however, that if the MD Anderson Closing Date is after January 31, 2020 then Collateral Agent shall provide an updated repayment schedule to account for the change in prepayment to be made on the MD Anderson Closing Date in accordance with Section 2.2(d)(ii). All unpaid principal and accrued and unpaid interest with respect to the Term Loan is due and payable in full on the Maturity Date. The Term Loan may only be prepaid in accordance with Sections 2.2(c) and 2.2(d)."

3.2 Section 2.2(d) (Term Loan). Section 2.2(d) of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"(d) Permitted Prepayment of Term Loan.

(i) Borrower shall have the option to prepay all, but not less than all, of the Term Loan advanced by the Lenders under this Agreement, provided Borrower (i) provides written notice to Collateral Agent of its election to prepay the Term Loan at least thirty (30) days prior to such prepayment, and (ii) pays to the Lenders on the date of such prepayment, payable to each Lender in accordance with its respective Pro Rata Share, an amount equal to the sum of (A) all outstanding principal of the Term Loan plus accrued and unpaid interest thereon through the prepayment date, (B) the Final Payment, (C) the Prepayment Fee, plus (D) all other Obligations that are due and payable, including Lenders' Expenses and interest at the Default Rate with respect to any past due amounts.

(ii) Notwithstanding anything herein to the contrary, on the MD Anderson Closing Date, Borrower shall prepay part of Term Loans advanced by the Lenders under this Agreement, payable to each Lender in accordance with its respective Pro Rata Share, in an amount equal to the sum of (A) a portion of the outstanding principal of the Term Loans equal to [***] ($[***]), plus all accrued and unpaid interest thereon through the prepayment date; provided, however, that if the MD Anderson Closing Date is after January 31, 2020 and prior to March 1, 2020 then such principal amount shall be equal to [***] ($[***]), (B) the applicable Final Payment with respect to the portion of such Term Loans being prepaid which shall be equal to [***] ($[***]); provided, however, that if the MD Anderson Closing Date is after January 31, 2020 and prior to March 1, 2020 then such applicable Final Payment shall be equal to [***] ($[***]), and (C) all outstanding Lenders' Expenses as of the MD Anderson Closing Date. If the MD Anderson Closing Date occurs on or after March 1, 2020 and on or prior to March 31, 2020 then the required prepayment amounts under this Section 3.2(d)(ii) shall be further reduced by the consecutive equal monthly scheduled payment made by Borrower on the outstanding principal of the Term Loans. For the purposes of clarity, any partial prepayment shall be applied pro-rata to all outstanding amounts under each Term Loan, and shall be applied pro-rata within each Term Loan tranche to reduce amortization payments under Section 2.2(b) on a pro-rata basis."

3.3 Section 5.2(d) (Collateral). Section 5.2(d) of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"(d) Borrower and each of its Subsidiaries is the sole owner of the Intellectual Property each respectively purports to own, free and clear of all Liens other than Permitted Liens. At all times after the MD Anderson Closing Date, (i) Each of Borrower's and its Subsidiaries' Patents is valid and enforceable and no part of Borrower's or its Subsidiaries' Intellectual Property has been judged invalid or unenforceable, in whole or in part, and (ii) to the best of Borrower's knowledge, no claim has been made that any part of the Intellectual Property or any practice by Borrower or its Subsidiaries violates the rights of any third party except to the extent

such claim could not reasonably be expected to have a Material Adverse Change. Except as noted on the Perfection Certificates, neither Borrower nor any of its Subsidiaries is a party to, nor is bound by, any material license or other material agreement with respect to which Borrower or such Subsidiary is the licensee that (i) prohibits or otherwise restricts Borrower or its Subsidiaries from granting a security interest in Borrower's or such Subsidiaries' interest in such material license or material agreement or any other property, or (ii) for which a default under or termination of could interfere with Collateral Agent's or any Lender's right to sell any Collateral. Borrower shall provide written notice to Collateral Agent and each Lender within ten (10) days of Borrower or any of its Subsidiaries entering into or becoming bound by any license or agreement with respect to which Borrower or any Subsidiary is the licensee (other than over-the-counter software that is commercially available to the public)."

3.4 Section 6.2 (Financial Statements, Reports, Certificates). Section 6.2(vii) of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"(vii) prompt notice of (A) at all times after the MD Anderson Closing Date, any material change in the composition of the Intellectual Property, (B) at all times after the MD Anderson Closing Date, the registration of any copyright, including any subsequent ownership right of Borrower or any of its Subsidiaries in or to any copyright, patent or trademark, including a copy of any such registration, and (C) any event that could reasonably be expected to materially and adversely affect the value of the Intellectual Property."

3.5 Section 6.7 (Protection of Intellectual Property Rights). Section 6.7 of the Loan Agreement hereby is amended and restated in its entirety to read as follows:

"**6.7 Protection of Intellectual Property Rights. Borrower and each of its** Subsidiaries shall: (a) use commercially reasonable efforts to protect, defend and maintain the validity and enforceability of its Intellectual Property that is material to Borrower's business; (b) promptly advise Collateral Agent in writing of material infringement by a third party of its Intellectual Property; and (c) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Collateral Agent's prior written consent. At all times after the MD Anderson Closing Date, if Borrower or any of its Subsidiaries (i) obtains any patent, registered trademark or servicemark, registered copyright, registered mask work, or any pending application for any of the foregoing, whether as owner, licensee or otherwise, or (ii) applies for any patent or the registration of any trademark or servicemark, then Borrower or such Subsidiary shall substantially contemporaneously provide written notice thereof to Collateral Agent and each Lender and shall execute such intellectual property security agreements and other documents and take such other actions as Collateral Agent shall reasonably request in its good faith business judgment to perfect and maintain a first priority perfected security interest in favor of Collateral Agent, for the ratable benefit of the Lenders, in such property. At all times after the MD Anderson Closing Date, if Borrower or any of its Subsidiaries decides to register any copyrights or mask works in the United States Copyright Office, Borrower or such Subsidiary shall: execute an intellectual property security agreement and such other documents and take such other actions as Collateral Agent may reasonably request in its good faith business judgment to perfect and maintain a first priority perfected security interest in favor of Collateral Agent, for the ratable benefit of the Lenders, in the copyrights or mask works intended to be registered with the United States Copyright Office; and (z) record such intellectual property security agreement with the United States Copyright Office contemporaneously with filing the copyright or mask work application(s) with the United States Copyright Office. At all times after the MD Anderson Closing Date, Borrower or such Subsidiary shall promptly provide to Collateral Agent and each Lender with evidence of the recording of the intellectual property security agreement necessary for Collateral Agent to perfect and maintain a first priority perfected security interest in such property."

3.6 Section 13.1 (Definitions). The following terms and their respective definitions hereby are added or amended and restated in their entirety, as applicable, to Section 13.1 of the Loan Agreement in their proper alphabetical order as follows:

"**Capital Event**" means delivery to Collateral Agent and Lenders of evidence, in form and content reasonably acceptable to Collateral Agent and Lenders, of the receipt by Borrower after the First Amendment Effective Date, but in no event later than March 31, 2021, of gross cash proceeds of not less than Thirty-Five Million Dollars ($35,000,000.00) from (i) the issuance and sale by Borrower of its equity securities to one or more investment partnerships advised by Baker Bros. pursuant to that certain Securities Purchase Agreement dated as of August 16, 2019 by and among Borrower and the Purchasers listed thereto, (ii) any sale of equity securities or (iii) any partnership or licensing arrangement of Borrower.

"**Interest-Only Period**" is the period commencing on the first (1st) Payment Date following the Funding Date of the Term Loan, and ending on January 31, 2020; provided that if the MD Anderson Closing Date is on or prior to March 31, 2020, the Interest-Only Period shall be automatically extended through December 31, 2020; provided further that if the MD Anderson Closing Date is on or prior to March 31, 2020 and the Borrower achieves the Capital Event, the Interest-Only Period shall extend for an additional seven (7) months beginning in the month following the month in which the Capital Event occurs, as outlined in Annex I attached hereto as applicable as determined by the date of the achievement of the Capital Event.

"**IP Agreement**" is that certain Intellectual Property Security Agreement entered into by and between Borrower and Collateral Agent dated as of the MD Anderson Closing Date, as such may be amended from time to time.

"**First Amendment Effective Date**" means December 24, 2019.

"**Loan Documents**" are, collectively, this Agreement, the Perfection Certificates, each Compliance Certificate, each Disbursement Letter, the Post Closing Letter, the IP Agreement, any subordination agreements, any note, or notes or guaranties executed by Borrower or any other Person, and any other present or future agreement entered into by Borrower, any Guarantor or any other Person for the benefit of the Lenders and Collateral Agent in connection with this Agreement; all as amended, restated, or otherwise modified.

"**MD Anderson Asset Purchase Agreement**" means that certain Asset Purchase Agreement by and between Borrower, as seller, and The University of Texas M.D. Anderson Cancer Center, as buyer, in substantially the form attached hereto as Annex II.

"**MD Anderson Closing Date**" means the Closing Date as defined in the MD Anderson Asset Purchase Agreement, which, for the sake of clarity, is the date on which the transactions contemplated by the MD Anderson Asset Purchase Agreement occur are consummated.

3.7 Section 13.1 (Definitions). The following defined term and its respective definition is hereby deleted from Section 13.1 of the Loan Agreement in its entirety:

"**Amortization Date**"

3.8 On the MD Anderson Closing Date, Exhibit A of the Loan Agreement hereby is replaced in its entirety with Exhibit A attached hereto.

4. Limitation of Amendment.

4.1 If the MD Anderson Closing Date is after March 31, 2020, the amendments set forth in Section 3 hereof shall be revoked and Collateral Agent, Lenders and Borrower shall renegotiate each of the respective provisions thereunder. Furthermore, if the MD Anderson Closing Date is after March 31, 2020, the consent provided by Collateral Agent in clause (y) of Section 2 related to performance of Borrower's obligations under the MD Anderson Asset Purchase Agreement shall be revoked, but, for the sake of clarity, the consent provided by Collateral Agent in clause (x) of Section 2 related to Borrower's entry into the MD Anderson Asset Purchase Agreement shall not be revoked.

4.2 The consent and amendments set forth in **Section 2** and **Section 3** above, are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right or remedy which Collateral Agent or any Lender may now have or may have in the future under or in connection with any Loan Document.

4.3 This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

5. Representations and Warranties. To induce Collateral Agent and Lenders to enter into this Amendment, Borrower hereby represents and warrants to Collateral Agent and Lenders as follows:

5.1 Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such

representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

5.2 Borrower has the power and authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

5.3 The organizational documents of Borrower delivered to Collateral Agent and Lenders on the Effective Date, or subsequent thereto, remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

5.4 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized;

5.5 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not and will not contravene (a) any law or regulation binding on or affecting Borrower, (b) any contractual restriction with a Person binding on Borrower, (c) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (d) the organizational documents of Borrower;

5.6 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower; and

5.7 This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

6. Release by Borrower.

6.1 FOR GOOD AND VALUABLE CONSIDERATION, Borrower hereby forever relieves, releases, and discharges Collateral Agent and each Lender and their respective present or former employees, officers, directors, agents, representatives, attorneys, and each of them, from any and all claims, debts, liabilities, demands, obligations, promises, acts, agreements, costs and expenses, actions and causes of action, of every type, kind, nature, description or character whatsoever, whether known or unknown, suspected or unsuspected, absolute or contingent, arising out of or in any manner whatsoever connected with or related to facts, circumstances, issues, controversies or claims existing or arising from the beginning of time through and including the date of execution of this Amendment solely to the extent such claims arise out of or are in any manner whatsoever connected with or related to the Loan Documents, the Recitals hereto, any instruments, agreements or documents executed in connection with any of the foregoing or the origination, negotiation, administration, servicing and/or enforcement of any of the foregoing (collectively "Released Claims").

6.2 By entering into this release, Borrower recognizes that no facts or representations are ever absolutely certain and it may hereafter discover facts in addition to or different from those which it presently knows or believes to be true, but that it is the intention of Borrower hereby to fully, finally and forever settle and release all matters, disputes and differences, known or unknown, suspected or unsuspected in respect of the Released Claims; accordingly, if Borrower should subsequently discover that any fact that it relied upon in entering into this release was untrue, or that any understanding of the facts was incorrect, Borrower shall not be entitled to set aside this release by reason thereof, regardless of any claim of mistake of fact or law or any other circumstances whatsoever. Borrower acknowledges that it is not relying upon and has not relied upon any representation or statement made by Bank with respect to the facts underlying this release or with regard to any of such party's rights or asserted rights.

6.3 This release may be pleaded as a full and complete defense and/or as a cross-complaint or counterclaim against any action, suit, or other proceeding that may be instituted, prosecuted or attempted in breach of this release. Borrower acknowledges that the release contained herein constitutes a material inducement to Collateral Agent and the Lenders to enter into this Amendment, and that Collateral Agent and the Lenders would not have done so but for Collateral Agent's and the Lenders' expectation that such release is valid and enforceable in all events.

6.4 Borrower hereby represents and warrants to Collateral Agent and the Lenders, and Collateral Agent and the Lenders are relying thereon, as follows:

(a) Except as expressly stated in this Amendment, neither Collateral Agent, the Lenders nor any agent, employee or representative of any of them has made any statement or representation to Borrower regarding any fact relied upon by Borrower in entering into this Amendment.

(b) Borrower has made such investigation of the facts pertaining to this Amendment and all of the matters appertaining thereto, as it deems necessary.

(c) The terms of this Amendment are contractual and not a mere recital.

(d) This Amendment has been carefully read by Borrower, the contents hereof are known and understood by Borrower, and this Amendment is signed freely, and without duress, by Borrower.

(e) Borrower represents and warrants that it is the sole and lawful owner of all right, title and interest in and to every claim and every other matter which it releases herein, and that it has not heretofore assigned or transferred, or purported to assign or transfer, to any person, firm or entity any claims or other matters herein released. Borrower shall indemnify Collateral Agent and the Lenders, defend and hold each harmless from and against all claims based upon or arising in connection with prior assignments or purported assignments or transfers of any claims or matters released herein.

7. Counterparts. This Amendment may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

8. Effectiveness. This Amendment shall be deemed effective upon (i) the due execution and delivery to Collateral Agent and Lenders of this Amendment by each party hereto, (ii) the due execution and delivery to Collateral Agent of the Corporate Borrowing Certificate attached hereto, and (iii) Borrower's payment of all Lenders' Expenses incurred through the First Amendment Effective Date.

9. Conditions Subsequent. Borrower agrees to provide Collateral Agent and the Lenders at least two (2) days prior written notice of the date that will be the MD Anderson Closing Date. Only if the MD Anderson Closing Date is on or prior to March 31, 2020 and pursuant to the terms of Section 3, Borrower agrees to on such MD Anderson Closing Date on or prior to March 31, 2020 (i) execute and deliver to the Collateral Agent and Lenders the Intellectual Property Security Agreement by each party hereto, (ii) Collateral Agent's filing of a UCC-3 in respect of the existing UCC-1 filed with the Delaware Secretary of State naming Collateral Agent, as secured party, and Borrower, as debtor, amending the description of the Collateral to conform with Exhibit A as revised by this Amendment, and (iii) pay of all Lenders' Expenses incurred through the MD Anderson Closing Date.

[*Balance of Page Intentionally Left Blank*]

In Witness Whereof, the parties hereto have caused this Amendment to be duly executed and delivered as of the date first written above.

COLLATERAL AGENT AND LENDER:

OXFORD FINANCE LLC

By: */s/ Colette H. Featherly*
Name: Colette H. Featherly
Title: Senior Vice President

BORROWER:

BELLICUM PHARMACEUTICALS, INC.

By: */s/ Atabak Mokari*
Name: Atabak Mokari
Title: CFO

EXHIBIT A

Description of Collateral

The Collateral consists of all of Borrower's right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles (including all Intellectual Property), commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts and other Collateral Accounts, all certificates of deposit, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

All Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include (i) more than sixty-five percent (65%) of the total combined voting power of all classes of stock entitled to vote the shares of capital stock (the "Shares") of any Foreign Subsidiary, if Borrower demonstrates to Collateral Agent's reasonable satisfaction that a pledge of more than sixty-five percent (65%) of the Shares of such Subsidiary creates a present and existing adverse tax consequence to Borrower under the U.S. Internal Revenue Code; (ii) any license or contract, in each case if the granting of a Lien in such license or contract is prohibited by or would constitute a default under the agreement governing such license or contract (but (A) only to the extent such prohibition is enforceable under applicable law and (B) other than to the extent that any such term would be rendered ineffective pursuant to Sections 9-406, 9-408 or 9-409 (or any other Section) of Division 9 of the Code); provided that upon the termination, lapsing or expiration of any such prohibition, such license or contract, as applicable, shall automatically be subject to the security interest granted in favor of Collateral Agent hereunder and become part of the "Collateral; (iii) cash securing obligations permitted under clause (h) of the definition of Permitted Indebtedness; (iv) Excluded Accounts; (v) any "intent to use" application for registration of a trademark filed pursuant to Section 1(d) of the Lanham Act, 15 U.S.C. Section 1051, prior to the filing of a "Statement of Use" pursuant to Section 1(d) of the Lanham Act or an "Amendment to Allege Use" pursuant to Section 1(c) of the Lanham Act with respect thereto, to the extent that, and during the period in which, the grant of a security interest therein would impair the validity or enforceability of any registration that issues from such intent-to-use application under applicable federal law, and (vi) any interest of Borrower as a lessee under an Equipment lease if Borrower is prohibited by the terms of such lease from granting a security interest in such lease or under which such an assignment or Lien would cause a default to occur under such lease; provided, however, that upon termination of such prohibition, such interest shall immediately become Collateral without any action by Borrower or Oxford.

ANNEX I

[Amortization Schedule]

[***]

ANNEX II

[MD Anderson Asset Purchase Agreement]

[***]

Exhibit 10.38
[***] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would likely be competitively harmful if publicly disclosed.

Execution Version

ASSET PURCHASE AGREEMENT

by and between

Bellicum Pharmaceuticals, Inc.,

as Seller,

and

The University of Texas M.D. Anderson Cancer Center,

as Buyer

January 17, 2020

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ASSET PURCHASE AGREEMENT

THIS ASSET PURCHASE AGREEMENT is made and entered into as of January 17, 2020 (the "Effective Date") by and between Bellicum Pharmaceuticals, Inc., a Delaware corporation ("Seller"), and The University of Texas M.D. Anderson Cancer Center, an institution of higher education and an agency of the State of Texas ("Buyer"). Capitalized terms used but not defined in this Agreement shall have the respective meanings ascribed thereto in Exhibit A.

RECITALS

WHEREAS, Seller owns, leases and operates a biomanufacturing facility and related laboratories and office space located at 2130 W. Holcombe Blvd., Houston, Texas 77030, as described more fully on Exhibit B hereto (the "Facility");

WHEREAS, Seller uses a portion of the Facility to manufacture certain proprietary cell therapy products owned by Seller in compliance with current Good Manufacturing Practice requirements;

WHEREAS, Seller wishes to sell and assign to Buyer certain specified assets and specified liabilities located at or associated with the Facility, and in connection therewith, secure from Buyer clinical supply manufacturing services at the Facility for Seller's proprietary cell therapy products, such services to be provided pursuant to a master services agreement (as further described herein, the "MSA");

WHEREAS, Buyer desires to purchase and assume from Seller certain specified assets and certain specified liabilities of Seller located at or associated with the Facility, on the terms and conditions set forth herein, and, in connection therewith, Buyer desires to enter into the MSA; and

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

ARTICLE I
PURCHASE AND SALE

Section 1.01 Purchase and Sale of Assets. Subject to the terms and conditions set forth in this Agreement, at the Closing, Seller shall sell, convey, transfer, assign and deliver to Buyer, and Buyer shall purchase, acquire, assume, accept and receive from Seller, free and clear of any Encumbrances, all of Seller's right, title and interest in, to and under all of the assets, properties and rights of every kind and nature, whether real, personal or mixed, tangible or intangible, wherever located and whether now existing or hereafter acquired (other than the Excluded Assets), which are owned, used or held for use by Seller or its Affiliates in connection with the operation of the Facility (collectively, the "Purchased Assets"), including the following:

(a) the Contracts listed on Section 1.01(a) of the Disclosure Schedules (the "Assigned Contracts");

(b) all rights of Seller as lessee under the Leases listed on Schedule 1.01(b) of the Disclosure Schedules (the "Real Property Leases"), including all rights of Seller in and to the Leasehold Improvements situated on the premises leased under the Real Property Leases;

(c) to the extent transferable, all Permits that are held or used by (or which have been filed or delivered by or on behalf of) Seller and required for the operation of the Facility as currently operated or for the ownership and use of the Purchased Assets as currently constituted, including those Permits described in Section 1.01(c) of the Disclosure Schedules;

(d) each item of capital equipment owned by the Seller and located at the Facility (the "Equipment Assets"), including such Equipment Assets set forth on Section 1.01(d) of the Disclosure Schedules;

(e) all furniture, fixtures, equipment, machinery, tools, vehicles, office equipment, supplies, computer hardware, telephones, data processing equipment, office furnishings, instruments, tooling, leasehold improvements, spare parts, keys, access cards, codes, files, warranties, and, to the extent assignable or transferable by Seller, all rights in all warranties of any manufacturer or vendor with respect thereto, and other tangible personal property, including the tangible personal property described in Section 1.01(e) of the Disclosure Schedules;

(f) all inventory, finished goods, raw materials, work in progress, packaging, supplies, parts and other inventories (including any rights to rebates, refunds or discounts due with respect thereto, "Inventory"), including the Inventory

described in Section 1.01(f) of the Disclosure Schedules, but excluding all cell therapy products manufactured by Seller and all Inventory used in the manufacture of such products ("Seller Products");

(g) all books, records and data (whether in electronic form or otherwise), including, books of account, ledgers and general, financial and accounting records, machinery and equipment maintenance files, supplier lists, inventory records, production data, quality control records and procedures, and all documentation that relates to Seller's Standard Operating Procedures ("SOPs") exclusively relating to the operation of the Facility, including documentation that supports the Facility's compliance with the cGMP requirements for Phase I clinical supply, but excluding books, records, and data directly related to Seller's cell therapy products or other proprietary programs of Seller or its Affiliates;

(h) any insurance proceeds arising in connection with damage to the Purchased Assets occurring prior to Closing as contemplated by Section 6.13 and all guaranties and warranties concerning any of the Purchased Assets; and

(i) all goodwill and the going concern value of the Facility and the Purchased Assets.

Section 1.02 Excluded Assets. Notwithstanding the foregoing, the Purchased Assets shall not include any of Seller's right, title and interest in, to and under any or all of following (collectively, the "Excluded Assets"):

(a) those assets, properties or rights of Seller set forth on Section 1.02(a) of the Disclosure Schedules;

(b) any computer (including both hardware and software), communications, and networking equipment of Seller or located at the Facility, except any such equipment that is a component of any System (as defined on the Disclosure Schedules) that is listed as an Equipment Asset pursuant to Section 1.01(d) of the Disclosure Schedules.

(c) any benchtop laboratory equipment located in the vivarium or research and development laboratories located on the 8th floor of the Facility within the area subject to the Sublease;

(d) any cash, commercial paper, certificates of deposit and other bank deposits, treasury bills or similar fixed-income investments, short-term investments or any other cash equivalents;

(e) any bank account of Seller;

(f) any Contracts other than the Assigned Contracts (collectively, the "Excluded Contracts");

(g) any Seller Products;

(h) any Intellectual Property owned by Seller, including any clinical or non-clinical data of Seller and its Affiliates other than as set forth in Section 1.01(g);

(i) any Permit, other than as set forth on Section 1.01(c) of the Disclosure Schedules;

(j) any real estate owned or leased by Seller or any of its Affiliates, and any interest arising thereunder, other than the Real Property Leases listed on Section 1.01(b) of the Disclosure Schedules;

(k) all signage, banners, displays and other assets containing, displaying or otherwise bearing any Seller's Intellectual Property;

(l) any Benefit Plan, or any rights in connection with, or any assets of, any Benefit Plan, including any rights under any Contract or Insurance Policy that pertains to the creation, administration or funding of any such Benefit Plan;

(m) any of Seller's rights in, to or under Insurance Policies, and all rights to applicable claims and proceeds thereunder (other than insurance proceeds arising in connection with damage to the Purchased Assets occurring prior to the Closing that are required to be assigned to Buyer pursuant to Section 6.15 as described in Section 1.01(h), except to the extent that such rights transfer to Buyer by operation of Law or relate to an Assumed Liability);

(n) any books, records, and data directly related to Seller's cell therapy products or other proprietary programs of Seller or its Affiliates;

(o) any equity interests in Seller or any of its Affiliates;

(p) any rights, claims and credits of Seller or any of its Affiliates relating to any Excluded Asset or any Excluded Liability, including any guarantees, warranties, indemnities, and similar rights in favor of Seller or any of its Affiliates relating to any Excluded Asset or any Excluded Liability; and

(q) the corporate seals, organizational documents, minute books, stock books, Tax Returns, books of account or other records having to do with the corporate organization of Seller.

Prior to Closing, Seller shall remove the Excluded Assets from the Leased Real Property at Seller's sole expense except to the extent such Excluded Assets remain in the portion of the premises described in the Sublease Agreement for the duration thereof, but subject to removal of such Excluded Assets upon the termination or expiration of the Sublease Agreement.

Section 1.03 Assumed Liabilities. Subject to the terms and conditions set forth in this Agreement, from and after the Closing, Buyer agrees to assume and pay, perform and discharge only those Liabilities of Seller arising after the Closing under the Assigned Contracts (the "Assumed Liabilities"); *provided*, *however*, that the Assumed Liabilities shall not include, and Buyer shall not assume or have any obligation to pay, perform or discharge, any Liability that relates to any failure to perform, improper performance, warranty or other breach, default or violation of any kind by Seller, any of Seller's Affiliates or any other Person at any time prior to or at the Closing.

Section 1.04 Excluded Liabilities. Notwithstanding the provisions of Section 1.03 or any other provision of this Agreement or any Ancillary Document to the contrary, Buyer is not assuming, nor shall Buyer have any obligation to pay, perform or discharge, any Liabilities of Seller, any of Seller's Affiliates or any other Person, other than the Assumed Liabilities (all such other Liabilities, the "Excluded Liabilities"). Seller shall, and shall cause its Affiliates to, pay, perform and discharge, as and when due, all Excluded Liabilities.

ARTICLE II
PURCHASE PRICE; PAYMENT

Section 2.01 Purchase Price. Subject to the terms and conditions hereof, the purchase price for the Purchased Assets and the assumption of the Assumed Liabilities shall be an amount equal to Fifteen Million Dollars ($15,000,000) (the "Purchase Price").

Section 2.02 Payment of Purchase Price.

(a) At the Closing, Buyer shall pay or cause to be paid to Seller, by wire transfer in U.S. dollars of immediately available funds to such bank account or accounts as shall be designated in writing by Seller, an amount equal to the Purchase Price less the Escrow Amount.

(b) At the Closing, pursuant to the terms of an escrow agreement by and among Buyer, Seller and the Escrow Agent in the form attached hereto as Exhibit C (the "Escrow Agreement"), Buyer shall deposit into an escrow account (the "Escrow Account") with the Escrow Agent an amount equal to One Million Five Hundred Thousand Dollars ($1,500,000) (the "Escrow Amount") by wire transfer of immediately available funds, in accordance with the Escrow Agreement, to secure Seller's continuing obligations, covenants, agreements and liabilities under this Agreement, including Seller's obligations under Article VII hereof. The Escrow Amount shall be disbursed by the Escrow Agent in accordance with the terms of the Escrow Agreement and this Agreement. The creation of the Escrow Agreement, the funding thereof and Buyer's access thereto shall not limit or be deemed to limit any liability or obligation of Seller under this Agreement, including, without limitation, those set forth in Article VII hereof. Unless the Escrow Agreement is earlier mutually terminated in writing by Buyer and Seller in accordance with its terms, the Escrow Amount shall be held by the Escrow Agent for a period of eighteen (18) months after the Closing, or until all claims asserted by Buyer against the Escrow Account during such eighteen (18) month period have been satisfied, whichever occurs last (the "Escrow Period"). The Escrow Agent shall pay and distribute to Buyer or Seller, as applicable, funds from the Escrow Account in accordance with the Escrow Agreement. The Escrow Amount shall be invested in certain permitted investments pursuant to the Escrow Agreement.

Section 2.03 Allocation of Purchase Price. Buyer and Seller agree that the Purchase Price shall be allocated among the Purchased Assets in the manner required by Section 1060 of the Code and the Treasury Regulations thereunder (and any similar provisions of state or local Law). Seller and Buyer shall provide the other promptly with any other information reasonably required to complete an allocation schedule prepared in accordance with Section 1060 of the Code (the "Allocation Schedule"). Within thirty (30) days after the Closing Date, Seller shall deliver to Buyer the Allocation Schedule. The Allocation Schedule shall be deemed final unless Buyer notifies Seller in writing that Buyer objects to the Allocation Schedule within fifteen (15) days after Seller's delivery thereof, in which event Buyer and Seller will negotiate in good faith to resolve such dispute. If Buyer and Seller

cannot resolve such dispute within twenty (20) days after Buyer notifies Seller of such objections, such dispute with respect to the Allocation Schedule shall be resolved promptly by a nationally recognized accounting firm acceptable to Buyer and Seller, the costs of which shall be borne by Seller. Seller and Buyer shall prepare and file Form 8594 or such other form or statement as may be required by Law, and any comparable state or local income tax form in a manner consistent with the Allocation Schedule. Seller and Buyer shall adhere to the Allocation Schedule for all Tax-related purposes including any federal, foreign, state, county or local income and franchise Tax Return filed by them after the Closing Date, including the determination by Seller of taxable gain or loss on the sale of the Purchased Assets and the determination by Buyer of its tax basis with respect to the Purchased Assets.

Section 2.04 Withholding Tax. Buyer shall be entitled to deduct and withhold from the Purchase Price all Taxes that Buyer may be required to deduct and withhold under any provision of applicable Law. To the extent that amounts are so withheld by Buyer, such withheld amounts (i) shall be remitted by Buyer to the applicable Governmental Authority, and (ii) shall be treated for all purposes of this Agreement as having been paid to Seller in respect of which such deduction and withholding was made by Buyer; provided that, prior to making any deduction or withholding from any payment under this Agreement, Buyer shall provide two (2) days' prior written notice to Seller of the amounts subject to deduction or withholding and provide to Seller a reasonable opportunity to furnish forms, certificates or other items that would reduce or eliminate such deduction or withholding; provided further, that Buyer shall reasonably cooperate with Seller to minimize any such deduction or withholding. As soon as reasonably practicable after any deduction or withholding is made, Buyer shall deliver to Seller the original or copy of the official receipt issued by the relevant Governmental Authority evidencing such payment or other evidence of such payment reasonably satisfactory to Seller.

Section 2.05 Proration. Seller and Buyer shall prorate as of the Closing Date, in accordance with Section 26.11 of the Texas Tax Code, all Taxes owed on any personal property included in the Purchased Assets. Within ninety (90) days after the Closing Date, Seller and Buyer shall prorate as of the Closing Date: (a) any amounts that were paid by Seller prior to the Closing and relate, in whole or in part, to periods ending after the Closing Date, and (b) any amounts that become due and payable after the Closing Date to the extent such amounts accrued prior to Closing or result from services rendered by Seller prior to Closing, in each case, with respect to (i) the Assigned Contracts, and (ii) all utilities servicing any of the Purchased Assets, including water, sewer, telephone, electricity and gas service. Any such amounts that are not available within ninety (90) days after the Closing Date shall be similarly prorated as of the Closing Date as soon as practicable thereafter. Within five (5) Business Days following each proration of amounts pursuant to this Section: (a) each party shall pay its prorated portion of such amounts to the applicable payee; and (b) if either party has paid to any payee more than such party's prorated portion of such amounts, the other party shall reimburse the first party for such excess payment.

ARTICLE III
CLOSING

Section 3.01 Closing. The consummation of the transactions contemplated by this Agreement (the "Closing") shall take place on the third Business Day after the date on which all of the conditions set forth in Section 3.02 and Section 3.03 have been satisfied or waived in writing (other than those conditions that by their terms are to be satisfied or waived at the Closing), or such other date as may be agreed upon in writing by Buyer and Seller (the "Closing Date"); *provided, however,* that the parties shall use commercially reasonable efforts to have the Closing occur prior to or on February 21, 2020.

Section 3.02 Conditions Precedent to the Obligations of Buyer. Each and every obligation of Buyer to be performed on the Closing Date shall be subject to the satisfaction or written waiver of Buyer (in its sole and absolute discretion) prior to or at the Closing of the following express conditions precedent:

(a) The Board of Regents of the University of Texas System (the "UT Board of Regents") shall have approved Buyer's execution of this Agreement and the performance by it of the transactions and agreements contemplated hereby;

(b) Each of the representations and warranties of Seller contained in this Agreement and in any document, instrument or certificate delivered hereunder shall be true and correct in all material respects when made and at and as of the Closing Date with the same force and effect as though all such representations and warranties had been made on and as of such date, and each of the Fundamental Representations of Seller shall be true and correct on and as of the Closing Date;

(c) Seller shall have performed and complied in all material respects with all of its agreements, obligations and covenants under this Agreement, which are to be performed or complied with by it prior to or on the Closing Date;

(d) No Action shall be threatened or pending before any Governmental Authority that seeks restraint, prohibition, damages or other relief in connection with this Agreement or the consummation of the transactions contemplated hereby and no court or any other Governmental Authority shall have issued an order restraining or prohibiting any of the transactions contemplated hereby;

(e) Since the date of this Agreement, there shall not have been a Material Adverse Effect and no event or circumstance shall have occurred which might reasonably be expected to result in a Material Adverse Effect;

(f) Seller has obtained in writing and shall have delivered to Buyer all of the consents set forth in Section 4.02(a) and Section 4.02(b) of the Disclosure Schedules (the "Required Consents"), in form and substance reasonably satisfactory to Buyer and Buyer's legal counsel;

(g) All Encumbrances upon the Purchased Assets and the Facility shall have been released, and Seller shall have delivered to Buyer (i) a UCC lien search dated no earlier than ten (10) days prior to Closing showing no Encumbrances upon the Purchased Assets and (ii) any other documentation reasonably required by the title company issuing title insurance for the Leased Real Property to remove all Schedule C exceptions from the title policy or add any endorsements to such policy as reasonably requested by Buyer;

(h) With respect to each Permit set forth on Section 4.11(b) of the Disclosure Schedules that is necessary for Seller to continue to operate the Facility after the Closing Date in substantially the same manner as conducted by Seller immediately prior to the Closing Date, (i) to the extent transferable and required to be transferred on or prior to the Closing, such Permit shall have been transferred to Buyer on or prior to the Closing or Buyer shall have otherwise obtained such Permit or (ii) Seller shall have filed with the appropriate Governmental Authorities all documentation required to be so filed by Seller so that such Permit will be transferred (to the extent transferable) to, or obtained by, Buyer after the Closing so as to allow Buyer to operate the Facility after the Closing Date;

(i) Successful completion of an on-site inspection of the Leased Real Property by (i) the Texas Department of Licensing and Regulation ("TDLR"), (ii) an entity who has contracted with the Texas Commission of Licensing and Regulation ("TCLR") pursuant to Texas Government Code §469.055, or (iii) a person who holds a certificate of registration issued pursuant to Texas Government Code §469.201, to ensure compliance with the accessibility standards and specifications adopted by TCLR, and correction of any noncompliance with such accessibility standards and specifications, as required under the Real Property Lease; and

(j) Seller shall have delivered to Buyer the following documents, each properly executed and dated as of the Closing Date:

(i) a bill of sale, in substantially the form attached hereto as Exhibit D (the "Bill of Sale"), duly executed by Seller, conveying good and marketable title to the Purchased Assets to Buyer free and clear of all Encumbrances;

(ii) an assignment and assumption agreement, in substantially the form attached hereto as Exhibit E (the "Assignment and Assumption Agreement"), duly executed by Seller, effecting the assignment to and assumption by Buyer of the applicable Purchased Assets and the Assumed Liabilities;

(iii) the Escrow Agreement, duly executed by Seller and the Escrow Agent;

(iv) a master services agreement, substantially in the form attached hereto as Exhibit F (the "Master Services Agreement"), and an initial work order under the Master Services Agreement ("Work Order #1"), substantially in the form attached hereto as Exhibit G, duly executed by Seller, pursuant to which Buyer will supply to Seller certain products manufactured by Buyer;

(v) [DELETED]

(vi) with respect to each Real Property Lease, (a) a Termination of Lease duly executed by all relevant parties, and (b) either (x) an Amendment of Lease or (y) a new, original lease between Buyer and landlord, all in form and substance acceptable to Buyer, in its sole and absolute discretion, delivering the Leased Real Property to Buyer;

(vii) a sublease agreement, duly executed by Seller, pursuant to which Buyer will grant Seller the option to lease a portion of the Leased Real Property on mutually agreed upon terms inclusive of the terms described on Exhibit H, subject to approval by the landlord and The University of Texas System (the "Sublease Agreement");

(viii) a non-foreign affidavit, duly executed by Seller, dated as of the Closing Date, sworn under penalty of perjury and in form and substance required under Treasury Regulations Section 1.1445-2(b), certifying that Seller is not a "foreign person" as defined in Section 1445 of the Code;

(ix) a certificate of the secretary or an assistant secretary (or equivalent officer) of Seller, certifying that attached thereto are true and complete copies of all resolutions adopted by the board of directors of Seller authorizing the execution, delivery and performance of this Agreement and the Ancillary Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby;

(x) A certificate of Seller certifying that the conditions set forth in Section 3.02(b) and Section 3.02(c) have been satisfied;

(xi) Certificates of incumbency for the officers of Seller executing this Agreement or any other document contemplated herein dated as of the Closing Date;

(xii) Certificates of existence and good standing of Seller from the States of Texas and Delaware, dated the most recent practicable date prior to the Closing Date; and

(xiii) such other customary agreements, instruments or documents, in form and substance reasonably satisfactory to Buyer, as may be required to give effect to this Agreement, the Ancillary Documents or the transactions contemplated hereby or thereby.

Section 3.03 Conditions Precedent to the Obligations of Seller. Each and every obligation of Seller to be performed on the Closing Date shall be subject to the satisfaction or written waiver by Seller (in its sole and absolute discretion) prior to or at the Closing of the following express conditions precedent:

(a) Each of the representations and warranties of Buyer contained in this Agreement and in any document, instrument or certificate delivered hereunder shall be true and correct in all material respects when made and at and as of the Closing Date with the same force and effect as though all such representations and warranties had been made on and as of such date;

(b) Buyer shall have performed and complied in all material respects with all of its agreements, obligations and covenants under this Agreement which are to be performed or complied with by it prior to or on the Closing Date;

(c) No Action shall be threatened or pending before Governmental Authority that seeks restraint, prohibition, damages or other relief in connection with this Agreement or the consummation of the transactions contemplated hereby and no court or any other Governmental Authority shall have issued an order restraining or prohibiting any of the transactions contemplated hereby; and

(d) Buyer shall have delivered to Seller the following documents, each properly executed and dated as of the Closing Date:

(i) the Assignment and Assumption Agreement, duly executed by Buyer;

(ii) the Escrow Agreement, duly executed by Buyer;

(iii) the Master Services Agreement and Work Order #1, each duly executed by Buyer;

(iv) the Amendment of Lease, duly executed by Buyer;

(v) the Sublease Agreement, executed by Buyer;

(vi) a certificate of Buyer certifying that the conditions set forth in Section 3.03(a) and Section 3.03(b) have been satisfied; and

(vii) such other customary agreements, instruments or documents, in form and substance reasonably satisfactory to Seller, as may be required to give effect to this Agreement, the Ancillary Documents or the transactions contemplated hereby or thereby.

ARTICLE IV
REPRESENTATIONS AND WARRANTIES OF THE SELLER

Except as set forth in the correspondingly numbered Section of the Disclosure Schedules, Seller represents and warrants to Buyer that the statements contained in this Article IV are true and correct as of the date hereof and as of the Closing.

Section 4.01 Organization and Authority; Enforceability; Binding Agreement.

(a) Seller is a corporation duly organized, validly existing and in good standing under the Laws of the State of Delaware. Seller has full corporate power and authority to carry on its business as it is currently being conducted and to own, operate and hold under lease its assets and properties as, and in the places where, such assets and properties are currently owned, operated or held.

(b) Seller has the full corporate power and authority to execute and deliver this Agreement and the Ancillary Agreements and to perform its obligations under this Agreement and the Ancillary Agreements. The execution and delivery by Seller of this Agreement and each Ancillary Agreement to be executed and delivered by it, the performance by Seller of its obligations hereunder and thereunder and the consummation by Seller of the transactions contemplated hereby and thereby have been duly and validly authorized by all necessary corporate action on the part of Seller and no other corporate proceedings on the part of Seller are required to authorize this Agreement or any of the documents or instruments required hereby or for Seller to consummate the transactions contemplated hereby or thereby. This Agreement is, and the Ancillary Agreements to which Seller is a party will be, when executed and delivered by the parties thereto, the valid and binding obligation of Seller, enforceable against Seller in accordance with their respective terms, except to the extent that (i) such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar Laws relating to creditors' rights generally and is subject to general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law) and (ii) specific performance may not be available in certain jurisdictions outside the U.S.

Section 4.02 No Violation or Conflict; Consents. Except as set forth on Section 4.02(a) of the Disclosure Schedules, the execution, delivery and performance by Seller of this Agreement and the Ancillary Documents to which it is a party, and the consummation of the transactions contemplated hereby and thereby, do not and will not: (a) conflict with or result in a violation or breach of, or default under, any provision of the articles of incorporation, articles of organization, bylaws, operating agreement or other organizational documents of Seller; (b) conflict with or result in a violation or breach of any provision of any Law or Governmental Order applicable to Seller or any of the Purchased Assets; (c) require the consent of, notice to, or other action by or with respect to any Person under, conflict with, result in a violation or breach of, constitute a default or an event that, with or without notice or lapse of time or both, would constitute a default under, result in the acceleration of or create in any party the right to accelerate, terminate, modify or cancel any Assigned Contract or any Permit included in the Purchased Assets; or (d) result in the creation or imposition of any Encumbrance on any of the Purchased Assets. Except as set forth on Section 4.02(b) of the Disclosure Schedules, no notice to, filing or registration with, or authorization, consent or Approval of, any Governmental Authority is necessary or is required to be made or obtained by Seller in connection with the execution and delivery of this Agreement or any of the Ancillary Documents and the consummation of the transactions contemplated hereby and thereby.

Section 4.03 [DELETED]

Section 4.04 Absence of Certain Changes, Events and Conditions. Since September 30, 2019, (a) Seller has conducted its business with respect to the Purchased Assets only in the ordinary course consistent with past practices, and (b) there has not been any (i) event, occurrence or development that has had, or would reasonably be expected to have a Material Adverse Effect, (ii) incurrence of any Seller Indebtedness, (iii) sale or other disposition of any asset constituting or which otherwise would have constituted a Purchased Asset, (iv) material increase or decrease in the level of Inventory purchased or consumed (excluding Seller Products), (v) cancellation of any debts or claims or amendment, termination or waiver of any rights constituting or which otherwise would have constituted a Purchased Asset, (vi) increase in any compensation of any Seller Employees set forth on Section 6.01 of the Disclosure Schedules (including any increase pursuant to any bonus, insurance, pension, profit-sharing, retirement, or other Benefit Plan or commitment), (vii) adoption of any plan of merger, consolidation, reorganization, liquidation or dissolution or filing of a petition in bankruptcy under any provisions of federal or state bankruptcy Law or consent to the filing of any bankruptcy petition against it under similar Law, in each case, affecting the operation of the Facility or any of the Purchased Assets, or (ix) entry into any Contract to do any of the foregoing.

Section 4.05 Contracts.

(a) Section 4.05(a) of the Disclosure Schedules contains a true and complete list of all Contracts (including the date and title of the Contract, the parties thereto, the term thereof, any requirement for consent to assignment of such Contract by Seller to Buyer, and any and all amendments or modifications thereto) (x) to which Seller is a party or by which it is bound in connection with the Facility, Assumed Liabilities or Purchased Assets or the operation thereof, or (y) by which the Facility or any Purchased Asset is bound or affected (each, a "Material Contract"), including:

(i) all Contracts for the purchase or sale of Inventory, materials, supplies, merchandise, machinery, equipment, parts or other property, assets, or services requiring aggregate future payments or involving aggregate future receipts in excess of $1,000, other than purchase orders with Seller's suppliers entered into in the ordinary course of business;

(ii) all Real Property Leases;

(iii) all employment agreements and Contracts with independent contractors, contingent workers or consultants (or similar arrangements) of Seller;

(iv) all Contracts relating to Seller Indebtedness;

(v) all Contracts with any Governmental Authority;

(vi) all Contracts that limit or purport to limit the ability of Seller or, following the Closing, Buyer or any of its Affiliates to compete in any line of business or with any Person or in any geographic area or during any period of time;

(vii) all joint development, joint venture, partnership or similar Contracts;

(viii) all Contracts for the sale of any of the Purchased Assets or for the grant to any Person of any option, right of first refusal or preferential or similar right to purchase any of the Purchased Assets;

(ix) all broker, distributor, dealer, manufacturer's representative, franchise, agency, sales promotion, market research, marketing consulting and advertising Contracts; and

(x) all powers of attorney with respect to any Purchased Asset.

(b) Seller has made available to Buyer true and complete copies of all Material Contracts, including all schedules, exhibits, modifications, amendments and supplements thereto. Each Material Contract is in full force and effect and is a legal, valid and binding obligation of Seller as a party thereto and, to Seller's knowledge, the other parties thereto, in accordance with its terms and conditions, in each case subject to applicable bankruptcy, insolvency, moratorium, or other similar Laws relating to creditors' rights and general principles of equity. Neither Seller nor, to Seller's knowledge, any other party thereto is in breach of or default under (or is alleged to be in breach of or default under), or has provided or received any notice of any intention to terminate or materially modify the terms of, any Material Contract. There are no material disputes pending or, to Seller's knowledge, threatened under any Material Contract. To Seller's knowledge, no condition exists or event has occurred (or failed to occur) which, alone or with the giving of notice, the lapse of time or both, would constitute a material default or a claim of excusable delay or non-performance under any of the Material Contracts. Each Material Contract is in full force and effect and will be in full force and effect immediately following the Closing.

(c) Each Material Contract constitutes the entire agreement by and between the respective parties thereto with respect to the subject matter of such Material Contract.

(d) Except as expressly set forth on Section 4.05(d) of the Disclosure Schedules, none of the Assigned Contracts requires consent to the assignment to and assumption by Buyer. Except as expressly set forth on Section 4.05(d) of the Disclosure Schedules, the assignment of the Assigned Contracts to and assumption of the Assigned Contracts by Buyer will not result in any breach, penalty, premium or material variation of the rights, remedies, benefits or obligations of any party thereunder. Except as expressly set forth on Section 4.05(d) of the Disclosure Schedules, Seller has not given or received any correspondence or other notice (whether written or oral) with respect to any actual, alleged or potential violation, breach or default under or any demand for renegotiation or termination with respect to any Contract. Other than as expressly set forth on Section 4.05(d) of the Disclosure Schedules, no Contract contains any non-competition restriction, take-or-pay arrangement or other term that requires

the business to deal exclusively with a particular party with respect to particular goods or services. Each Contract was entered into in the ordinary course of business and without the commission of any act, or any consideration having been paid or promised, which is or would be in violation of any Law. Except as expressly disclosed on Section 4.05(d) of the Disclosure Schedules, as of the date of this Agreement no customer or supplier with respect to any Assigned Contract has indicated in writing to Seller that it intends to stop or materially decrease the rate of business done with the Facility or desires to materially renegotiate its contract or current arrangement with the Facility.

Section 4.06 Title to, Condition and Sufficiency of Purchased Assets.

(a) Seller has good and marketable title to, a valid Leasehold Interest in or a valid right to use, all of the Purchased Assets. Seller is the sole record and beneficial owner of, or the sole lessor of, as applicable, the Purchased Assets. Except for the Real Property Leases, none of the Purchased Assets is the subject of any Contract providing for payment on deferred terms or any similar arrangement, or retention of title or similar arrangement. Except as set forth on Section 4.06(a) of the Disclosure Schedules, all of the Purchased Assets (including Leasehold Interests) are free and clear of Encumbrances. At the Closing, Seller will convey to Buyer good and marketable title to all properties, assets and leasehold estates, tangible and intangible, constituting the Purchased Assets or any part thereof, free and clear of all Encumbrances.

(b) The buildings, structures, furniture, fixtures, machinery, equipment, vehicles and other items of real and tangible personal property included in the Purchased Assets are structurally sound, are in good operating condition and repair, are free from material defect, and are adequate for the uses for which they are currently being used, and none of such buildings, structures, furniture, fixtures, machinery, equipment, vehicles and other items of real and tangible personal property is in need of (or in the course of receiving) maintenance, repairs or replacement, except for ordinary, routine maintenance and repairs that are not, individually or in the aggregate, material in nature or cost. All such buildings, structures, furniture, fixtures, machinery, equipment, vehicles and other items of real and tangible personal property have been maintained by Seller in the ordinary course of business in a manner consistent with any applicable maintenance schedule and industry practice.

(c) Except as set forth on Section 4.06(c) of the Disclosure Schedules, the Purchased Assets constitute all of the rights, property and assets owned, maintained, used or held for use by Seller or any of its Affiliates in connection with the manufacture and release of cell therapy products at the Facility. The Purchased Assets are sufficient for the continued manufacturing of Phase I clinical supply of cell therapy products pursuant to cGMP requirements (as provided for in the U.S. Food and Drug Administration's *Guidance for Industry, CGMP for Phase I Investigational Drugs*, July 2008) and the associated release testing at the Facility after the Closing in substantially the same manner as conducted by Seller on the Closing Date and during the 12-month period prior to the Closing Date. Except as required for the manufacture of Seller's cell therapy product pursuant to the MSA, no Intellectual Property of Seller is required to operate the Facility or manufacture and release cell therapy products at the Facility after the Closing in substantially the same manner as conducted by Seller on the Closing Date and during the 12-month period prior to the Closing Date. To Seller's knowledge, there are no facts or conditions affecting the Purchased Assets or the Facility which could, individually or in the aggregate, interfere in any material respect with the use, occupancy or operation of the Purchased Assets or the Facility as currently used, occupied or operated, or their adequacy for such use.

Section 4.07 Real Property; Leased Real Property. Section 4.07 of the Disclosure Schedules sets forth the address of the Leased Real Property and a true and complete list of all Real Property Leases for the Leased Real Property. Except as set forth in Section 4.07 of the Disclosure Schedules, Seller does not lease, sublease, license or occupy any real property in connection with its operation of the Facility. Except as set forth in Section 4.07 of the Disclosure Schedules, with respect to each of the Real Property Leases for the Leased Real Property: (i) Seller has a valid Leasehold Interest in the Leased Real Property; (ii) such Real Property Lease is legal, valid, binding and enforceable in accordance with its terms and in full force and effect and has not been modified; (iii) the transactions contemplated hereby do not require the consent of any other party to such Real Property Lease and will not result in a breach of or default under such Real Property Lease, or otherwise cause such Real Property Lease to cease to be legal, valid, binding, enforceable and in full force and effect on identical terms following the Closing; (iv) neither Seller nor, to the knowledge of Seller, any other party to such Real Property Lease is in breach or default in any material respect under such Real Property Lease and no event has occurred or circumstance exists which, with the delivery of notice, passage of time or both, would constitute such a breach or default or permit the termination, modification or acceleration of rent under such Real Property Lease; and (v) Seller has not collaterally assigned or granted any security interest in any such Real Property Lease or any interest therein. Seller has provided a true and complete copy of each Real Property Lease and all amendments thereto to Buyer.

Section 4.08 Inventory. All Inventory on hand that is not Seller Products consists of a quality and quantity usable or salable in the ordinary course of the business. All Inventory is owned by Seller free and clear of all Encumbrances, and no Inventory is held on a consignment basis. All Inventory is located at, or is in transit to, the Facility. The level of Inventory is sufficient for the manufacture and release of cell therapy products (in compliance with cGMP requirements) immediately following the Closing.

Section 4.09 Insurance. Section 4.09 of the Disclosure Schedules sets forth a true and complete list of all insurance policies maintained by Seller with respect to the Purchased Assets or the Assumed Liabilities indicating with respect to each such policy or fund, the type of insurance, whether the policy is an occurrence or a claims made policy, policy number, annual premium, remaining term, the identity of the insurer, coverage limits and applicable deductibles (collectively, the "Insurance Policies"). The Insurance Policies are in full force and effect and Seller is not in default of any provision thereof nor has it received notice of cancellation, termination or nonrenewal thereof or of any material increase in the premiums payable thereunder. The Insurance Policies are sufficient for compliance with all applicable Laws and Contracts to which Seller is a party or by which any of the Purchased Assets or Assumed Liabilities is bound or affected. Prior to the date of this Agreement, Seller has made available to Buyer true and complete copies of the Insurance Policies. Seller has one or more "business interruption" insurance policies in customary form and amount covering the Facility and the Purchased Assets, and the proceeds of such policies are assignable to Buyer at Closing to the extent required by Section 6.13. All of such policies are now and will be until the Closing in full force and effect on an occurrence basis with no premium arrearages. There is not outstanding any requirement or recommendation by any insurance company that issued any such policy or by any board of fire underwriters or other similar body exercising similar functions or by any Governmental Authority exercising similar functions which requires or recommends any repairs or other work to be done or with respect to the Facility. Seller has given to its insurer in a timely manner all notices required to be given under its insurance policies with respect to all claims and actions covered by insurance, and no insurer has denied coverage of any such claims or actions or reserved its rights in respect of or rejected any with such claims. Seller has not as of the date hereof (i) received any notice or other communication from any such insurance company canceling or materially amending any of said insurance policies, and no such cancellation or amendment is threatened, or (ii) failed to give any required notice or present any claim which is still outstanding under any of said policies.

Section 4.10 Legal Proceedings; Governmental Orders.

(a) Except as set forth in Section 4.10(a) of the Disclosure Schedules, there is no prior settlement or conciliation agreement, and no Action or Governmental Order pending or, to Seller's knowledge, threatened against or by Seller (i) relating to or affecting the Purchased Assets, the Facility, any current or former employee (in its capacity as such) or the Assumed Liabilities, or (ii) that would reasonably be expected to challenge or seek to prevent, enjoin or otherwise delay the transactions contemplated by this Agreement. To the Seller's knowledge, no event has occurred that, with or without notice or lapse of time or both, would reasonably be expected to give rise to, or serve as a basis for, any such Action or Governmental Order. Except as set forth in Section 4.10(a) of the Disclosure Schedules, since January 1, 2013, neither Seller nor the Purchased Assets has been subject to any formal or informal (for which Seller has received notice) Action of the OIG, CMS, the Justice Department, the United States General Accounting Office, the Texas Department of Health, the Texas Medicaid program or any similar Governmental Authority.

(b) Except as set forth in Section 4.10(a) of the Disclosure Schedules, Seller has made available to Buyer true and complete copies of (i) all pleadings and (ii) all material correspondence and other material documents relating to each item set forth in Schedule 4.10(a).

(c) Seller is not a party to any Action or to any settlement or conciliation agreement with respect to the compliance of the Facility or any of the Purchased Assets with the Americans with Disabilities Act, as amended, or Section 504 of the Rehabilitation Act of 1973.

(d) Seller has not engaged in any transaction that would reasonably be expected to subject Seller (or any successor-in-interest) to any avoidance action with respect to the Purchased Assets. Without limiting the generality of the foregoing, Seller has not, with respect to the Purchased Assets, (i) received any material payments from its account debtors outside the ordinary and usual course, (ii) acquired or sold any asset other than for reasonably equivalent value or (iii) conducted any business with any debtor-in-possession or bankrupt estate other than in the ordinary and usual course.

Section 4.11 Compliance with Laws; Permits.

(a) Except as set forth in Section 4.11(a) of the Disclosure Schedules, Seller is, and has been, in material compliance with all Laws applicable to the ownership or use of the Purchased Assets, the operation of the Facility and the regulations thereunder. Seller has not received any notice or other communication (whether written or oral) from any Governmental Authority or any other Person regarding any actual or possible violation of or failure to comply with any applicable Law or Governmental Order with respect to the operation of the Facility and use of the Purchased Assets.

(b) Section 4.11(b) of the Disclosure Schedules lists all current Permits issued to Seller which are related to the ownership or use of the Purchased Assets, including the names of the Permits and their respective dates of issuance and expiration. Except as set forth in Section 4.11(b) of the Disclosure Schedules, all Permits required for the ownership or use of the

Purchased Assets have been obtained by Seller and are valid and in full force and effect. Seller has provided or made available to Buyer a true and complete copy of each Permit and all amendments thereto. There is no pending or, to Seller's knowledge, threatened Action by or before any Governmental Authority to revoke, cancel, rescind, suspend, restrict, modify, or refuse to renew any Permit or Approval owned or held by Seller related to the ownership or use of the Purchased Assets, and all such Permits and Approvals are now, and as of the Closing shall be, unrestricted, in good standing, in full force and effect and not subject to meritorious challenge. To the Seller's knowledge, no event has occurred and no facts exist with respect to any Permit or Approval owned or held by Seller that allows, or after notice or the lapse of time or both, would allow the suspension, revocation, lapse or termination of any such Permit set forth in Section 4.11(b) of the Disclosure Schedules or Approval, or would result in any other impairment in the rights of any holder thereof. Seller has not received any written notice or communication from any Governmental Authority regarding any violation of any Permit or Approval owned or held by Seller in connection with the ownership or use of the Purchased Assets (other than any surveys or deficiency reports for which Seller has submitted a plan of correction that has been accepted or Approved by the applicable Governmental Authority). Seller has delivered to Buyer accurate and complete copies of all survey reports, deficiency notices, plans of correction, and related correspondence received by Seller since January 1, 2016 in connection with the Permits and Approvals owned or held by Seller that relate to operation of the Facility or the ownership or use of the Purchased Assets.

(c) Seller and its Affiliates have established and maintain disclosure controls and procedures (as defined in Rule 13a-15 under the Securities Exchange Act of 1934 (the "1934 Act")). Such disclosure controls and procedures are designed to ensure that material information relating to the Seller and its Affiliates is made known to the Seller's principal executive officer and its principal financial officer by others within those entities, particularly during the periods in which the periodic reports required under the 1934 Act are being prepared. Such disclosure controls and procedures are effective in alerting in a timely manner the Seller's principal executive officer and principal financial officer to material information required to be included in the Seller's periodic and current reports required under the 1934 Act.

(d) Seller and its Affiliates have established and maintain a system of internal controls over financial reporting (as defined in Rule 13a-15 under the 1934 Act). Such internal controls are sufficient to provide reasonable assurance regarding the reliability of the Seller's financial reporting and the preparation of the Seller's consolidated financial statements for external purposes in accordance with GAAP. The Seller has disclosed, based on its most recent evaluation of internal controls prior to the date of this Agreement, to the Seller's auditors and audit committee (i) any deficiencies, significant deficiencies and material weaknesses in the design or operation of internal controls that are reasonably likely to adversely affect the Seller's ability to record, process, summarize and report financial information and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the internal controls of the Seller and its Affiliates.

Section 4.12 Environmental Matters. Except as set forth in Section 4.12 of the Disclosure Schedules: (a) Seller is, and has at all times been, in compliance with all Environmental Laws affecting or applicable to the Purchased Assets and the Leased Real Property; (b) Seller has not received any Environmental Notice or Environmental Claim nor to Seller's knowledge is there any basis for any Environmental Claim against Seller; (c) to Seller's knowledge, there is no existing contamination by, and there has not been any Release of, any Hazardous Materials on, at, under or around the Leased Real Property resulting from or relating in any way to the ownership or operation of the Purchased Assets or Facility by Seller; (d) all Hazardous Materials generated by or in connection with the ownership and operation of the Purchased Assets and Facility by Seller are and have been handled and disposed of in compliance in all material respects with all applicable Environmental Laws; and (e) Seller has obtained and is and has been in compliance with all Environmental Permits (each of which is disclosed in Section 4.12 of the Disclosure Schedules) necessary for the operation of the Facility as currently conducted or the ownership, lease, operation or use of the Purchased Assets and the Leased Real Property. Seller has made available to Buyer true and complete copies of all environmental studies in the possession or control of Seller, or to which Seller has access, relating to the Purchased Assets or the Leased Real Property. To Seller's knowledge, it has no liability under any Environmental Law with respect to any of the Purchased Assets or the Leased Real Property, nor is to Seller's knowledge is Seller responsible for any liability of any other Person under any Environmental Law with respect to any of the Purchased Assets, the Facility or the Leased Real Property. To Seller's knowledge, neither PCBs, lead paint, nor asbestos-containing materials are present on or at the Facility or the Leased Real Property.

Section 4.13 [DELETED]

Section 4.14 Employment Matters.

(a) Section 4.14(a) of the Disclosure Schedules sets forth a true and complete list of all employees of Seller located at the Facility and made available to Buyer for hire (each, a "Seller Employee" and, collectively, the "Seller Employees"), and sets forth for each such individual the following: (a) such individual's name; (b) such individual's legal status for employment purposes; (c) the entity that employs or has engaged such individual; (d) such individual's title or position (including whether full-time or part-time); (e) such individual's hire or retention date; (f) such individual's current annual base compensation rate or

contract fee; (g) such individual's accrued paid time off and commission, bonus or other incentive-based compensation; and (h) a description of the Benefit Plans in which such individual is enrolled as of the date of this Agreement and the fringe benefits provided to such individual as of the date of this Agreement. All compensation, including wages, commissions, bonuses, fees and other compensation, payable to all employees, independent contractors, contingent workers and consultants of Seller with respect to the Purchased Assets for services performed on or prior to the Closing Date have been paid in full, and there are no outstanding agreements, understandings or commitments of Seller or Seller's Affiliates, whether written or oral, with respect to any such compensation, commissions, bonuses, fees or other terms of employment or engagement.

(b) With respect to each Seller Employee, Seller is in compliance in all material respects with all applicable Laws respecting labor, employment, fair employment practices, terms and conditions of employment, workers' compensation, occupational safety and health requirements, plant closings, wages and hours, withholding of Taxes, employment discrimination, disability rights or benefits, retirement benefits, joint employment, paid sick time, protected concerted activity, employee privacy, records retention, drug and alcohol testing, background checks, equal opportunity, labor relations, employee leave issues, immigration matters, unemployment insurance and any similar or related matters. All such individuals have at all times been accurately classified by Seller as an employee or non-employee, including for purposes of participation in any labor and/or employment contract, agreement or arrangement or any Benefit Plan. No individual listed in Section 4.14(a) of the Disclosure Schedules is represented by a labor union.

(c) (i) There is no pending or, to Seller's knowledge, threatened employee strike, work stoppage or labor dispute concerning Seller or the Facility, and none has occurred; (ii) to Seller's knowledge, no union representation question exists respecting any employees, no demand has been made for recognition by a labor organization by or with respect to any employees, no union organizing activities by or with respect to any employees are taking place, and none of the employees is represented by any labor union or organization; (iii) no collective bargaining agreement exists or is currently being negotiated by Seller; (iv) there is no unfair practice claim against Seller before the National Labor Relations Board pending or, to Seller's knowledge, threatened against or involving Seller or the Facility; (v) [deleted]; (vi) Seller is not engaged in any unfair labor practices; and (vii) Buyer will not be subject to any claim or liability for severance pay as a result of the consummation of the transactions contemplated herein through the Closing.

(d) Seller is in compliance with the terms and provisions of the Immigration Act. For employees for whom compliance with the Immigration Act is required, Seller has obtained and retained a complete and true copy of each such employee's Form I-9 (Employment Eligibility Verification Form) and all other records or documents required to be prepared, procured or retained pursuant to the Immigration Act. Seller has not been cited, fined, served with a Notice of Intent to Fine or with a Cease and Desist Order (as such terms are defined in the Immigration Act), nor has any Action been initiated or threatened against Seller, by reason of any actual or alleged failure to comply with the Immigration Act.

(e) Except as set forth in this Agreement, Seller does not presently intend to take any action that would result in an Employment Loss by any of the Seller Employees between the Effective Date and the Closing Date. "Employment Loss" for this purpose shall mean (a) an employment termination, other than a discharge for cause, voluntary departure, or retirement, (b) a layoff exceeding six (6) months or (c) a reduction in hours of work of more than fifty percent (50%). Five (5) Business Days prior to Closing, Seller shall deliver to Buyer an update to Section 4.14(e) of the Disclosure Schedules which will provide the above information for all Seller Employees who experienced an Employment Loss within ninety (90) days prior to the date such Schedule is delivered.

(f) Seller has complied with all applicable Laws relating to employee health and safety with respect to the Facility and the Purchased Assets, and Seller has not received any written notice from any Governmental Authority that past or present conditions of the Facility or the Purchased Assets (or the operation thereof) violate any applicable legal requirements or otherwise will be made the basis of any Action based on OSHA violations or otherwise related to employee health and safety.

(g) Except as set forth on Section 4.14(a) of the Disclosure Schedules, all Seller Employees who have been involved in the development of any Seller Intellectual Property have executed and delivered invention assignment and confidentiality agreements, in a form sufficient to vest all right, title and interest in Seller in and to all Seller Intellectual Property created during the course of work for Seller or at the Facility, and all current employees, contractors and consultants of Seller who have access to confidential information or trade secrets authored, created or developed in the conduct of the Facility have executed nondisclosure agreements containing reasonable restrictions on the use and disclosure of material nonpublic information pertaining to the Facility and Purchased Assets. Seller has taken reasonable steps to protect the secrecy and confidentiality of all material nonpublic information pertaining to the Facility and Purchased Assets.

Section 4.15 Taxes. Except as set forth in Section 4.15 of the Disclosure Schedules: (a) all Tax Returns with respect to the Purchased Assets required to be filed by Seller for any Pre-Closing Tax Period have been, or will be, timely filed, and such

Tax Returns are, or will be, true and complete in all respects; (b) all Taxes due and owing by Seller with respect to the Purchased Assets (whether or not shown on any Tax Return) have been, or will be, timely paid; (c) no extensions or waivers of statutes of limitations have been given or requested with respect to any Taxes of Seller with respect to the Purchased Assets; (d) all deficiencies asserted, or assessments made, against Seller as a result of any examinations by any taxing authority with respect to the Purchased Assets have been fully paid; (e) Seller is not a party to any Action by any taxing authority and, to the Seller's knowledge, no such Action is threatened by any taxing authority, with respect to the Purchased Assets; (f) there are no Encumbrances for Taxes upon any of the Purchased Assets nor, to the Seller's knowledge, is any taxing authority in the process of imposing any Encumbrances for Taxes on any of the Purchased Assets (other than for current Taxes not yet due and payable); and (g) Seller is not a party to, or a promoter of, a "reportable transaction" within the meaning of Section 6707A(c)(1) of the Code and Treasury Regulations Section 1.6011-4(b) with respect to the Purchased Assets. Seller is not a "foreign person" as that term is used in Treasury Regulations Section 1.1445-2.

Section 4.16 Brokers. No broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the transactions contemplated by this Agreement or any Ancillary Document based upon arrangements made by or on behalf of Seller.

Section 4.17 Solvency; No Fraudulent Conveyance. Seller currently is, and immediately following the Closing Date, Seller will be, solvent for all purposes under federal bankruptcy and applicable state fraudulent transfer and fraudulent conveyance Laws, and the transactions contemplated hereby do not constitute fraudulent transfers or fraudulent conveyances under such Laws. For purposes hereof, the term "solvent" means that: (a) the fair, salable value of Seller's tangible assets is in excess of the total amount of its liabilities (including, for purposes of this definition, all liabilities, whether or not reflected on a balance sheet prepared in accordance with generally accepted accounting principles, and whether direct or indirect, fixed or contingent, secured or unsecured, and disputed or undisputed); (b) Seller is able to pay its debts or obligations in the ordinary course as they mature; and (c) Seller has capital sufficient to carry on the operation of its business.

Section 4.18 No Other Representations or Warranties. Except for the representations and warranties set forth in this Agreement and any certificates delivered hereunder, Buyer acknowledges that neither Seller, nor any of its Affiliates or any Person acting on behalf of Seller makes or has made any other express or any implied representation or warranty to Buyer as to the accuracy or completeness of any information regarding the Purchased Assets.

Section 4.19 Accreditation. Section 4.19 of the Disclosure Schedules sets forth an accurate and complete list of all accreditations and certifications held by Seller in connection with its operation of the Facility and its ownership and use of the Purchased Assets. All such accreditations/certifications are and shall be effective, unrestricted and in good standing as of the date hereof and as of the Closing Date. No event has occurred or other fact exists with respect to such accreditations/certifications that allows, or after notice or the lapse of time or both, would allow, revocation or termination of any such accreditations or certifications, or would result in any other impairment in the rights of any holder thereof. There is no pending or, to Seller's knowledge, threatened Action by any accrediting body to revoke, cancel, rescind, suspend, restrict, modify, or non-renew any such accreditation or certifications, and no such Actions are pending, threatened or imminent.

Section 4.20 Regulatory Compliance.

(a) None of Seller or any of its officers, directors or employees, have been convicted of, charged with or, to Seller's knowledge, investigated for, or have engaged in conduct that would constitute, a Medicare or other Federal Health Care Program (as defined in 42 U.S.C. § 1320a-7(b)(f)) related offense or convicted of, charged with or, to Seller's knowledge, investigated for, or engaged in conduct that would constitute a violation of any Law related to fraud, theft, embezzlement, breach of fiduciary duty, kickbacks, bribes, other financial misconduct, obstruction of an investigation or controlled substances. None of Seller or any officer, director, employee or independent contractor of Seller (whether an individual or entity), has been excluded from participating in any Government Program, subject to sanction pursuant to 42 U.S.C. § 1320a-7a or § 1320a-8 or been convicted of a crime described at 42 U.S.C. § 1320a-7b, nor, to Seller's knowledge, are any such exclusions, sanctions or charges threatened or pending.

(b) None of Seller or any of its officers, directors or employees, are or have been debarred, excluded, or suspended under 21 U.S.C. §335a(a) or (b), nor has Seller or any of its officers, directors or employees been convicted of a felony under federal law for conduct relating to the development or approval of any drug product, new drug application (NDA), abbreviated new drug application (ANDA), Product License Application (PLA), Establishment License Application (ELA), or Biologics License Application (BLA). Seller further represents that no debarred, suspended, excluded or convicted entity perform or render, any services pursuant to this Agreement.

(c) Seller, the Facility, and the Purchased Assets have been and are presently in compliance with Title XVIII of the Social Security Act, 42 U.S.C. §§ 1395-1395hhh (the Medicare statute), including specifically, the Ethics in Patient Referrals Act, as amended, or "Stark Law," 42 U.S.C. § 1395nn; Title XIX of the Social Security Act, 42 U.S.C. §§ 1396-1396v (the Medicaid statute); the Federal Health Care Program Anti-Kickback Statute, 42 U.S.C. § 1320a-7b(b); the False Claims Act, as amended, 31 U.S.C. §§ 3729-3733; the Program Fraud Civil Remedies Act, 31 U.S.C. §§ 3801-3812; the Anti-Kickback Act of 1986, 41 U.S.C. §§ 51-58; the Civil Monetary Penalties Law, 42 U.S.C. §§ 1320a-7a and 1320a-7b; the Exclusion Laws, 42 U.S.C. § 1320a-7; HIPAA and all applicable implementing regulations, rules, ordinances and Orders; and any similar state and local statutes, regulations, rules, ordinances and Orders, and any corresponding State of Texas statutes and applicable implementing regulations that address the subject matter of the foregoing.

(d) Seller has not received any communication from a Governmental Authority, commercial payor or patient that alleges Seller, the Facility or the Purchased Assets are not in compliance with any Law, other than statements of deficiencies from a Governmental Authority received in the ordinary course of business, a copy of each of which has been provided to Buyer. Seller has timely filed all material reports, data, and other information required to be filed with such commissions, boards, bureaus, and agencies regarding Seller and the Purchased Assets.

(e) There are no open U.S. Food and Drug Administration regulatory issues or concerns related to safety or Chemistry Manufacturing and Controls for any products manufactured in the Facility.

(f) With respect to the Facility and Purchased Assets, Seller is in substantial compliance with, and at all times has substantially complied with, all U.S. export control laws and regulations, including the U.S. Export Administration, Regulations, the Foreign Assets Control Regulations and the International Traffic in Arms Regulations.

Section 4.21 Personal Property. Section 1.01(e) of the Disclosure Schedules includes an accurate and complete list of each item of personal property (and personal property which, in the aggregate, constitute a System as defined in the Disclosure Schedules) having a value (or, as to a System, an aggregate value) in excess of $250 as of the date hereof. All such personal property is in good operating condition and repair, except for ordinary wear and tear. Except as disclosed on Section 4.21 of the Disclosure Schedules, Seller has not sold or otherwise disposed of any item or items of plant, property or equipment with respect to the Purchased Assets or the Facility (other than Inventory items sold, used or disposed of in the ordinary course of business) since June 1, 2019. No Person other than Seller owns any of the foregoing personal property, except for items leased by Seller or improvements to items leased by Seller as identified on Schedule 4.06 of the Disclosure Schedules.

Section 4.22 Ethics Matters; No Financial Interest. Seller and each of the Seller Knowledgeable Persons have read and understand the following: MD Anderson's Ethics Policy, Conflicts of Interest Policy and Standards of Conduct Guide available at http://www.mdanderson.org/about-us/doing-business/vendors-and-suppliers/index.html and at https://www.mdanderson.org/about-md-anderson/business-legal/conflict-of-interest.html, and applicable state ethics laws and rules at http://www.utsystem.edu/offices/general-counsel/ethics. Neither Seller, nor any Seller Knowledgeable Person (while employed, engaged by and/or serving as an officer or director of Seller) will assist or cause Buyer's employees to violate its Conflicts of Interest Policy, Standards of Conduct Guide, or applicable state ethics laws or rules. Seller represents and warrants that no member of the UT Board of Regents has a direct or indirect financial interest in the transaction that is the subject of this Agreement. Further, Seller agrees to comply with Section 2252.908, Texas Government Code (Disclosure of Interested Parties Statute), and 1 TAC Sections 46.1 through 46.5 (Disclosure of Interested Parties Regulations), as implemented by the Texas Ethics Commission ("TEC"), including, among other things, providing the TEC and Buyer with information required on the form promulgated by TEC. Seller may learn more about these disclosure requirements, including the use of TEC's electronic filing system, by reviewing the information on TEC's website at https://www.ethics.state.tx.us/whatsnew/_Form1295.html.

Section 4.23 Texas Family Code Child Support Certification. Pursuant to Section 231.006, Texas Family Code, Seller represents and warrants that it is not ineligible to receive the award of or payments under this Agreement, and acknowledges and agrees that this Agreement may be terminated and payment withheld if this certification is inaccurate.

Section 4.24 Certification Regarding Boycotting Israel. Pursuant to Chapter 2271, *Texas Government Code*, Seller represents and warrants that it (1) does not currently boycott Israel; and (2) will not boycott Israel during the term of this Agreement. Seller acknowledges that this Agreement may be terminated and payment withheld if this certification is inaccurate.

Section 4.25 Certification Regarding Business with Certain Countries and Organizations. Pursuant to Subchapter F, Chapter 2252, *Texas Government Code*, Seller represents and warrants that it is not engaged in business with Iran, Sudan, or a foreign terrorist organization. Seller acknowledges that this Agreement may be terminated and payment withheld if this certification is inaccurate.

Section 4.26 Access by Individuals with Disabilities. Seller represents and warrants that the electronic and information resources and all associated information, documentation and support included in the Purchased Assets (the "EIR") comply with applicable requirements in 1 TAC Chapter 213 and 1 TAC Section 206.70 (ref. Subchapter M, Chapter 2054, Texas Government Code). Seller represents and warrants it will, at no cost to Buyer or any of its Affiliates, either (1) perform all necessary remediation to make the EIRs satisfy this EIR accessibility representation and warranty; or (2) replace the EIRs with new EIRs that satisfy this EIR accessibility representation and warranty.

Section 4.27 TPIA. The requirements of Subchapter J, Chapter 552, Government Code, may apply to this Agreement and Seller represents, warrants and agrees that this Agreement can be terminated if Seller knowingly or intentionally fails to comply with a requirement of Subchapter J, Chapter 552, Government Code.

ARTICLE V
REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer represents and warrants to the Seller that the statements contained in this Article V are true and correct as of the Closing.

Section 5.01 Organization and Authority; Enforceability.

(a) The University of Texas was established by the Texas Constitution in 1876 and currently consists of eight academic universities and six health institutions, including Buyer. The UT Board of Regents is the governing body for the University of Texas System.

(b) Buyer has the full power and authority to execute and deliver this Agreement and the Ancillary Agreements and to perform its obligations under this Agreement and the Ancillary Agreements to which Buyer will become a party. The execution and delivery by Buyer of this Agreement and each Ancillary Agreement to be executed and delivered by it, the performance by Buyer of its obligations hereunder and thereunder and the consummation by Buyer of the transactions contemplated hereby and thereby have been duly and validly authorized by all requisite action by the UT Board of Regents and no other proceedings on the part of Buyer are required to authorize this Agreement or any of the documents or instruments required hereby or for Buyer to consummate the transactions contemplated hereby or thereby. This Agreement is, and the Ancillary Agreements to which Buyer is a party will be, when executed and delivered by the parties thereto, the valid and binding obligation of Buyer, enforceable against Buyer in accordance with their respective terms.

Section 5.02 No Conflicts; Consents. The execution, delivery and performance by Buyer of this Agreement and the Ancillary Documents to which it is a party, and the consummation of the transactions contemplated hereby and thereby, do not and will not conflict with or result in a violation or breach of any provision of any Law or Governmental Order applicable to Buyer. Other than the approval of the UT Board of Regents, no consent, approval, Permit, Governmental Order, declaration or filing with, or notice to, any Governmental Authority is required by or with respect to Buyer in connection with the execution and delivery of this Agreement and the Ancillary Documents and the consummation of the transactions contemplated hereby and thereby.

Section 5.03 Legal Proceedings. There are no Actions pending or, to Buyer's knowledge, threatened against Buyer or any Affiliate of Buyer that challenge or seek to prevent, enjoin or otherwise delay the transactions contemplated by this Agreement. To Buyer's knowledge, no event has occurred that, with or without notice or lapse of time or both, would reasonably be expected to give rise to, or serve as a basis for, any such Action.

Section 5.04 Brokers. No broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the transactions contemplated by this Agreement or any Ancillary Document based upon arrangements made by or on behalf of Buyer.

Section 5.05 No Other Representations or Warranties. Except for the representations and warranties set forth in this Agreement and any certificates delivered hereunder, Seller acknowledges that none of Buyer, any of its Affiliates or any Person acting on behalf of any of the foregoing makes or has made any other express or any implied representation or warranty to Seller as to the accuracy or completeness of any information regarding Buyer.

Section 5.06 Financial Ability to Perform. Buyer has sufficient cash on hand or other sources of immediately available funds to enable it to make payment of the Purchase Price and consummate the transactions contemplated by this Agreement.

ARTICLE VI
COVENANTS

Section 6.01 Employees and Employee Benefits.

(a) Seller shall terminate the employment of all Seller Employees that accept an offer of Buyer pursuant to Section 6.01(b) effective as of the Closing Date. Seller shall be liable for all liabilities arising as a result of, or related to, the employment of Seller Employees on or prior to the Closing Date, and, except with respect to the Transferred Employees, after the Closing Date, including liabilities related to the termination of the employment of the Seller Employees by Seller effective as of the Closing Date, as well as any amounts to which any Seller Employee becomes entitled under any Benefit Plan as a result of or in connection with the transactions contemplated by this Agreement or the termination of employment of such Seller Employee by Seller. Without limiting the generality of the foregoing sentence, Seller shall be solely responsible for Seller's employment of the Seller Employees or the termination of such employment, including with respect to any required compliance with the Worker Adjustment, Retraining and Notification Act of 1988 ("WARN Act"), any applicable state Laws requiring the giving of notice of terminations, lay-offs, site closings or other comparable events, and any continuation healthcare coverage mandated by applicable Law.

(b) Effective as of the Closing, but contingent thereupon, Buyer shall offer employment to each of the Seller Employees on an "at will" basis, contingent upon satisfactory completion of Buyer's employment eligibility requirements and upon such employment terms and conditions as may be determined by Buyer. Each Seller Employee that is offered and accepts employment by Buyer and commences employment with Buyer on the Closing Date is referred to herein as a "Transferred Employee." Seller shall in connection therewith terminate any and all oral (express or implied) or written (i) employment agreement(s), (ii) consulting agreement(s), and (iii) independent contractor agreement with any Transferred Employee.

(c) Seller shall be and remain solely responsible, and Buyer shall have no obligations whatsoever, for the following: (i) any compensation or other amounts payable to any current or former employee, officer, director, independent contractor, contingent worker or consultant of Seller (or beneficiary or dependent thereof), including hourly pay, commission, bonus, salary, accrued vacation and other paid time off, fringe, pension or profit sharing benefits or severance pay for or with respect to any period relating to the service with Seller at any time on or prior to the Closing Date; (ii) all claims for medical, dental, life insurance, health accident or disability benefits (including under any Benefit Plan) brought by or in respect of current or former employees, officers, directors, independent contractors, contingent workers or consultants of Seller or the spouses, dependents or beneficiaries thereof, which claims relate to events occurring or otherwise accrued on or prior to the Closing Date (or for events occurring after the Closing Date to the extent required by the terms of the Benefit Plan); and (iii) all worker's compensation claims of any current or former employees, officers, directors, independent contractors, contingent workers or consultants of Seller which relate to events occurring on or prior to the Closing Date. Seller shall pay, or cause to be paid, all amounts described in this Section 6.01(c) to the Seller Employees set forth on Section 6.01 of the Disclosure Schedules as and when due.

(d) This Section 6.01 shall be binding upon and inure solely to the benefit of each of the parties to this Agreement, and nothing in this Section 6.01, express or implied, shall confer upon any other Person any rights or remedies of any nature whatsoever under or by reason of this Section 6.01. Nothing in this Section 6.01, express or implied, shall be construed to establish, amend or modify any benefit plan, program, agreement or arrangement, or create any right in any Transferred Employee or any other Person to any employment with Buyer or any of its Affiliates or compensation or benefits of any nature or kind whatsoever. The representations, warranties, covenants and agreements contained herein are for the sole benefit of the parties hereto, and Seller Employees and Transferred Employees are not intended to be and shall not be construed as beneficiaries hereof.

(e) With respect to any current or former employee of Seller (other than the Transferred Employees) and any eligible spouse or dependent thereof, Seller shall retain and satisfy the obligation for providing notices and continuation coverage under COBRA. Pursuant to Article VII, Seller shall indemnify and hold Buyer and its group health plan(s) harmless against direct out-of-pocket expenses incurred by Buyer in the event Buyer and its group health plan(s) shall be liable for (i) any COBRA continuation coverage for any Person described in this Section 6.01(e) and/or (ii) for any claim or liability with respect to COBRA continuation coverage relating to any such Person.

Section 6.02 Conduct Prior to Closing. From the date hereof through the Closing Date, Seller will use, conduct and operate the Purchased Assets and Facility in the ordinary course and consistent with the past practice of Seller and shall not take any action inconsistent therewith, except as otherwise expressly permitted by this Agreement or consented to in advance in writing by Buyer. From the date hereof to the Closing Date, Seller shall give prompt written notice to Buyer of (i) the occurrence, or failure to occur, of any event that causes any representation or warranty of Seller contained in this Agreement to be untrue in any material respect and (ii) any failure of Seller to comply with or satisfy, in any material respect, any covenant, condition or agreement

to be complied with or satisfied by it under this Agreement. Such notice shall provide a reasonably detailed description of the relevant circumstances and shall include the amount that Seller believes, based on facts known to Seller, as the case may be, would be payable by Seller pursuant to the indemnification provisions hereof. Without limiting the generality of the foregoing, Seller shall:

(a) comply with the Material Contracts;

(b) maintain the Purchased Assets in good working order and repair (ordinary wear and tear excepted), consistent with past practice, and pay all Taxes related to the Purchased Assets as and when they become due and payable;

(c) order, purchase and replenish inventory in the ordinary course of business, consistent with past practice;

(d) not terminate, promote, demote or materially change the compensation or other consideration or benefits of any Seller Employee;

(e) take all actions that will be necessary and appropriate to vest in and render to Buyer at Closing good and marketable title to all of the Purchased Assets free and clear of all Encumbrances;

(f) permit and provide reasonable access to Buyer to make offers of post-Closing employment to Seller Employees, and to establish relationships with Persons having business relations with Seller;

(g) promptly furnish to Buyer written notice of any environmental condition or of any Actions or notices described in Section 4.12 arising or received after the Effective Date; and promptly notify Buyer of any Material Adverse Effect;

(h) maintain in effect and good standing all Permits relating to the Purchased Assets and Assumed Liabilities;

(i) comply with all Laws applicable to the Purchased Assets and the Facility;

(j) maintain the levels and quality of Inventory existing on the date hereof;

(k) not sell, assign or otherwise transfer or dispose of any Purchased Assets, except for sales of Inventory in the ordinary course of business;

(l) not (i) by action or inaction, abandon, terminate, cancel, forfeit, waive or release any material rights of Seller, in whole or in part, with respect to the Purchased Assets or encumber any of the Purchased Assets; (ii) effect any merger, business combination, reorganization or similar transaction or take any other action which reasonably could be expected to affect adversely Seller's ability to perform in accordance with this Agreement; or (iii) settle any dispute or threatened dispute with any Governmental Authority regarding, arising from or relating to the Facility or any of the Purchased Assets;

(m) not enter into any other Contract except for Contracts entered into in the ordinary course of business that satisfy each of the following requirements: (i) the Contract may be assigned to Buyer or any of its Affiliates without the consent of any party to such Contract; (ii) following Closing, Buyer or its Affiliates may terminate the Contract without cause on no more than ninety (90) days' notice and without payment of any penalty, premium or termination payment; and (iii) the Contract does not involve the payment or receipt of more than $25,000 annually;

(n) not (i) amend any Assigned Contract, other than renewals or extensions of such Assigned Contracts in the ordinary course of business on terms and conditions that satisfy the requirements and limitations described in clause (m) above; or (ii) terminate any Assigned Contract;

(o) not create, assume or permit to exist any new Encumbrance upon any of the Purchased Assets;

(p) not take any other action outside the ordinary course of business; and

(q) maintain in full force and effect all Insurance Policies.

Section 6.03 Confidentiality. From and after the Closing, each party shall, and shall cause its Affiliates to, hold, and shall use commercially reasonable efforts to cause its Representatives to hold in confidence any and all information, whether written or oral, concerning the Purchased Assets and the operation of the Facility, except to the extent that a party can establish that such information: (a) is generally available to and known by the public through no fault of the other party or any of such other

party's Affiliates or Representatives; or (b) is lawfully acquired by the disclosing party's or any of the disclosing party's Affiliates or Representatives from and after the Closing from sources which are not prohibited from disclosing such information by a legal, contractual or fiduciary obligation. If a party or any of its Affiliates or Representatives are compelled to disclose any information by judicial or administrative process or by other requirements of Law, the disclosing party shall promptly notify the non-disclosing party in writing and shall disclose only that portion of such information that the disclosing party is advised by its counsel in writing is legally required to be disclosed, and the disclosing party shall cooperate in any efforts by the non-disclosing party to obtain an appropriate protective order or other reasonable assurance that confidential treatment will be accorded such information.

Section 6.04 Non-Solicitation.

(a) [DELETED]

(b) For a period of two (2) years commencing on the Closing Date (the "Restricted Period"), Seller shall not, and shall not permit any of its Affiliates to, directly or indirectly, hire or solicit any person who was employed or otherwise engaged by Buyer at any time during the one-year period prior to the Closing or during the Restrictive Period, or encourage any such employee to leave employment with Buyer.

(c) During the Restricted Period, Buyer shall not, and shall not permit its Affiliates to, directly or indirectly, hire or solicit any person who was employed or otherwise engaged by Seller at the Facility at any time during the one-year period prior to the Closing or during the Restrictive Period, or encourage any such employee to leave employment with Seller.

(d) Notwithstanding the foregoing restrictions of this Section 6.04, neither party shall be prohibited from soliciting or hiring by means of a general advertisement not directed at any particular individual. Examples of permitted activities hereunder include job postings on the internet or through job search portals, contacts through job fairs, conventions or conferences, or instances where an employee responds to any of the foregoing.

(e) Each party acknowledges that a breach or threatened breach of this Section 6.04 would give rise to irreparable harm to the other party, for which monetary damages would not be an adequate remedy, and each party hereby agrees that, in the event of a breach or a threatened breach by such party or any of its Affiliates of any such obligations, the non-breaching party shall, in addition to any and all other rights and remedies that may be available to it in respect of such breach, be entitled to seek equitable relief, including a temporary restraining order, an injunction, specific performance and any other relief that may be available from a court of competent jurisdiction (without any requirement to post bond or to prove actual damages in connection with the seeking to obtain any such injunctive or other equitable relief). Each party covenants and agrees that, subject to Section 9.13 hereof, it will not seek to challenge the enforceability of the covenants contained in this Section 6.04, nor will it assert as a defense to any Action seeking enforcement of the provisions contained in this Section 6.04 (including an Action seeking injunctive relief) that such provisions are not enforceable due to lack of sufficient consideration received by it.

(f) Each party acknowledges that the restrictions contained in this Section 6.04 are reasonable and necessary to protect the legitimate interests of the other party and constitute a material inducement to the other party to enter into this Agreement and consummate the transactions contemplated by this Agreement. In the event that any covenant contained in this Section 6.04 should ever be adjudicated to exceed the time, geographic, product or service or other limitations permitted by applicable Law in any jurisdiction, then, subject to Section 9.13 hereof, any court with jurisdiction afforded hereunder is expressly empowered to reform such covenant, and such covenant shall be deemed reformed, in such jurisdiction to the maximum time, geographic, product or service or other limitations permitted by applicable Law. The covenants contained in this Section 6.04 and each provision hereof are severable and distinct covenants and provisions. The invalidity or unenforceability of any such covenant or provision as written shall not invalidate or render unenforceable the remaining covenants or provisions hereof, and any such invalidity or unenforceability in any jurisdiction shall not invalidate or render unenforceable such covenant or provision in any other jurisdiction.

Section 6.05 Books and Records. Buyer and Seller acknowledge that, subsequent to the Closing, Buyer and Seller may need access to information, or documents in the control or possession of the other. Accordingly, Buyer agrees that, at the sole cost and expense of Seller, it will make available to Seller and its agents, independent auditors and/or Governmental Authorities such documents and information as may be available relating to the Purchased Assets in respect of periods prior to the Closing and will permit Seller to make copies of such documents and information. Seller agrees that, at the sole cost and expense of Buyer, Seller will make available to Buyer and its agents, independent auditors and/or Governmental Authorities such documents and information as may be in the possession of Seller or its Affiliates relating to the Purchased Assets in respect of periods prior to the Closing and will permit Buyer to make copies of such documents and information.

Section 6.06 Public Announcements. Unless otherwise required by applicable Law or the rules and regulations of any national stock exchange on which the securities of such party are listed, no party to this Agreement shall make any public announcements in respect of this Agreement or the transactions contemplated hereby or otherwise communicate with any news media without the prior written consent of the other party, provided that Buyer strictly adheres to all statutes, court decisions and the opinions of the Texas Attorney General with respect to disclosure of public information under the Texas Public Information Act, Chapter 552, Texas Government Code, and that the press statement set forth on Exhibit I is otherwise hereby preapproved for dissemination.

Section 6.07 Bulk Sales Laws. The parties hereby waive compliance with the provisions of any bulk sales, bulk transfer or similar Laws of any jurisdiction that may otherwise be applicable with respect to the sale of any or all of the Purchased Assets to Buyer, it being understood that any Liabilities arising out of the failure of Seller to comply with the requirements and provisions of any bulk sales, bulk transfer or similar Laws of any jurisdiction shall be treated as Excluded Liabilities.

Section 6.08 Tax Matters.

(a) Seller shall prepare or cause to be prepared and file or cause to be filed on a timely basis all Tax Returns relating to the Purchased Assets with respect any Pre-Closing Tax Period. Without the prior written consent of Buyer, Seller shall not change or consent to any change in the Tax treatment of any Purchased Asset except in compliance with Section 2.03, hereunder. Seller shall be responsible for all Taxes with respect to any Pre-Closing Tax Period and Pre-Closing Straddle Period. Seller shall pay Pre-Closing Period Taxes to any Governmental Authority.

(b) Other than with respect to Taxes that are subject to Section 2.05,] to determine the Taxes with respect to any period or taxable year beginning before and ending after the Closing ("Straddle Period") that are allocable to the portion of such Straddle Period ending on and including the Closing ("Pre-Closing Straddle Period"), Buyer and Seller shall use a "closing of the books" method with the Pre-Closing Straddle Period ending at the time of the Closing and the other beginning immediately after the Closing, provided that Taxes imposed on a periodic basis (including without limitation real property Taxes, personal property Taxes, and similar ad valorem Taxes imposed with respect to the Purchased Assets) shall be allocated on a daily basis.

(c) Buyer shall prepare or cause to be prepared and file (solely as may be applicable to Buyer) or cause to be filed all Tax Returns relating to the Purchased Assets with respect to all taxable periods ending after the Closing.

(d) Buyer is exempt from: (i) Texas sales and use tax pursuant to Section 151.309 of the Texas Tax Code, (ii) motor vehicle tax pursuant to Section 152.082 of the Texas Tax Code, and (iii) property taxes pursuant to Section 11.11 of the Texas Tax Code. Buyer and Seller shall jointly notify the Harris County Appraisal District ("HCAD") in writing within ten (10) days after Closing that the tangible Personal Property subject to tax in HCAD account numbered 2059030 (the "HCAD Account") have been transferred to Buyer, which is exempt from Texas property tax pursuant to Section 11.11 of the Texas Tax Code, as of the Closing Date. Seller shall be responsible for property taxes on the Purchased Assets imposed with respect to the period from January 1, 2020 through Closing, as prorated for 2020 in accordance with Section 26.11 of the Texas Tax Code. If the 2020 tax bills associated with the HCAD Account for the period prior to Closing are delivered to Buyer after Closing, Buyer will timely provide such bills to Seller to allow for timely payment thereof.

(e) Following the Closing, Seller shall cooperate with Buyer and shall make available to Buyer, as reasonably requested, in connection with or related to filing any Tax Return, amended return or claim for refund, determining a liability for Taxes or a right to a refund of Taxes or in conducting or responding to any audit or other proceeding in respect of Taxes, all information, records or documents relating to Tax liabilities or potential Tax liabilities with respect to the Purchased Assets for all periods, and shall preserve all information, records and documents (to the extent not a part of the Purchased Assets delivered by Seller at Closing) at least until the expiration of any applicable statute of limitations or extensions thereof. Such cooperation and information shall include providing copies of all relevant Tax Returns, together with accompanying schedules and related work papers, documents relating to rulings or other determinations by taxing authorities and records concerning the ownership and tax basis of property, which Seller may possess. Seller will retain all returns, schedules and work papers and all material records or other documents relating thereto, until the expiration of the statute of limitations (including extensions) of the taxable years to which such returns and other documents relate and, unless such returns and other documents are offered to Buyer, until the final determination of any payments which may be required in respect of such years under this Agreement. Each party further agrees, upon request of the other, to use commercially reasonable efforts to obtain any certificate or other document from any Governmental Authority or any other Person as may be necessary to mitigate, reduce or eliminate any Taxes that could be imposed on either party or the Purchased Assets (including, without limitation, with respect to the transactions contemplated hereby), including, without limitations, any document that may be required in connection with or related to filing by Seller of any Tax Return or amendment thereto with respect to the Purchased Assets. Any information obtained under this Section shall be kept

confidential, except as may be otherwise necessary in connection with the filing of returns or claims for refund or in conducting any audit or other proceeding.

Section 6.09 Further Assurances. Following the Closing, without further consideration, each of the parties hereto shall, and shall cause their respective Affiliates to, execute and deliver such additional documents, instruments, conveyances and assurances and take such further actions as may be reasonably requested by the other party to evidence or perfect Buyer's right, title and interest to the Purchased Assets and/or as may be reasonably required to carry out the provisions hereof and give effect to the transactions contemplated by this Agreement and the Ancillary Documents.

Section 6.10 Access to Premises; Information. Between the date of this Agreement and the Closing Date, to the extent permitted by Law, and upon reasonable prior notice and during normal business hours, Seller shall without charge allow Buyer and its authorized representatives and agents full and complete access to and the right to inspect the Facility, the properties, books, Contracts, papers and records of Seller relating to the Facility and the Purchased Assets, and the opportunity to meet with Seller Employees and the officers and agents of Seller who have responsibility for the operation of the Facility. In furtherance of the foregoing, Seller will, without charge, furnish Buyer with such additional financial and operating data and other information as to Seller, the Facility and the Purchased Assets as Buyer may from time to time reasonably request without regard to where such information may be located. Buyer's right of access and inspection shall be made in such a manner as not to interfere unreasonably with the business.

Section 6.11 Consents to Assignment. Seller is responsible for obtaining, and shall use commercially reasonable efforts to obtain prior to the Closing, any and all consents to assign any Assigned Contract necessary or desirable in connection with the transactions contemplated herein. Each party shall cooperate with the other as reasonably requested to obtain any such consents. Attached hereto as Exhibit J is the Consent to Assignment form (the "Consent to Assignment") to be used by Seller to satisfy its obligations pursuant to this Section, unless otherwise approved in writing by Buyer.

Section 6.12 Governmental Consents; Approvals. Between the Effective Date and the Closing Date, Seller, at its sole cost and expense, shall take all reasonable steps to obtain as promptly as practicable all Approvals and Permits necessary for Seller to transfer the Purchased Assets to Buyer. Notwithstanding the foregoing, Buyer and Seller agree to cooperate with each other and to provide such information and communications to each other or to any Governmental Authority as may be reasonably requested in order to obtain the Approvals and Permits contemplated above or otherwise necessary to consummate the transactions contemplated hereby. Seller and Buyer will supply to each other copies of all material correspondence, filings or written communications by such party or its Affiliates with any Governmental Authority or staff members thereof, with respect to the transactions contemplated by this Agreement.

Section 6.13 [DELETED]

Section 6.14 Exclusivity. From the Effective Date until the earlier of: (a) the Closing Date and (b) the termination of this Agreement in accordance with its terms, none of the Seller or its Affiliates, or Seller's board members, officers or agents shall: (i) offer for sale any of the Purchased Assets (or any material portion thereof), or any ownership interest in or management rights or rights or interests in the Purchased Assets or the Facility; (ii) solicit offers to buy all or any material portion of any of the Purchased Assets, or any ownership interest in or management rights or rights or interests in the Purchased Assets or the Facility; (iii) hold discussions with any Person (other than Buyer) looking toward such an offer or solicitation; or (iv) enter into any agreement with any Person (other than Buyer) with respect to the sale or other disposition of any of the Purchased Assets (or any material portion thereof) or any ownership interest in or management rights or rights or interests in the Purchased Assets or the Facility, or with respect to any merger, consolidation, or similar transaction involving the Purchased Assets or the Facility. Seller will promptly communicate to Buyer the substance of any inquiry or proposal concerning any such transaction received by it prior to the close of the above-mentioned period.

Section 6.15 Casualty. If any part of the Purchased Assets is damaged, lost or destroyed (whether by fire, theft, vandalism or other cause or casualty) in whole or in part prior to Closing, and the fair market value of such damage, loss or destruction is less than $1,500,000, Buyer may, at its option, either (i) reduce the Purchase Price by the greater of (A) the fair market value of the Purchased Assets damaged, lost or destroyed, such value to be determined as of the date immediately prior to such damage, loss or destruction plus an amount equal to the estimated revenues in excess of expenses for Seller during any period of repair or reconstruction that extends beyond the Closing (the "Estimated Business Loss") or (B) by the estimated cost to replace or restore the damaged, lost or destroyed Purchased Assets plus an amount equal to the Estimated Business Loss, or (ii) require Seller to transfer the proceeds (or the right to the proceeds) of applicable insurance to Buyer at Closing (including business interruption insurance) plus an amount equal to any deductibles paid or incurred by Seller, and Buyer may replace or restore the damaged, lost or destroyed property. If any part of the Purchased Assets is damaged, lost or destroyed (whether by fire, theft, vandalism or other cause or casualty) in whole or in part prior to Closing, and either the fair market value of such damage, loss

or destruction is equal to or greater than $1,500,000, Buyer may, at its option, either (x) require Seller to transfer the proceeds (or the right to the proceeds) of applicable insurance (including business interruption insurance) plus an amount equal to any deductibles paid or incurred by Seller to Buyer at Closing, and Buyer may restore or replace the damaged, lost or destroyed property, (y) terminate this Agreement in its entirety or (z) reduce the Purchase Price by the greater of (A) the fair market value of the Purchased Assets damaged, lost or destroyed, such value to be determined as of the date immediately prior to such damage, loss or destruction plus an amount equal to the Estimated Business Loss or (B) the estimated cost to replace or restore the damaged, lost or destroyed Purchased Assets plus an amount equal to the Estimated Business Loss. The reduction in the Purchase Price shall be determined by an MAI appraiser to be mutually selected and paid equally by Seller and Buyer. Any Estimated Business Loss for which Buyer exercises the remedies afforded under Section 6.15(x) or (z) shall not be deemed a Material Adverse Effect for any purposes of this Agreement.

Section 6.16 [DELETED]

ARTICLE VII
INDEMNIFICATION

Section 7.01 Survival. Subject to the limitations and other provisions of this Agreement, the representations and warranties contained herein or made pursuant to this Agreement (and any indemnity obligations) shall survive the Closing and shall remain in full force and effect until the date that is eighteen (18) months following the Closing Date; *provided* that (i) Fundamental Representations shall survive indefinitely, and (ii) Section 4.10, Section 4.11, Section 4.12, and Section 4.15 shall survive for the full period of all applicable statutes of limitations including any applicable tolling period (giving effect to any waiver, mitigation or extension thereof) plus 60 days. All covenants and agreements of the parties contained herein shall survive the Closing indefinitely or for the period explicitly specified therein. Notwithstanding the foregoing, any claims asserted in good faith with reasonable specificity (to the extent known at such time) and in writing by notice from the non-breaching party to the breaching party prior to the expiration date of the applicable survival period shall not thereafter be barred by the expiration of the relevant representation or warranty, and such claims shall survive until finally resolved.

Section 7.02 Indemnification by Seller. Subject to the other terms and conditions of this Article VII, Seller shall indemnify and defend each of Buyer, Buyer's Affiliates, and each of their respective Representatives (collectively, the "Buyer Indemnitees") from and against, and shall hold each of them harmless from and against, and shall pay and reimburse each of them for, any and all Losses incurred or sustained by, or imposed upon, any of the Buyer Indemnitees or that any of the Buyer Indemnitees may incur as a result of, based upon, arising out of, with respect to or by reason of any one or more of the following: (i) any inaccuracy in or breach of any of the representations or warranties of Seller contained in this Agreement, the Ancillary Documents or in any certificate or instrument delivered by or on behalf of Seller pursuant to this Agreement; (ii) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by Seller pursuant to this Agreement, the Ancillary Documents or any certificate or instrument delivered by or on behalf of Seller pursuant to this Agreement; (iii) any Excluded Asset or any Excluded Liability; (iv) any claim or Liability asserted by a Person who is not a party to this Agreement (a "Third Party Claim") based upon, resulting from or arising out of (a) the Facility, the Purchased Assets, the Assumed Liabilities, operations, properties, assets or obligations of Seller or any of Seller's Affiliates conducted, existing or arising on or prior to the Closing Date, or (b) Section 7.02(iii), Section 7.02(v) or Section 7.02(vi) without regard to whether existing or arising on, prior to or after the Closing Date; (v) the failure to obtain consent from the counterparty or counterparties to an Assigned Contract as of the Closing Date; (vi) any orders, Actions, compliance reports or information requests, subpoenas or production requests, settlement agreements or conciliation agreements arising from the Facility or the Purchased Assets prior to the Closing or from facts in existence relating to the Facility or the Purchased Assets prior to the Closing, or (vii) any fraud, willful misconduct or criminal acts of (a) Seller, or (b) the Affiliates, Representatives and any other officers, directors, agents, independent contractors and employees of Seller. Losses payable by Seller to Buyer Indemnitees for an Indemnification Claim pursuant to this Section 7.02 shall be satisfied first from the Escrow Account, and then by proceeding directly against Seller.

Section 7.03 Determination of Losses. For purposes of (a) determining whether or not a representation or warranty made by Seller has been breached for purposes of Section 7.02, or (b) calculating the amount of Losses to which a Buyer Indemnitee is entitled under this Article VII, Material Adverse Effect and the terms "material," "materiality," and similar qualifiers, modifiers or limitations (including monetary values and qualifiers as to "knowledge") shall be disregarded.

Section 7.04 Indemnification by Buyer. Subject to the other terms and conditions of this Article VII, Section 9.13 and the Laws and Constitution of the State of Texas, Buyer shall indemnify and defend Seller and Seller's Affiliates and their respective Representatives (collectively, the "Seller Indemnitees") against, and shall hold each of them harmless from and against, and shall pay and reimburse each of them for, any and all Losses incurred or sustained by, or imposed upon, the Seller Indemnitees based upon, arising out of, with respect to or by reason of: (i) any inaccuracy in or breach of any of the representations or warranties of Buyer contained in this Agreement, the Ancillary Documents or in any certificate or instrument delivered by or on behalf of

Buyer pursuant to this Agreement; (ii) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by Buyer pursuant to this Agreement; or (iii) any Assumed Liability.

Section 7.05 Indemnification Procedures.

(a) Whenever any claim shall arise for indemnification under this Article VII (an "Indemnification Claim"), the party entitled to indemnification (the "Indemnified Party") shall promptly provide written notice of the Indemnification Claim to the party obligated to provide indemnification (the "Indemnifying Party"), but in any event not later than thirty (30) days after the Indemnified Party becomes aware of the Indemnification Claim; *provided* that failure to timely give such written notice shall not relieve the Indemnifying Party of its indemnification obligations except and only to the extent that the Indemnifying Party is required to forfeit rights or defenses by reason of such failure. Such notice shall describe the Indemnification Claim in reasonable detail, shall include copies of all available material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party.

(b) The Indemnifying Party shall not be entitled to participate in the defense of any Buyer Indemnitee with respect to any Third Party Claim or direct claim, and will have no right to defend the Indemnified Party against the Third Party Claim or direct claim. The Indemnified Party will, together with the Attorney General of the State of Texas, undertake the defense, compromise or settlement of each Third Party Claim and direct claim on behalf of and for the account and risk of the Indemnifying Party; *provided*, *however*, that no Third Party Claim or direct claim shall be compromised or settled without concurrent notice to the Indemnifying Party. Notwithstanding anything to the contrary in this Section 7.05(b), if the Indemnifying Party is a party to a direct claim, the Indemnifying Party shall be entitled to conduct its own defense of such direct claim, but not the defense of any Indemnified Party concerning such direct claim. No action taken by the Indemnified Party in accordance with such defense and settlement shall relieve the Indemnifying Party of its indemnification obligations herein provided with respect to any damages resulting therefrom.

(c) The Indemnifying Party shall cooperate in all commercially reasonable respects with the Indemnified Party and the Attorney General of the State of Texas in the investigation, trial and defense of any Action that may be subject to this Article VII and any appeal arising therefrom. The parties shall cooperate with each other in any notifications to insurers. The Indemnifying Party shall assist and cooperate, at the cost of the Indemnifying Party, with the Indemnified Party in the making of settlements and the enforcement of any right of contribution to which the Indemnified Party may be entitled from any Person or entity in connection with the subject matter of any litigation subject to indemnification hereunder.

Section 7.06 Tax Treatment of Indemnification Payments. All indemnification payments made under this Agreement shall be treated by the parties as an adjustment to the Purchase Price for Tax purposes, unless otherwise required by Law.

Section 7.07 Exclusive Remedies. Subject to Section 6.04(e) and Section 9.13, each party acknowledges and agrees that its sole and exclusive remedy with respect to any and all claims (other than claims related to an Excluded Liability or arising from criminal activity, intentional misrepresentation, fraud or willful misconduct on the part of such party in connection with the transactions contemplated by this Agreement) for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article VII. Nothing in this Section 7.07 shall limit either party's right to seek any equitable relief hereunder or to seek any remedy on account of any party's criminal, intentional, fraudulent or willful misconduct.

Section 7.08 Limitation of Liability. NOTWITHSTANDING ANY PROVISION OF THIS AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PURSUANT TO THIS ARTICLE VII FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS OR BUSINESS INTERRUPTION) OR PUNITIVE DAMAGES (OTHER THAN AS SET FORTH IN THE DEFINITION OF "LOSSES") ARISING OUT OF, OR IN CONNECTION WITH, THIS AGREEMENT OR ITS SUBJECT MATTER.

ARTICLE VIII
TERMINATION

Section 8.01 Termination Events. Notwithstanding anything to the contrary set forth herein, this Agreement may, by written notice given prior to or at the Closing, be terminated and the transactions contemplated hereby may be abandoned at any time prior to the Closing as follows:

(a) By Seller if Closing has not occurred by February 21, 2020;

(b) by Buyer if there has been a Material Adverse Effect, or if an event or circumstance has occurred which would reasonably be expected to result in a Material Adverse Effect;

(c) by Buyer pursuant to its right to terminate under Section 6.15 if any part of the Purchased Assets is damaged, lost or destroyed (whether by fire, theft, vandalism or other cause or casualty) in whole or in part prior to Closing, and either the fair market value of such damage, loss or destruction is equal to or greater than $1,500,000, or the Facility has suffered material damage;

(d) by either Buyer or Seller by providing written notice to the other at any time on or before February 21, 2020 (the "End Date") if the Closing shall not have occurred by reason of the impossibility of satisfying any condition set forth in Section 3.02, in the case of Buyer, or Section 3.03 in the case of Seller, (unless the impossibility of satisfying any such condition is the result of one or more breaches or violations of, or inaccuracy in, any covenant, agreement, representation or warranty set forth in this Agreement by the terminating party);

(e) by either Buyer or Seller by providing written notice to the other at any time on or after the End Date if the Closing shall not have occurred by the End Date; *provided, however,* that the right to terminate this Agreement under this Section 8.01(e) shall not be available to a party whose failure to fulfill any obligation under this Agreement or breach of any representation or warranty under this Agreement has been the cause of, or resulted in, the failure of the Closing to occur by the End Date;

(f) by either Buyer or Seller if a final nonappealable order permanently enjoining, restraining or otherwise prohibiting the Closing shall have been issued by a Governmental Authority of competent jurisdiction; or

(g) by mutual written agreement of Buyer and Seller.

Section 8.02 Effect of Termination. Each party's right of termination under Section 8.01 is in addition to any other rights it may have under this Agreement or otherwise, and the exercise of a right of termination will not be an election of remedies. If this Agreement is terminated pursuant to Section 8.01, this Agreement shall become null and void and of no further force of effect, all further obligations of the parties under this Agreement shall terminate without further liability of any party to another, and none of the parties hereto (or their respective Affiliates, directors, officers, Regents, partners, employees, agents, consultants, attorneys or other representatives) shall have any liability in respect of such termination, except that the rights and obligations in this Section 8.02, in Article VII and in Article IX will survive any termination. In addition, if this Agreement is terminated by a party because one or more of the conditions to the terminating party's obligations under this Agreement is not satisfied as a result of the other party's failure to comply with its obligations under this Agreement or other breach of this Agreement, the terminating party's right to pursue all legal remedies will survive such termination unimpaired. A termination of this Agreement under Section 8.01 shall not relieve any party of any liability for a breach of, or for any misrepresentation under, this Agreement, or be deemed to constitute a waiver of any available remedy (including specific performance if available) for any such breach or misrepresentation.

ARTICLE IX
MISCELLANEOUS

Section 9.01 Expenses. Except as otherwise expressly provided herein, all costs and expenses, including fees and disbursements of counsel, financial advisors and accountants, incurred in connection with this Agreement and the transactions contemplated hereby shall be paid by the party incurring such costs and expenses; *provided, however,* that Seller shall pay the fees and expenses of the Escrow Agent pursuant to the Escrow Agreement.

Section 9.02 Notices. All notices, requests, consents, claims, demands, waivers and other communications hereunder shall be in writing and shall be deemed to have been given: (a) when delivered by hand (with written confirmation of receipt); (b) when received by the addressee if sent by a nationally recognized overnight courier; (c) on the date sent by email of a .PDF document (with confirmation of transmission) if sent during normal business hours of the recipient, and on the next Business Day if sent after normal business hours of the recipient; or (d) when delivered from a point in the United States by a recognized overnight courier service or overnight courier, or on the third day after the date mailed, by certified or registered mail, return receipt requested, postage prepaid. Such communications must be sent to the respective parties at the following addresses (or at such other address for a party as shall be specified in a notice given in accordance with this Section 9.02):

If to Seller:

Bellicum Pharmaceuticals, Inc.
2130 West Holcombe Blvd
Suite 800
Houston, TX 77030
Attention: General Counsel
Email: sward@bellicum.com

with a copy to

Pillsbury Winthrop Shaw Pittman LLP
2 Houston Center
909 Fannin Street, Suite 2000
Houston, TX 77010-1028
Attention: Andrew L. Strong
Email: andrew.strong@pillsburylaw.com

If to Buyer:

The University of Texas M.D. Anderson Cancer Center
Attn.: SVP and Chief Financial Officer
1400 Pressler Street, Unit 1495
Houston, Texas 77030
Fax No.: (713) 745-1034
Email: bbmelson@mdanderson.org

with simultaneous copies to

The University of Texas
M. D. Anderson Cancer Center
7007 Bertner Avenue, Unit 1674
Houston, Texas 77030-3907
Attention: Chief Legal Officer
Fax Number: (713) 745-6029
Email: ahkinzel@mdanderson.org

and

Executive Director of Real Estate
The University of Texas System
210 West 7th Street
Austin, Texas 78701
Fax Number: (512) 499-4523

and

Hunton Andrews Kurth LLP
200 Park Avenue, 52nd Floor
New York, New York 10166
Attention: Roger Griesmeyer
Email: rgriesmeyer@huntonak.com

Section 9.03 Interpretation. For purposes of this Agreement: (a) the words "include," "includes" and "including" shall be deemed to be followed by the words "without limitation"; (b) the word "or" is not exclusive; (c) the words "herein," "hereof," "hereby," "hereto" and "hereunder" refer to this Agreement as a whole; (d) the word "dollars" or the symbol "$" refers to United States Dollars; (e) the words "knowledge of Seller," "Seller's knowledge" or any other similar knowledge qualifications means the knowledge of the Seller Knowledgeable Persons after due inquiry; (f) "ordinary course of business" means consistent with the past practice of Seller in its conduct of the operation of the Facility and ownership of the Purchased Assets during the 12-month period ending on the date of this Agreement; (g) "made available to Buyer" means uploaded to the online data room established and maintained by Seller in connection with Buyer's investigation of the Purchased Assets not less than three (3) Business Days prior to the date of this Agreement; (h) the masculine gender shall also include the feminine and neutral genders, and vice versa; (i) words, including defined terms, importing the singular shall also include the plural, and vice versa; and (j) unless the context otherwise requires, references herein (x) to Articles, Sections and Disclosure Schedules mean the Articles and Sections of, and the Disclosure Schedules attached to, this Agreement; (y) to an agreement, instrument or other document means such agreement, instrument or other document as amended, supplemented and modified from time to time to the extent permitted by the provisions thereof and (z) to a statute means such statute as amended from time to time and includes any successor legislation thereto and any regulations promulgated thereunder. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted. The Disclosure Schedules referred to herein shall be construed with, and as an integral part of, this Agreement to the same extent as if they were set forth verbatim herein.

Section 9.04 Headings. The headings in this Agreement are for reference only and shall not affect the interpretation of this Agreement.

Section 9.05 Severability. If any term or provision of this Agreement is held to be invalid, illegal or unenforceable by a court of competent jurisdiction, this Agreement will be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof. Except as provided in Section 6.04(e), upon such determination that any term or other provision is invalid, illegal or unenforceable, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in a mutually acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the greatest extent possible.

Section 9.06 Entire Agreement. This Agreement and the Ancillary Documents constitute the sole and entire agreement of the parties to this Agreement with respect to the subject matter contained herein and therein, and supersede all prior and contemporaneous understandings and agreements, both written and oral, with respect to such subject matter, including that certain Letter of Intent, dated as of October 3, 2019 (the "Letter of Intent"), between Buyer and Seller, together with any amendment(s) thereto. In the event of any inconsistency between the statements in the body of this Agreement and those in the Ancillary Documents and the Disclosure Schedules (other than an exception expressly set forth as such in the Disclosure Schedules) or the Letter of Intent, the statements in the body of this Agreement will control.

Section 9.07 Successors and Assigns. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and permitted assigns. Neither party may assign its rights or obligations hereunder without the prior written consent of the other party; *provided, however,* that Buyer may, without the prior written consent of Seller, assign all or any portion of its rights under this Agreement to one or more of its Affiliates. No assignment shall relieve the assigning party of any of its obligations hereunder. For purposes of this Section 9.07, an "assignment" shall include any merger, sale of greater than 50% of the voting securities or other change of control of any party hereto.

Section 9.08 No Third-Party Beneficiaries. Except as provided in herein, this Agreement is for the sole benefit of the parties hereto and their respective successors and permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other Person or entity any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

Section 9.09 Amendment and Modification; Waiver. This Agreement may only be amended, modified or supplemented by an agreement in writing signed by Buyer and Seller. No waiver by any party of any of the provisions hereof shall be effective unless explicitly set forth in writing and signed by the party so waiving. No waiver by any party shall operate or be construed as a waiver in respect of any failure, breach or default not expressly identified by such written waiver, whether of a similar or different character, and whether occurring before or after that waiver. No failure to exercise, or delay in exercising, any right, remedy, power or privilege arising from this Agreement shall operate or be construed as a waiver thereof, nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

Section 9.10 Governing Law and Venue. This Agreement will be construed under and in accordance with the Laws of the State of Texas without reference to its conflicts of law provisions, and all obligations of the parties created under this Agreement are performable in Harris County, Texas. Subject to Section 9.12 and Section 9.13 hereof, any legal suit, action or proceeding arising out of or based upon this Agreement, the other transaction documents or the transactions contemplated hereby or thereby may be instituted in the Federal Courts of the United States of America or the courts of the State of Texas in each case located in the City of Houston and Harris County, and each party irrevocably submits, to the maximum extent permitted by Law, to the exclusive jurisdiction of such courts in any such suit, action or proceeding.

Section 9.11 State Auditor's Office. Seller understands that acceptance of funds under this Agreement constitutes acceptance of authority of the Texas State Auditor's Office or any successor agency ("Auditor"), to conduct an audit or investigation in connection with those funds (ref. Sections 51.9335(c), 73.115(c) and 74.008(c), Texas Education Code). Seller agrees to cooperate with Auditor in the conduct of the audit or investigation, including providing all records requested.

Section 9.12 Dispute Resolution. To the extent that Chapter 2260, *Texas Government Code*, as it may be amended from time to time ("Chapter 2260"), is applicable to this Agreement and is not preempted by other applicable Law, the dispute resolution process provided for in Chapter 2260 and the related rules adopted by the Texas Attorney General pursuant to Chapter 2260 will be used by Buyer and Seller to attempt to resolve any claim for breach of contract made by Seller against Buyer that cannot be resolved in the ordinary course of business. The chief business officer of Buyer will examine Seller's claim and any counterclaim and negotiate in an effort to resolve the claims. The parties specifically agree (i) neither execution of this Agreement by Buyer nor any other conduct, action or inaction of any representative of Buyer relating to this Agreement constitutes or is intended to constitute a waiver of Buyer's or the state's sovereign immunity to suit; and (ii) Buyer has not waived its right to seek redress in the courts.

Section 9.13 Texas State Agency. BUYER IS A STATE AGENCY. BUYER IS SUBJECT TO THE CONSTITUTION AND LAWS OF THE STATE OF TEXAS AND UNDER THE CONSTITUTION AND LAWS OF THE STATE OF TEXAS POSSESSES CERTAIN RIGHTS AND PRIVILEGES, IS SUBJECT TO CERTAIN LIMITATIONS AND RESTRICTIONS, AND ONLY HAS SUCH AUTHORITY AS IS GRANTED UNDER THE CONSTITUTION AND LAWS OF THE STATE OF TEXAS. THE PARTIES ARE AWARE THERE ARE CONSTITUTIONAL AND STATUTORY LIMITATIONS ON THE AUTHORITY OF BUYER (A STATE AGENCY) TO ENTER INTO CERTAIN TERMS AND CONDITIONS THAT MAY BE PART OF THIS AGREEMENT, INCLUDING TERMS AND CONDITIONS RELATING TO LIENS ON BUYER'S

PROPERTY; DISCLAIMERS AND LIMITATIONS OF WARRANTIES; DISCLAIMERS AND LIMITATIONS OF LIABILITY FOR DAMAGES; WAIVERS, DISCLAIMERS AND LIMITATIONS OF LEGAL RIGHTS, REMEDIES, REQUIREMENTS AND PROCESSES; LIMITATIONS OF PERIODS TO BRING LEGAL ACTION; GRANTING CONTROL OF LITIGATION OR SETTLEMENT TO ANOTHER PARTY; LIABILITY FOR ACTS OR OMISSIONS OF THIRD PARTIES; PAYMENT OF ATTORNEYS' FEES; DISPUTE RESOLUTION; INDEMNITIES; AND CONFIDENTIALITY, AND TERMS AND CONDITIONS RELATED TO LIMITATIONS WILL NOT BE BINDING ON BUYER EXCEPT TO THE EXTENT AUTHORIZED BY THE LAWS AND CONSTITUTION OF THE STATE OF TEXAS. NOTWITHSTANDING ANY OTHER PROVISION TO THE CONTRARY, UNLESS OTHERWISE PROVIDED BY APPLICABLE LAW, NOTHING IN THIS AGREEMENT IS INTENDED TO BE, NOR WILL IT BE CONSTRUED TO BE, A WAIVER OF THE SOVEREIGN IMMUNITY OF THE STATE OF TEXAS OR A PROSPECTIVE WAIVER OR RESTRICTION OF ANY OF THE RIGHTS, REMEDIES, CLAIMS, AND PRIVILEGES OF THE STATE OF TEXAS. MOREOVER, NOTWITHSTANDING THE GENERALITY OR SPECIFICITY OF ANY PROVISION OF THIS AGREEMENT, UNLESS OTHERWISE PROVIDED BY APPLICABLE LAW, THE PROVISIONS OF THIS AGREEMENT AS THEY PERTAIN TO BUYER ARE ENFORCEABLE ONLY TO THE EXTENT AUTHORIZED BY THE CONSTITUTION AND LAWS OF THE STATE OF TEXAS. SELLER ACKNOWLEDGES AND AGREES THAT BUYER IS NOT REQUIRED TO PERFORM ANY ACT OR TO REFRAIN FROM ANY ACT THAT WOULD VIOLATE ANY APPLICABLE LAW, INCLUDING THE CONSTITUTION AND LAWS OF THE STATE OF TEXAS.

Section 9.14 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement. A signed copy of this Agreement, or any agreement or certificate delivered in connection with the consummation of the transactions contemplated hereby, delivered by facsimile, email or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

Section 9.15 Payments by Electronic Funds Transfer. Section 51.012, Texas Education Code, authorizes Buyer to make payments through electronic funds transfer methods. Seller agrees to accept payment from Buyer through those methods, including the automated clearing house system ("ACH"). Seller agrees to provide its banking information to Buyer in writing on Seller's respective letterhead signed by an authorized representative. Prior to payment of any portion of the Purchase Price, Buyer will confirm Seller's banking information. Changes to bank information must be communicated to Buyer in writing at least ten (10) days before the effective date of the change and must include an IRS Form W-9 signed by an authorized representative of Seller.

Section 9.16 Payment of Debt or Delinquency to the State. Pursuant to Sections 2107.008 and 2252.903, Texas Government Code, Seller agrees that any payments owing to it under this Agreement may be applied directly toward any debt or delinquency Seller owes the State of Texas or any agency of the State of Texas, regardless of when it arises, until paid in full.

[Signature page follows]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Effective Date by their respective officers thereunto duly authorized.

SELLER:

BELLICUM PHARMACEUTICALS, INC.

By: /s/ Rick Fair
Name: Rick Fair
Title: President

BUYER:

THE UNIVERSITY OF TEXAS M.D.
ANDERSON CANCER CENTER

By: Peter W.T. Pisters, M.D.
Name: Peter W.T. Pisters, M.D.
Title: President

READ AND APPROVED:

By: Jason B. Bock, Ph.D.
Name: Jason B. Bock, Ph.D.
Its: VP and Head, Biologics Product Development

Reviewed and Approved by
UTMDACC Legal Services for
UTMDACC Signature:

/s/Kenny Freed 1/15/2020

EXHIBIT A

Definitions

Definitions. For purposes of this Agreement, the term:

(a) "Action" means any claim, action, cause of action, demand, lawsuit, arbitration, inquiry, audit, notice of violation, proceeding, litigation, citation, summons, subpoena or investigation of any nature, civil, criminal, administrative, regulatory or otherwise, whether at law or in equity.

(b) "Affiliate" of a Person means any other Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. For purposes of this Agreement, the term "control" (including the terms "controlled by" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise. For purposes of this Agreement, each of (i) The University of Texas System, and (ii) The UT Board of Regents is an Affiliate of Buyer; *provided, however,* that, for purposes of Section 6.04, the term "Affiliates" shall not include any member institution of The University of Texas System other than Buyer, nor shall it include any individual member of the UT Board of Regents or his or her respective Affiliates.

(c) "Agreement" means this Asset Purchase Agreement, as amended or supplemented, together with all Exhibits and Disclosure Schedules attached or delivered with respect hereto or expressly incorporated herein by reference.

(d) "Ancillary Documents" means any agreement, instrument or document required to be delivered at the Closing or that is otherwise executed by Buyer or Seller in furtherance of the consummation of the transactions contemplated by this Agreement, including, but not limited to, the Bill of Sale, the Assignment and Assumption Agreement, the Escrow Agreement, the Master Services Agreement, Transition Services Agreement, the Termination of Lease, and the Sublease Agreement.

(e) "Approval" means any approval, authorization, consent, notice, qualification or registration, or any extension, modification, amendment or waiver of any of the foregoing, of or from, or any notice, statement, filing or other communication to be filed with or delivered to, any Governmental Authority.

(f) "Assigned Contracts" is defined in Section 1.01(a).

(g) "Business Day" means any day except Saturday, Sunday or any other day on which commercial banks located in New York, New York are authorized or required by Law to be closed for business.

(h) "COBRA" means the Consolidated Omnibus Budget Reconciliation Act of 1985, the Public Health Service Act, codified as 42 U.S.C. §§ 300bb-1 through 300bb-8, and any similar state or federal continuation of coverage laws.

(i) "Code" means the Internal Revenue Code of 1986, as amended.

(j) "Contracts" means all contracts, warrantys, subleases, sublicenses, leases, deeds, mortgages, licenses, instruments, notes, commitments, undertakings, indentures, joint ventures and all other agreements, commitments and legally binding arrangements, whether written or oral.

(k) "current Good Manufacturing Practices" or "cGMP" means the then-current good manufacturing practices required by the U.S. Food and Drug Administration for the manufacture and testing of investigational drugs used in phase 1 clinical trials, as set forth in the Federal Food, Drug and Cosmetic Act and the regulations promulgated thereunder, including the provisions of 21 C.F.R. Parts 210 and 211.

(l) "Disclosure Schedules" means the Disclosure Schedules delivered by Seller and agreed to by Buyer concurrently with the execution and delivery of this Agreement.

(m) "Encumbrance" means any charge, claim, community property interest, pledge, condition, equitable interest, lien (statutory or other), option, security interest, mortgage, easement, encroachment, right of way, right of first refusal, or restriction of any kind, including any restriction on use, voting, transfer, receipt of income or exercise of any other attribute of ownership.

(n) "Environmental Claim" means any Action, Governmental Order, Encumbrance, fine, penalty, or, as to each, any settlement or judgment arising therefrom, by or from any Person alleging liability of whatever kind or nature (including liability or responsibility for the costs of enforcement proceedings, investigations, cleanup, governmental response, removal or remediation, natural resources damages, property damages, personal injuries, medical monitoring, penalties, contribution, indemnification and injunctive relief) arising out of, based on or resulting from: (i) the presence, Release of, or exposure to, any Hazardous Materials; or (ii) any actual or alleged non-compliance with any Environmental Law or term or condition of any Environmental Permit.

(o) "Environmental Law" means any applicable Law, and any Governmental Order or Contract with any Governmental Authority: (i) relating to pollution (or the cleanup thereof) or the protection of natural resources, endangered or threatened species, human health or safety, or the environment (including ambient air, soil, surface water or groundwater, or subsurface strata); or (ii) concerning the presence of, exposure to, or the management, manufacture, use, containment, storage, recycling, reclamation, reuse, treatment, generation, discharge, transportation, processing, production, disposal or remediation of any Hazardous Materials.

(p) "Environmental Notice" means any written directive, notice of violation or infraction, or notice respecting any Environmental Claim relating to actual or alleged non-compliance with any Environmental Law or any term or condition of any Environmental Permit.

(q) "Environmental Permit" means any Permit, letter, clearance, consent, waiver, closure, exemption, decision or other action required under or issued, granted, given, authorized by or made pursuant to Environmental Law.

(r) "ERISA" means the Employee Retirement Income Security Act of 1974, as amended, and the regulations promulgated thereunder.

(s) "ERISA Affiliate" means all employers (whether or not incorporated) that would be treated together with Seller or any of its Affiliates as a "single employer" within the meaning of Section 414 of the Code or Section 4001 of ERISA.

(t) "Escrow Agent" means UMB Bank, N.A., located at 6034 West Courtyard Drive, Suite 370, Austin, Texas 78730.

(u) "Escrow Amount" means $1,500,000.

(v) "Fundamental Representations" means the Fundamental Representations of Buyer and the Fundamental Representations of Seller.

(w) "Fundamental Representations of Buyer" means the representations and warranties of Buyer set forth in Sections and 5.01, 5.02, and 5.06.

(x) "Fundamental Representations of Seller" means the representations and warranties of Seller set forth in Sections 4.01, 4.02, 4.06, and 4.17.

(y) "GAAP" means United States generally accepted accounting principles in effect from time to time.

(z) "Governmental Authority" means any federal, state, local or foreign government or political subdivision thereof, or any agency or instrumentality of such government or political subdivision, or any self-regulated organization or other non-governmental regulatory authority or quasi-governmental authority (to the extent that the rules, regulations, or orders of such organization or authority have the force of Law), or any arbitrator, court, or tribunal of competent jurisdiction.

(aa) "Governmental Order" means any order, writ, judgment, injunction, decree, stipulation, determination, or award entered by or with any Governmental Authority.

(bb) "Government Programs" means Medicare, Medicaid, TRICARE and any other plan or program providing health care benefits, whether directly through insurance or otherwise, that is funded directly, in whole or in part, by the United States Government or any state.

(cc) "Hazardous Materials" means all chemicals, materials, wastes, pollutants, contaminants, or substances that are prohibited, controlled, or regulated by, or for which Liability or standards of conduct are imposed under, Environmental Laws, including any petroleum or petroleum products (including crude oil or any fraction thereof), per- and polyfluoroalkyl

substances, perfluorooctanoic acid, perfluorooctane sulfonate, radioactive substances, asbestos in any form, lead or lead-containing materials, urea formaldehyde foam insulation and polychlorinated biphenyls.

(dd) "Immigration Act" means the Immigration Reform and Control Act of 1986.

(ee) "Intellectual Property" means any and all rights in, arising out of, or associated with any of the following in any jurisdiction throughout the world: (i) issued patents, patent applications, utility models and design rights; (ii) trademarks, service marks, brands, and other indicia of source or origin and all registrations, applications for registration, and renewals of, any of the foregoing; (iii) copyrights and works of authorship, whether or not copyrightable, and all registrations, applications for registration, and renewals of any of the foregoing; (iv) internet domain names, social media accounts and all associated web addresses, URLs and websites and all content and data thereon or relating thereto; (v) mask works, and all registrations, applications for registration, and renewals thereof; (vi) industrial designs; (vii) trade secrets, know-how, inventions (whether or not patentable), discoveries, improvements, technology, business and technical information, databases, data compilations and collections, tools, methods, processes, techniques, and other confidential and proprietary information and all rights therein; (viii) computer programs, operating systems, applications, firmware and other code, including all source code, object code, application programming interfaces, data files, databases, protocols, specifications, and other documentation thereof; (ix) rights of publicity; and (x) all other intellectual or industrial property and proprietary rights.

(ff) "Law" means any statute, law, ordinance, regulation, rule, code, order, constitution, treaty, common law, judgment, decree, other requirement or rule of law of any Governmental Authority.

(gg) "Leasehold Improvements" means all right, title and interest of the Seller in, to and under the leasehold improvements of every kind and description located on or which are a part of the Leased Real Property.

(hh) "Leasehold Interests" means (all and singular) the interests, estates, rights, privileges, titles, easements, options and appurtenances belonging, or in any way appertaining, any Seller as tenant, subtenant or occupant under the Real Property Leases.

(ii) "Leased Real Property" means the Facility and all other premises described by the Real Property Leases.

(jj) "Leases" mean the real property leases in connection with the occupancy, possession or use of real property, including all amendments, modifications, extensions, renewals, guaranties and other agreements with respect thereto.

(kk) "Liabilities" means liabilities, obligations, or commitments of any nature whatsoever, asserted or unasserted, known or unknown, absolute or contingent, accrued or unaccrued, matured or unmatured, or otherwise.

(ll) "Losses" means any and all claims, losses, damages, Liabilities, deficiencies, Actions, judgments, interest, awards, penalties, fines, costs (including court costs and costs of appeal), expenses of whatever kind (including, without limitation, reasonable costs of investigation defense, reasonable accountants', attorneys' and similar fees, the cost of enforcing any right to indemnification hereunder, interest accrued on late indemnification payments and the cost of pursuing any insurance providers) or diminution in value incurred or suffered by an Indemnitee, whether or not involving a Third Party Claim; *provided, however,* that "Losses" shall not include punitive damages, except to the extent actually awarded to a Governmental Authority or other third party, or related to criminal, intentional, fraudulent or willful misconduct.

(mm) "Material Adverse Effect" means any event, occurrence, fact, condition or change that is, or could reasonably be expected to become, individually or in the aggregate, materially adverse to (i) the business, results of operations, condition (financial or otherwise), assets, Liabilities or prospects of the business operations with respect to the Purchased Assets, (ii) the value of the Purchased Assets, or (iii) the ability of Seller to consummate the transactions contemplated hereby.

(nn) "Permits" means all permits, licenses, franchises, Approvals, authorizations, registrations, certificates, variances and similar rights obtained, or required to be obtained, from Governmental Authorities.

(oo) "Person" means an individual, corporation, partnership, joint venture, limited liability company, Governmental Authority, unincorporated organization, trust, association or other entity.

(pp) "Pre-Closing Tax Period" means any taxable period ending on or before the Closing Date and, with respect to any taxable period beginning before and ending after the Closing Date, the portion of such taxable period ending on and including the Closing Date.

(qq) "Release" means any release, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, abandonment, disposing or allowing to escape or migrate into or through the environment (including ambient air (indoor or outdoor), surface water, groundwater, land surface or subsurface strata or within any building, structure, facility or fixture).

(rr) "Representative" means, with respect to any Person, any and all Regents, directors, officers, employees, consultants, financial advisors, counsel, accountants and other agents of such Person.

(ss) "Seller Indebtedness" means, without duplication: (i) all obligations of any Seller for bank or other third-party indebtedness for borrowed money, including all such obligations under any bank credit agreement, capitalized lease, financing agreement or installment sale agreement and any other related financing or credit agreement, in each case, with respect to the operation of the Facility or any of the Purchased Assets; (ii) all obligations of Seller that relate to the creation or imposition of an Encumbrance upon any of the Purchased Assets.

(tt) "Seller Knowledgeable Persons" means Seller's executive officers (as such term is defined under Rule 16a-1(f) of the 1934 Act) and Vice President of Business Operations.

(uu) "Taxes" means all federal, state, local, foreign and other income, gross receipts, sales, use, production, ad valorem, transfer, documentary, franchise, registration, profits, license, lease, service, service use, withholding, payroll, employment, unemployment, estimated, excise, severance, environmental, stamp, occupation, premium, property (real or personal), real property gains, windfall profits, escheat, unclaimed property, customs, duties or other taxes, fees, assessments or charges of any kind whatsoever, together with any interest, additions or penalties with respect thereto and any interest in respect of such additions or penalties.

(vv) "Tax Return" means any return, declaration, report, claim for refund, information return or statement or other document relating to Taxes, including any schedule or attachment thereto, and including any amendment thereof.

(ww) "Territory" means the geographic area of the State of Texas.

(xx) "WARN Act" means the federal Worker Adjustment and Retraining Notification Act of 1988, and similar state, local and foreign laws related to plant closings, relocations, mass layoffs and employment losses.

Additional Defined Term	*Agreement Reference*
1934 Act	Section 4.11(c)
Agreement	Preamble
Allocation Schedule	Section 2.03
Amendment of Lease	Section 3.02(j)(v)
Assigned Contracts	Section 1.01(a)
Assignment and Assumption Agreement	Section 3.02(j)(ii)
Assignment and Assumption of Lease	Section 3.02(j)(v)
Assumed Liabilities	Section 1.03
Auditor	Section 9.11
Bill of Sale	Section 3.02(j)(i)
Buyer	Preamble
Buyer Indemnitees	Section 7.02
Chapter 2260	Section 9.12
Closing	Section 3.01
Closing Date	Section 3.01
Escrow Agreement	Section 3.02(j)(iii)
EIR	Section 4.26
Excluded Assets	Section 1.02
Excluded Contracts	Section 1.02(f)
Excluded Liabilities	Section 1.04
Additional Defined Term	Agreement Reference

HCAD Account	Section 6.08(d)
Indemnification Claim	Section 7.03
Indemnified Party	Section 7.03
Indemnifying Party	Section 7.03
Insurance Policies	Section 4.09
Inventory	Section 1.01(f)
Letter of Intent	Section 9.06
Manufactured Products	Section 1.01(c)
Master Services Agreement	Section 3.02(j)(iv)
Material Contract	Section 4.05(a)
Purchase Price	Section 2.01
Purchased Assets	Section 1.01
Real Property Lease	Section 4.07
Required Consents	Section 3.02(f)
Restricted Period	Section 6.04
Seller	Preamble
Seller Employees	Section 6.01(a)
Seller Indemnitees	Section 7.02
SOPs	Section 1.01(g)
Sublease Agreement	Section 3.02(j)(vii)
TCLR	Section 3.02(i)
TDLR	Section 3.02(i)
TEC	Section 4.22
Termination of Lease	Section 3.02(j)(v)
Third Party Claim	Section 7.05(b)
Transferred Employees	Section 6.01(a)
UT Board of Regents	Section 3.02(a)
Work Order #1	Section 3.02(j)(iv)

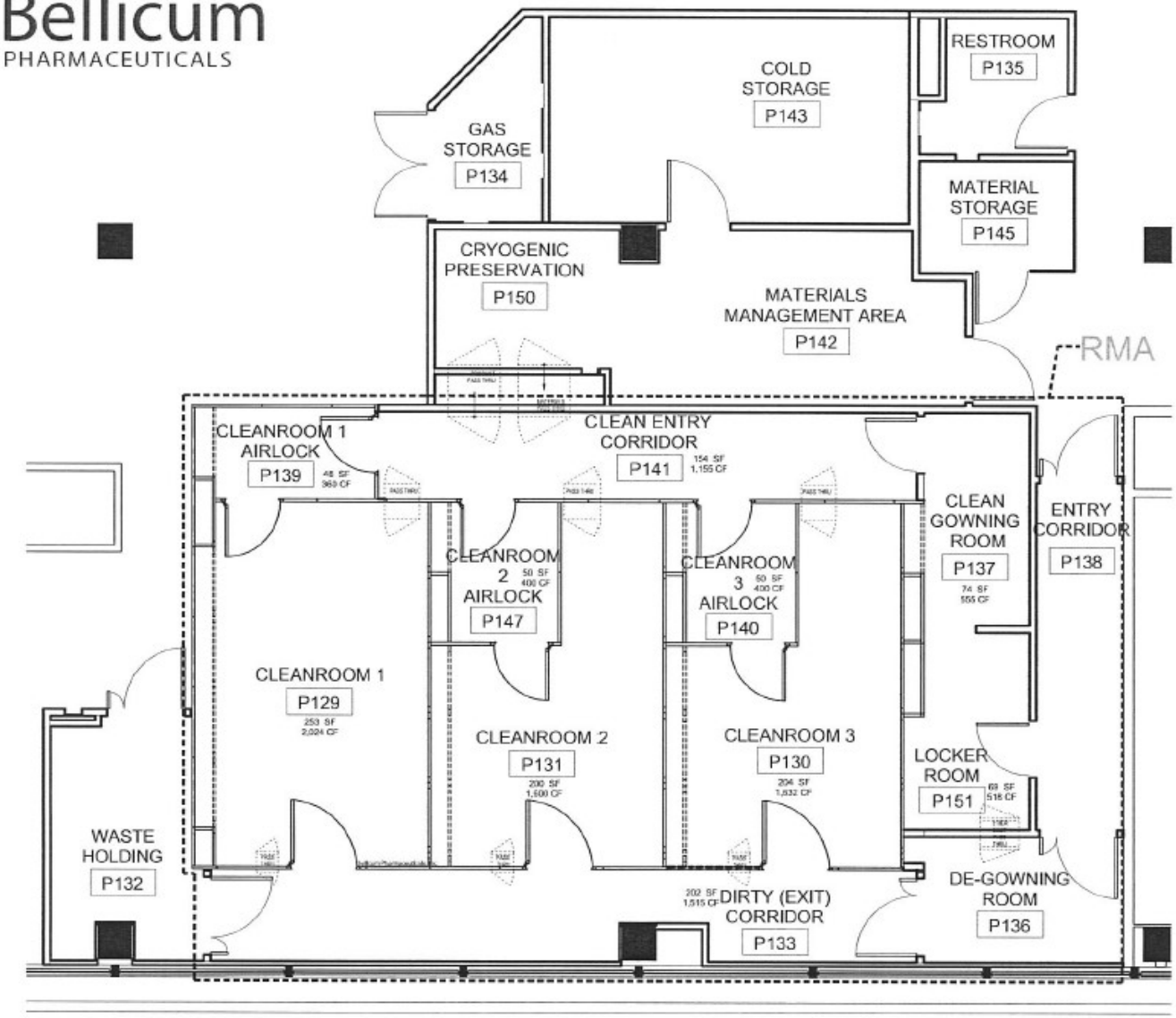
EXHIBIT B

Facility Description

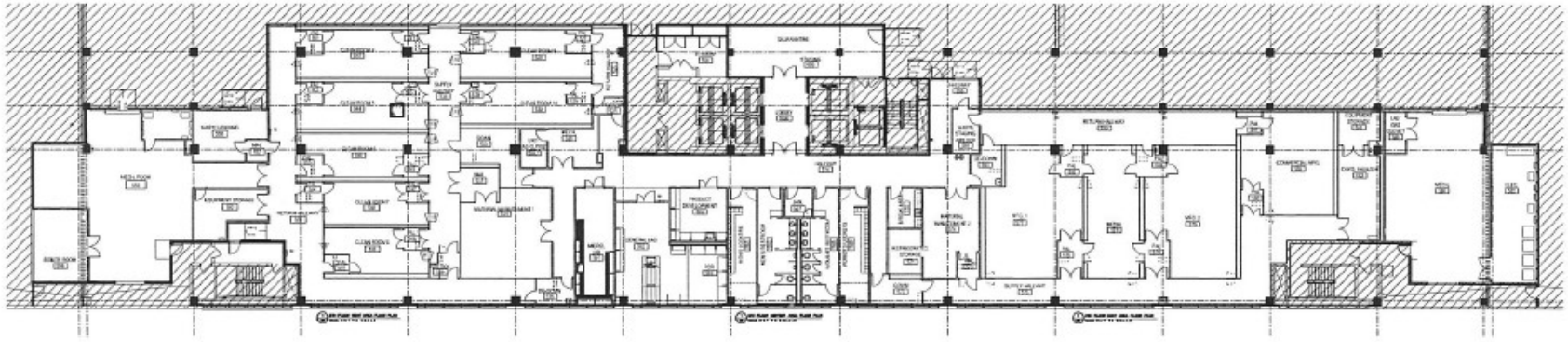
Bellicum
PHARMACEUTICALS

8TH FLOOR PLAN

Bellicum
PHARMACEUTICALS



PENTHOUSE FLOOR PLAN



Bellicum
PHARMACEUTICALS

5TH FLOOR PLAN

EXHIBIT C

Form of Escrow Agreement

EXHIBIT D

Form of Bill of Sale
[***]

EXHIBIT E

Form of Assignment and Assumption Agreement
[***]

EXHIBIT F

Form of Master Services Agreement

MASTER SERVICES AGREEMENT

BETWEEN

THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER

AND

BELLICUM PHARMACEUTICALS, INC.

This Master Services Agreement ("Agreement"), effective as of [•], 2020 (the "Effective Date"), is made by and between The University of Texas M. D. Anderson Cancer Center ("MD Anderson"), an institution of higher education and one of the institutions of The University of Texas System ("System"), which has its principal address at 1515 Holcombe Boulevard, Houston, Texas 77030, and Bellicum Pharmaceuticals, Inc., a Delaware corporation having its principal place of business at 2130 W. Holcombe Boulevard, Suite 800, Houston, Texas 77030 ("Bellicum"). MD Anderson and Bellicum may each be referred to herein as a "Party" and collectively as the "Parties."

RECITALS

WHEREAS, MD Anderson is a comprehensive cancer treatment, education, research, and prevention facility and an agency of the State of Texas located in Houston, Texas;

WHEREAS, Bellicum is a clinical stage biopharmaceutical company striving to deliver cures through controllable cell therapies;

WHEREAS, MD Anderson and Bellicum have entered into that certain Asset Purchase Agreement, dated as of January 17, 2020 (as it may be amended from time to time, the "APA"), pursuant to which, among other things, Bellicum agreed to sell the Purchased Assets (as defined in the APA) and to assign the Assumed Liabilities (as defined in the APA) to MD Anderson;

WHEREAS, the execution and delivery of this Agreement was a material inducement to entry into the APA and is a condition to Closing (as defined in the APA) under the terms of the APA;

WHEREAS, in connection with the APA, and pursuant to the terms and subject to the conditions of this Agreement, Bellicum desires for MD Anderson to perform for Bellicum from time to time during the Term, and MD Anderson is willing to perform for Bellicum from time to time during the Term, pursuant to the terms and conditions set forth herein, certain Services as more particularly described in the Work Orders executed by the Parties in accordance with this Agreement;

WHEREAS, in order for MD Anderson to perform the Services, Bellicum will provide MD Anderson with certain Materials as more particularly described herein and in each Work Order; and

WHEREAS, Bellicum desires to engage MD Anderson to perform the Services, and MD Anderson desires to perform the Services, pursuant to the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants, terms, conditions, benefits and provisions hereof, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby confirm and agree as follows:

AGREEMENT

Section 1. OVERVIEW

1.1 The Services will be described in one or more work orders mutually agreed upon and executed by the Parties pursuant to this Agreement ("Work Orders") and are the subject of this Agreement. Each Work Order shall be in substantially the same form as the "Work Order Template," Exhibit B with such additions and deletions as the Parties may agree.

1.2 Each Work Order executed by the Parties, the schedules, exhibits and attachments referenced in each Work Order and the exhibits referenced in this Agreement are incorporated into this Agreement.

1.3 Other than as described in Section 8.12.F hereof, with regard to the APA, the Agreement shall control and govern all Services performed by MD Anderson under any Work Order. If there is a conflict or inconsistency between the provisions of this Agreement and any Work Order, the terms of the Work Order, including the schedules, exhibits and attachments referenced therein, shall be governed by the terms of this Agreement, unless an individual Work Order expressly and specifically notes the deviations from the terms of the Agreement and exhibits for the purposes of such Work Order in the "Deviations from Terms of Master Services Agreement" section of such Work Order. In the event of a conflict between the Agreement, a Work Order and any Quality Assurance Agreement, if applicable, the terms of the Quality Assurance Agreement shall control.

1.4 All capitalized terms used herein, including the exhibits, schedules and attachments hereto, shall have the meanings specified in the "Definitions," Exhibit A or elsewhere in the Agreement, as applicable, unless otherwise specified.

Section 2. SERVICES

2.1 **Services Generally**. During the Term and in accordance with this Agreement, MD Anderson agrees to provide certain Services, which shall include cell therapy Manufacturing and related activities, as described in Work Orders. MD Anderson and Bellicum have agreed that the scope of Services, including the Initial Supply Commitment and Expansion Option, will be limited to the Manufacture of all Current Bellicum Products and up to two (2) new pre-clinical or clinical stage products. In addition, if either the BPX-601 (within 9 months of the Effective Date) or BPX-603 (within 12 months of the Effective Date) is discontinued for clinical and/or regulatory reasons , Bellicum shall have the right to replace one (1) such discontinued product with another one (1) GoCAR-T product with similar Manufacturing and analytical processes (the "Product Swap"). If Bellicum exercises its right to the Product Swap, then the Parties will negotiate a technical transfer and process introduction plan to be paid by Bellicum at MD Anderson's fully loaded hourly rates. In addition, all engineering, training or qualification runs performed by MD Anderson in connection with such Product Swap shall count toward the Initial Supply Commitment.

2.2 **Initial Supply Commitment**. During the Term, the Parties agree that MD Anderson will Manufacture for Bellicum up to an aggregate of two hundred (200) doses of proprietary cell therapy products (each dose a "Patient Lot") in accordance with, and subject to, the applicable Work Order, provided that Bellicum has complied with all Bellicum Obligations (collectively, the "Initial Supply Commitment"). During the final six (6) months of the Term, no new Work Orders may be requested by Bellicum. For the avoidance of doubt, upon the earlier conclusion of the Term or fulfillment of the Initial Supply Commitment, MD Anderson shall no longer be obligated to perform Services unless otherwise provided in a Work Order, having no obligation to enter into such a Work Order.

2.3 **Delivery, Title and Risk of Loss**.

2.3.A All Deliverables delivered pursuant to any Work Order, including the Patient Lots, shall be Delivered by MD Anderson EX WORKS (Incoterms 2017). Title to and risk of loss with respect to any Patient Lot or other Deliverable shall pass from MD Anderson to Bellicum at the time such Patient Lot or other Deliverable is released to Bellicum, or Bellicum's carrier, provided that the foregoing shall not relieve MD Anderson of liability arising from MD Anderson's negligence or any failure to comply with its obligations with respect to the proper storage conditions and handling prior to the tender thereof to the carrier. Bellicum shall be responsible for transporting all Deliverables from the Facility to any Bellicum facility at Bellicum's sole cost and expense. MD Anderson will not be responsible for any transportation costs, materials, insurance, or otherwise related to the Deliverables.

2.3.B MD Anderson's responsibility with respect to the care, custody and control of the Materials shall not begin until the Materials have been physically unloaded from trailers and MD Anderson has begun receiving the Materials at the Facility, as evidenced by a duly authorized warehouse receipt.

2.4 **Bellicum Obligations**. For all Services, unless otherwise expressly agreed by the Parties in writing, Bellicum shall (1) pay for and deliver to MD Anderson at the Facility, or other location designated in a Work Order, all Materials in the amounts necessary to meet Bellicum's supply Forecast, (2) provide MD Anderson with all Specifications, including instructions for the Services for the Manufacture of the Deliverables, and ensure MD Anderson has the necessary information to allow MD Anderson to perform the Services in accordance with applicable Work Order and applicable QAA, (3) use commercially reasonable efforts to support MD Anderson in the performance of the Services including knowledge transfer and consultation as reasonably required by MD Anderson, at no charge to MD Anderson, (4) allow for any Lead-Time requirements provided in any Work Order or as otherwise agreed by the Parties, (5) be responsible for the expiration of any Materials, (6) provide MD Anderson a Forecast as described in the applicable Work Order and Section 2.9 below, (7) be responsible for all technology transfer, process Development,

validation or related implementation activities related to or necessary to perform the Services in accordance with the Work Order and Specifications, and (8) ensure all permits or licenses that are held or used by (or which have been filed or delivered by or on behalf of) Bellicum and required for the operation of the Facility or performance of the Services are transferred to MD Anderson including any such permits or licenses required by and in accordance with, the APA (collectively, the "Bellicum Obligations").

2.5 **Materials**. All Materials provided by Bellicum to MD Anderson for use in the Manufacture of Patient Lots shall (1) remain the sole property of Bellicum, (2) be used by MD Anderson only in carrying out its obligations under the Agreement and for no other purpose, (3) not be transferred by MD Anderson to any Third Party that is not specifically authorized in advance and in writing by Bellicum, and (4) unless exhausted in the course of performing the Services, be returned to Bellicum, upon Bellicum's request and at Bellicum's expense, at the expiration or termination of the Agreement or when no longer required to be used under the Agreement. After delivery, MD Anderson will be responsible for storing such Materials for the performance of the Services. Bellicum shall provide MD Anderson with, or ensure MD Anderson has possession of, current, correct and complete Material Safety Data Sheets ("MSD Sheets"), or, if a MSD Sheet is not applicable, then a safety summary sheet which outlines the storage and handling requirements and other characteristics only with respect to those Materials that can be reasonably hazardous in nature (*i.e.*, corrosive, toxic, ignitable, etc.) in order for MD Anderson to safely and properly store and handle such Materials. MD Anderson reserves the right to exclude Materials from the Facility (or require the immediate removal of such Materials) if MD Anderson reasonably determines that it does not have complete and correct information as required by this Section 2.5. Subject to Section 3.7, if Bellicum fails to remove the Materials, MD Anderson may dispose of such Materials in any lawful manner and shall incur no liability due to such disposition. Bellicum grants to MD Anderson a first priority lien upon, and security interest in and to, all Materials at any time deposited in the Facility or any warehouse owned or operated by MD Anderson and in all proceeds and/or products thereof. Such lien and security interest shall secure all fees and charges incurred with respect to Deliverables, whether or not such Deliverable is in MD Anderson's possession or has been Delivered.

2.6 **Standards**. MD Anderson shall perform the Services in accordance with: (1) the Work Order, (2) the Specifications, (3) the QAA, and (4) applicable Laws. MD Anderson will perform the Services in a professional and workmanlike manner consistent with industry standards applicable to the performance of such Services.

2.7 **Facility**. The Services will be performed at the facility located at 2130 W. Holcombe Boulevard, Houston, Texas 77030 (the "Facility"), unless otherwise specified in a Work Order.

2.7.A **Capacity**. During the Term and at no additional charge to Bellicum, MD Anderson agrees to dedicate capacity equivalent of up to two (2) biomanufacturing suites at the Facility as required, based upon Bellicum's Forecasts, for MD Anderson to meet the Initial Supply Commitment. In order to assure availability of the dedicated capacity, MD Anderson shall ensure that an appropriate biomanufacturing suite is available to Manufacture a Patient Lot, in accordance with a Work Order, within three (3) days after notification by Bellicum.

2.7.B **Expanded Capacity Option**. Bellicum shall have the option to request MD Anderson expand its total capacity described in Section 2.7A, as necessary to meet the capacity requirements of any existing Work Order, up to the equivalent of four (4) suites or two (2) ballrooms. MD Anderson shall allocate such additional capacity for Bellicum, provided (i) new Work Orders for such additional Services are executed by the Parties, (ii) Bellicum fully funds any required buildout for such expanded capacity and a reasonable period of time for such building is agreed upon, (iii) Bellicum agrees to pay for all Services performed in such additional space at market value pursuant to a mutually agreed upon Work Order; and (iv) MD Anderson has all necessary rights and permissions (Regental, landlord and otherwise) necessary or required to perform such buildout and provide such space, having no obligation to seek any rights or permissions not then presently available under any MD Anderson then-current real property lease for the Facility, (collectively, the "Expansion Option"). Following receipt of Bellicum's notice to exercise the Expansion Option, MD Anderson shall confirm that it has all appropriate rights and permissions for any necessary buildout of the space. Upon receipt of MD Anderson's confirmation, Bellicum shall pay MD Anderson an option fee of [***] U.S. dollars ($[***]) by wire transfer of immediately available funds to the account described in Section 7.2 hereof. For the avoidance of doubt, notwithstanding a successful exercise of the Expansion Option, upon conclusion of the Initial Term, or fulfillment of the Initial Supply Commitment, MD Anderson shall no longer be obligated to perform Services unless otherwise provided in a Work Order, having no obligation to enter into such a Work Order.

2.8 **Documentation**. MD Anderson shall maintain, and provide to Bellicum, records with respect to the Services and Deliverables in accordance with the QAA.

2.9 **Forecasts**.

2.9.A **Forecasts**. After the Initial Forecast and within the first three (3) Business Days of each month during the Term, Bellicum will provide MD Anderson with monthly rolling forecasts of Bellicum's anticipated Deliverable needs for the following six (6) calendar months (each, a "Forecast"). The first two (2) months of each Forecast will constitute a binding commitment on Bellicum to order the quantity of Deliverables forecasted for such period. For example, a Forecast provided in March will be binding for the months of March and April; accordingly, the Forecast provided in April, shall have the same April Deliverable commitment as provided in the March Forecast, but now the May Forecast will also be binding. However, for each binding month, Bellicum shall be permitted to vary the Forecasted Deliverable amount by up to the greater of 50% of the Deliverables ordered or one (1) Patient Lot. Projections for the non-binding period of each Forecast will constitute Bellicum's reasonable best estimates of future orders, but shall not be binding on Bellicum. To the extent that Bellicum does not order Deliverables consistent with the binding portion of a Forecast, the greater of the Forecasted amount (including the 50% variability described above) or the actual number of orders, will count towards the Initial Supply Commitment. If Bellicum orders more Deliverables than Forecasted (including the 50% variability described above), MD Anderson will use good faith efforts to meet such orders, but the fees charged by MD Anderson for such Services shall be increased by 50%. For the avoidance of doubt, the following example is for illustrative purposes: if the Forecast for June is four (4) orders of a specific Deliverable, but Bellicum only places two (2) orders of such Deliverable, these orders will be deemed within the accepted variability for such Forecasted amount. However, if Bellicum only places one (1) order of such Deliverable during this month, then Bellicum's order will not be deemed in compliance with the Forecasted amount and the four (4) Forecasted orders will count towards the Initial Supply Commitment. Similarly, if Bellicum places seven (7) orders within this month, then MD Anderson is only obligated to fulfill the six (6) orders which are within the accepted variability, but MD Anderson will use good faith efforts to fulfill the seventh (7th) order; however, such seventh (7th) order, if fulfilled, will be subject to a 50% increase in fees.

2.9.B **Forecast Timing**. Within thirty (30) days of the execution of the first Work Order, Bellicum shall submit to MD Anderson its initial Forecast for each Deliverable under such Work Order (the "Initial Forecast"). Unless otherwise agreed by the Parties, the first month of the Initial Forecast shall commence on the first day of the next calendar month. For all other Work Orders, Bellicum shall submit Forecasts to MD Anderson upon the Work Order effective date or as otherwise mutually agreed in such Work Order. Services shall not begin until after the date covered in the Forecast; provided MD Anderson has received the applicable Forecast prior to such date.

2.10 **Scheduling and Cancellations**.

2.10.A **Scheduling**. For each Patient Lot, Bellicum will notify MD Anderson when it becomes aware of the date on which a patient leukapheresis (the "Patient Apheresis") will occur as well as the arrival date at the Facility. Such notification will occur at least three (3) Business Days prior to arrival of Patient Apheresis at the Facility.

2.10.B **Cancellations**. If, following such initial notification, Bellicum determines that the Patient Apheresis will not be provided and the Patient Lot must be cancelled, Bellicum shall notify MD Anderson as soon as feasible. Upon such cancellation, Bellicum shall be responsible for reimbursement of any costs incurred by MD Anderson in preparation for such cancelled batch, excluding the costs of any Materials (so long as the Materials were provided by Bellicum). The first five (5) cancelled Patient Lots shall not be counted against the Initial Supply Commitment.

Section 3. PRODUCT ACCEPTANCE; DEFECTS; REMEDIES

3.1 **Acceptance of Patient Lots and Other Deliverables**. Bellicum shall examine, inspect and test each Patient Lot or other Deliverable Delivered under the Agreement as soon as practicable after receipt. Bellicum shall notify MD Anderson in writing of any Patient Lot or Deliverable that is Non-Conforming Product within twenty-one (21) calendar days after the date of Delivery ("Acceptance Period"). If such notice is not provided prior to the expiration of the Acceptance Period, the Patient Lot or other Deliverable shall be deemed accepted and to be in conformance with the Agreement.

3.2 **Acceptance of Materials**. MD Anderson shall have the right to examine, inspect and test each Material provided to MD Anderson under the Agreement. MD Anderson shall notify Bellicum in writing of any Material that does not comply with the Specifications for such Material, or meet the requirements described in Section 2.5, and may reasonably reject, or refuse acceptance of, any such Material.

3.3 **Non-Conforming Products**. MD Anderson will not release for Delivery any Non-Conforming Product. In addition, all Patient Lots that are Non-Conforming Products, for which such non-conformance is (a) due to a Process Inherent Issue, or (b) is not due to the negligence or fault of MD Anderson, shall count against the Initial Supply Commitment.

3.4 **Retesting**. In the event Bellicum rejects a Patient Lot or other Deliverable as Non-Conforming Product, MD Anderson shall have the right to sample and retest such Patient Lot or other Deliverable, which shall be done as soon as practicable and at MD Anderson's expense. In the event of a discrepancy between Bellicum's and MD Anderson's test results such that one Party's results fall within the Specifications and the other Party's test results fall outside the Specifications, or there exists a dispute over whether such failure is due (in whole or in part) to acts or omissions of Bellicum or any Third Party after Delivery, the Parties shall cause a testing laboratory agreeable to both Parties (cost split equally between the Parties, subject to reimbursement as set forth below) to perform comparative tests and/or analyses on samples of the alleged Non-Conforming Product. The testing laboratory's results shall be in writing and shall be final and binding save for manifest error on the face of its report. Unless otherwise agreed to by the Parties in writing, the costs associated with such testing and review shall be borne by the Party against whom the testing laboratory result finally rules and such Party shall reimburse to the other Party the costs advanced to the laboratory pursuant to the foregoing sentence. The testing laboratory shall be required to enter into written undertakings of confidentiality and non-use no less burdensome than set forth or referred to by this Agreement.

3.5 **Remediation**. If any Deliverable is considered Non-Conforming Product, MD Anderson shall, as promptly as reasonably possible, either: (a) remake or produce a new Deliverable, or (b) to the extent it is legally permitted and also reasonably practicable, rework or Reprocess the Patient Lot, so that the Patient Lot or Deliverable (x) can be deemed to have been Manufactured in compliance with cGMP and the agreed Batch Production Record, as applicable, and (y) conforms to the Specifications. The Parties shall agree, in good faith, on the timelines for such resupply or rework.

3.6 **Remediation Costs**.

3.6.A To the extent the non-conformance of any Non-Conforming Product is directly attributable to the negligence or fault of MD Anderson and is not attributable to a Process Inherent Issue, then such resupply or rework Services, as described in Section 3.5 (a) or (b), shall be performed at MD Anderson's cost and expense, including the cost of replacing the Materials. Alternatively, under such circumstances, rather than to have such resupply or rework Services, Bellicum may elect for MD Anderson to refund to Bellicum the amount paid by Bellicum for such Non-Conforming Product, or if payment has not already made, cancel the invoice for such order in which case MD Anderson shall only be responsible for compensating Bellicum for the cost of the Materials.

3.6.B For all Non-Conforming Products, to the extent such non-conformance is not directly attributable to the negligence or fault of MD Anderson, then all such resupply or rework Services as described in Section 3.5 (a) or (b) shall be pursuant to a new Work Order and such Services shall be performed at Bellicum's cost and expense, including the costs of the Materials.

3.7 **Destruction of Non-Conforming Products and Materials**. MD Anderson shall provide reasonable notice to Bellicum of MD Anderson's intent to destroy Non-Conforming Products or Materials (in accordance with Section 2.5) and shall destroy such products unless otherwise instructed by Bellicum in writing within ten (10) days of such notice. If requested by Bellicum within such timeframe, MD Anderson shall make such Non-Conforming Products or Materials available to Bellicum. Bellicum shall have the right to make further use of Non-Conforming Products or Materials for research and Development purposes only, provided that such use does not violate any applicable Laws and in no event is used in connection with human use. In the event that Bellicum desires the use of such Non-Conforming Products or Materials, Bellicum shall pay for any materials, supplies, labor and pass-through testing costs incurred by MD Anderson in connection with the Services related to such products. MD ANDERSON SHALL HAVE NO LIABILITY WHATSOEVER WITH RESPECT TO ANY NON¬CONFORMING PRODUCTS OR MATERIALS USED BY, OR AT THE DIRECTION OF BELLICUM SUBSEQUENT TO SUCH REJECTION.

Section 4. FAILURE TO SUPPLY

4.1 In the event MD Anderson is not able to supply, or reasonably anticipates that it will not be able to supply, any Services under any Work Order for any reason, including without limitation force majeure according to Section 11.8, MD Anderson shall (i) without undue delay provide a written notice (e-mail is sufficient) to Bellicum stating in reasonable detail the cause of such supply inability and the proposed remedial measures and the date such inability is expected to end, and (ii) use commercially reasonable efforts to supply such Services as soon as practicable. The Parties will discuss in good faith all appropriate means of resolving such supply problems.

4.2 In the event that MD Anderson is unable to Manufacture and release three (3) consecutive Patient Lots of the same Deliverable or a total of six (6) Patient Lots of the same Deliverable in any rolling twelve (12) month period as required under a Work Order (excluding, in both circumstances, any Deliverables impacted by Process Inherent Issues), provided all Bellicum Obligations have been successfully met including timely delivery of the Materials to MD Anderson, then a supply interruption shall be deemed to have occurred ("Supply Interruption"). Provided that such Supply Interruption is not (a) caused by force majeure according to Section 11.8, (b) due to the fault of Bellicum or any Third Party, or (c) due to any Process Inherent Issue, a supply failure shall be deemed to have occurred ("Supply Failure"). In the event of a Supply Failure, MD Anderson shall, within sixty (60) calendar days from the beginning of the Supply Failure, prepare an action plan setting forth a proposal to determine the root cause of the Supply Failure and the corrective actions to be taken (the "Action Plan"). The Action Plan shall then be presented to the JSC within such sixty (60) day period. The JSC may accept, modify or reject such Action Plan. In the event the JSC cannot agree upon the proposed (or modified) Action Plan within fourteen (14) days, the matter shall be escalated to the senior management of the Parties in accordance with Section 10.2. If senior management, acting in good faith, cannot agree on an Action Plan within forty-five (45) days from the date of its referral to senior management, then MD Anderson shall have the right to terminate this Agreement upon fifteen (15) days notice.

4.3 Upon determination that a Supply Failure has occurred and is incapable of being cured within sixty (60) days from the date it is deemed a Supply Failure, the Term of such applicable Work Order, as it related to such specific Deliverable, shall be automatically extended for the length of such Supply Failure (unless otherwise terminated in accordance with Section 4.2). For the avoidance of doubt, the length of the Supply Failure arising from the failure to Manufacture and release three (3) consecutive Patient Lots of the same Deliverable, shall commence on the date of the first failed Patient Lot and conclude on the successful implementation of the Action Plan, and the length of the Supply Failure arising from the failure to Manufacture and release a total of six (6) Patient Lots of the same Deliverable in any rolling twelve (12) month period, shall commence on the date of the last failed Patient Lot and conclude on the successful implementation of the Action Plan.

Section 5. QUALITY AND REGULATORY MATTERS

5.1 **Quality Assurance Agreement**. The Parties shall enter into a "Quality Assurance Agreement" ("QAA") no later than seven (7) calendar days before the start of any Work Order for Manufacturing of any Deliverable. The QAA shall set forth the Parties' rights and obligations with regard to quality management, quality assurance, quality control, responsibilities of the Parties, documentation, product release procedure including the language of such documentation, regulatory items such as audits and inspections. Upon execution, the QAA for Patient Lots shall be deemed to be incorporated herein as Exhibit C.

5.2 **Process Changes**. Changes to the Existing Process, Services, or Specifications, including changes to any Materials used to Manufacture the Patient Lots or other Deliverable, may only be made in accordance with the QAA. Actual costs incurred as a result of changes will be allocated as follows:

5.2.A MD Anderson shall solely bear all of its actual and related costs resulting from:

(i) Changes to the Facility (including but not limited to changes related to Facility safety) requested by MD Anderson; and

(ii) Changes requested or required by the Governmental Authorities relating to the Facility, and all investments related to the establishment, maintenance and improvement of cGMP.

5.2.B Bellicum shall solely bear all actual and related costs of Bellicum and MD Anderson resulting from:

(i) Changes to the Existing Processes or Services requested by Bellicum, including any changes to the Manufacturing process, Specifications, Materials used to Manufacture the Patient Lots or other Deliverable;

(ii) Changes requested or required by the Governmental Authorities relating to the Existing Process, Services, or Manufacturing process used to Manufacture the Patient Lots or other Deliverable;

(iii) Any technology transfer from a supplier of Materials to another supplier or to MD Anderson (such as, but not limited to, the purchase of any necessary Manufacturing equipment and Manufacturing licenses) to the extent such transfer is authorized by Bellicum.

5.3 **Technical Site Visits by Bellicum (Audits, Person-in-Plant)**

5.3.A **Audits**. In accordance with the terms of the QAA, Bellicum shall be entitled annually to one (1) visit with up to two (2) persons for up to two (2) days to audit the parts of the Facility ("Audit"). Notwithstanding the foregoing, "for-cause" audits may be conducted as described in the QAA.

5.3.B During each audit, Bellicum may inspect corresponding documents (including records) that specifically relate to Manufacturing, quality control, storage, release, complaint/deviation investigations and cGMP activities performed by MD Anderson as related specifically to this Agreement. The right of audit provided herein does not include a right to access or inspect MD Anderson's financial records.

5.3.C In addition to the authorized Audits, in accordance with the terms of the QAA and with at least thirty (30) days advance written notice to MD Anderson, Bellicum shall have the right, at its sole risk and expense, to have one (1) Bellicum employee or agent of Bellicum, who shall be approved by MD Anderson, at the Facility ("Person-in-Plant" or "PIP") during core business hours to observe the production activities and provide support as the single point of contact for such activities.

(i) MD Anderson shall provide adequate office space for the PIP, including access to outside internet connection, and ensure that the PIP is kept reasonably informed of issues that arise that may affect the production or quality of Bellicum product.

5.3.D If an unplanned deviation or other issue arises that reasonably requires the PIP to have access to the Manufacturing facility or QC laboratory, MD Anderson shall grant the PIP reasonable access to those parts of the Facility as needed to evaluate, assess and confirm the satisfactory resolution of such issue.

5.3.E While on MD Anderson's premises, Bellicum shall cause its auditors and PIPs to (i) abide by all applicable Laws, confidentiality obligations to Third Parties and MD Anderson's rules and policies governing its premises, safety and security practices and operating procedures, and (ii) comply with all reasonable instructions of MD Anderson's employees regarding safety and compliance within the premises and the overall use of MD Anderson's premises and equipment, and (iii) operate in a manner as not to adversely interfere with operations at the Facility. Bellicum shall be solely responsible for the payment and provision to each such auditor and PIP of all compensation and employee benefits, and the withholding and payment of applicable taxes relating to such employment or engagement.

Section 6. TERM OF AGREEMENT

6.1 The initial term of the Agreement will commence on the Effective Date and continue for a period of three (3) years, unless sooner canceled, terminated or extended in accordance with the provisions of this Agreement, including all exhibits attached to and incorporated into this Agreement by this reference thereto (the "Initial Term").

6.1.A Upon implementation of the Expansion Option, the Initial Term shall be extended through (a) the date that is three (3) years from the start of the Expansion Option, or (b) June 30, 2025, whichever comes first (the "Extended Term") (the Initial Term and the Extended Term may be referred herein as the "Term"). In no event shall the Term extend beyond June 30, 2025.

6.2 MD Anderson may suspend the Services performed under the Agreement with immediate effect if at any time MD Anderson reasonably believes, in its sole and absolute discretion, that (a) Bellicum or the Services has a material adverse effect upon MD Anderson, its patients, or personnel; (b) Bellicum or the Services are compromising MD Anderson's established standards of care or performance; (c) the Services do not comply with any Laws of any Government Authority or Regulatory Authority having jurisdiction over the Services; (d) any of the representations

or warranties of Bellicum set forth in the Agreement are incomplete, incorrect or inaccurate in any material respect as of any date; (e) any insurance coverage for Bellicum that is required by the Agreement is not in place; (f) Bellicum materially breaches the Agreement; or (g) Bellicum fails to make any payment when due as described in Section 7.2. MD Anderson shall provide Bellicum thirty (30) days' written notice of such suspension and its rationale and Bellicum shall have the opportunity to cure, if curable, any such issues within that time period unless otherwise extended by written agreement of the Parties. If not cured to MD Anderson's reasonable satisfaction, MD Anderson may terminate the Agreement and shall send Bellicum a written notice of termination which will specify the basis for termination and the effective date of the termination ("Termination Date") (collectively a "Notice of Termination"). In addition, MD Anderson shall have the right to terminate this Agreement and all Services in accordance with Section 4.2.

6.3 Bellicum may terminate the Agreement with immediate effect (i) if any of MD Anderson's representations or warranties set forth in the Agreement are incomplete, incorrect or inaccurate in any material respect as such applicable date, and MD Anderson fails to cure such inaccuracies within 30 days of written notice of such; (ii) the Services do not comply with any Laws of an applicable Governmental Authority or Regulatory Authority having jurisdiction over the Services and MD Anderson fails to cure such noncompliance within 30 days of written notice of such; (iii) upon the occurrence of a material breach of the Agreement by MD Anderson and MD Anderson fails to cure such breach within 30 days of written notice of such; or (iv) a Supply Failure that is not cured within sixty (60) days of written notice of such, or other timeframe as provided for in a JSC-approved action plan. In order for the termination to be effective, Bellicum shall send MD Anderson a Notice of Termination specifying the basis for termination and the Termination Date.

6.4 Either Party may terminate a Work Order at any time and for any reason whatsoever upon thirty (30) days' written notice to the other Party; provided, however, MD Anderson shall not be permitted to terminate any open Work Order related to the Initial Supply Commitment during the Initial Term except in accordance with Section 6.2 above. The Party terminating the Work Order will send the other Party a Notice of Termination which will specify the basis for termination and the effective date of the termination ("Work Order Termination Date"). Termination of a Work Order will not affect any other Work Order pursuant to this Agreement. Neither Party hereto shall by the termination of a Work Order be relieved of its respective obligation and liabilities in any way arising out of or related to the Services performed under such Work Order prior to the Work Order Termination Date, including the payment of all reasonable costs, fees and expenses incurred by a Party which are directly attributable to any termination for convenience by the other.

6.5 Neither Party hereto shall by the expiration or termination of the Agreement be relieved of its respective obligations and liabilities in any way arising out of or related to the Services performed prior to the Termination Date, including but not limited to the payment by Bellicum to MD Anderson of all reasonable costs, fees and expenses incurred by MD Anderson related to such Services. In addition, in the event the Services are terminated by MD Anderson, Bellicum agrees to pay MD Anderson for all Services completed up through the Work Order Termination Date, any non-cancellable expenses (such as supplies or materials purchased based upon Bellicum's Forecasts, or costs associated with the Expansion Option) and any costs which are directly attributable to any termination by Bellicum. Upon the receipt of a Notice of Termination from Bellicum, MD Anderson should immediately begin to orderly and efficiently wind down the Services to mitigate the fees and expenses paid by Bellicum for the wind down.

6.6 The terms and provisions contained in the Agreement that by their sense and context are intended to survive the performance thereof by either or both Parties shall so survive the completion of performance and termination or expiration of the Agreement, including without limitation, the payment obligations, indemnity obligations, confidentiality provisions and limitations of liability set forth herein.

Section 7. FEES, COSTS, EXPENSES, TAXES, CONSIDERATION AND INVOICING

7.1 For each Patient Lot ordered within the Initial Supply Commitment, Bellicum shall pay MD Anderson the fees described in the applicable Work Order which shall, at a minimum, cover all actual costs to MD Anderson in performing the Services set forth in such Work Order, including but not limited to costs for supplies and consumables (other than the Materials), pass-through expenses, and labor costs. For the avoidance of doubt and unless otherwise specified herein or agreed upon by the Parties, MD Anderson shall not be required to incur any out-of-pocket expenses in performing the Services. For Patient Lots that exceed the Initial Supply Commitment, the Parties agree to negotiate in good faith pricing that appropriately compensates MD Anderson for its performance of such Services, which shall be stated in the applicable Work Order.

7.2 MD Anderson will be compensated for the Services in accordance with the fee schedule set forth in each Work Order or as described herein. Within thirty (30) days from receipt of an invoice, Bellicum shall pay MD Anderson in immediately available funds by wire or electronic fund transfer for all undisputed amounts in each invoice. If Bellicum disputes, in good faith, all or a portion of the charges in an invoice, it shall notify MD Anderson that it disputes certain or all charges in the invoice within 30 days of receipt. For all disputed invoice amounts, the Parties shall seek to resolve the dispute pursuant to the process set forth in Section 11.10 of this Agreement. For any undisputed amounts not paid within 30 days, MD Anderson may charge interest on the past due and undisputed amount at a rate not in excess of the lesser of (a) the "Prime Rate" published in the Wall Street Journal, from time to time, plus one percent (1%), or (b) the maximum rate permitted by law, and Bellicum shall pay all reasonable attorney fees and costs of MD Anderson in enforcing collection of such undisputed amounts owing under the Agreement. All invoices shall be wired to the following account unless otherwise identified in writing by MD Anderson:

JPMorgan Chase Bank, N.A.
707 Travis Street
Houston, Texas 77002

SWIFT:	**CHASUS33** (used for international wires)
ABA ROUTING NO.:	**021000021** (used for domestic wires)
ABA ROUTING NO.:	**111000614** (used for domestic Automatic Clearing House)
ACCOUNT NAME:	**The University of Texas M. D. Anderson Cancer Center**
ACCOUNT NO.:	**1586838979**
REFERENCE:	*Note: Please specify the contract or invoice number and the chartfield number, 710928-30-122140-46.*

The MD Anderson Treasury Services and Operations Department may be contacted at (713) 745-9580 or treasuryservices@mdanderson.org for assistance.

7.3 Taxes. Bellicum shall be responsible for any taxes, duties and charges currently assessed or which may be assessed in the future, that are applicable to the Materials, whether stored at the Facility or otherwise.

Section 8. REPRESENTATIONS, WARRANTIES, LIABILITY AND INDEMNIFICATION

8.1 Bellicum represents, warrants and covenants to MD Anderson that on and as of the date hereof:

8.1.A It is duly formed, validly existing and in good standing under the laws of its state of jurisdiction or formation, with power and authority to carry on the business in which it is engaged and to perform its respective obligations under the Agreement.

8.1.B The execution and delivery of the Agreement by it have been duly authorized and approved by all requisite corporate, limited liability company, partnership, or similar action.

8.1.C It has all the requisite corporate, limited liability company, partnership, or similar power and authority to enter into the Agreement and perform its obligations hereunder.

8.1.D The execution and delivery of the Agreement does not, and consummation of the transactions contemplated herein will not, violate any of the provisions of organizational documents, any agreements pursuant to which it or its property is bound, or, to its knowledge, any applicable laws.

8.1.E The Agreement is valid, binding, and enforceable against it in accordance with its terms subject to bankruptcy, moratorium, insolvency, and other laws generally affecting creditors' rights and general principles of equity (whether applied in a proceeding in a court of law or equity), and the Constitution and laws of the State of Texas;

8.1.F It is qualified to do business in the State of Texas;

8.1.G The Materials delivered to MD Anderson pursuant to the Agreement will, at the time of such delivery, be free and clear of all liens;

8.1.H The Specifications are accurate and complete and includes all instructions and information necessary for MD Anderson to perform the Services; and

8.1.I Any transportation provider or carrier of the Materials or Deliverable has represented and covenanted that it has Business Auto Liability Insurance covering all owned, non-owned or hired automobiles, with limits of not less than $1,000,000 single limit of liability per accident for Bodily Injury and Property Damage.

8.2 MD Anderson represents, warrants and covenants to Bellicum that on and as of the date hereof:

8.2.A MD Anderson has the full power and authority to execute and deliver this Agreement and to perform its obligations under this Agreement (not including the Expansion Option). The execution and delivery by MD Anderson of this Agreement to be executed and delivered by it, the performance by MD Anderson of its obligations hereunder and the consummation by MD Anderson of the transactions contemplated hereby have been duly and validly authorized. The Agreement is, when executed and delivered by the Parties thereto, the valid and binding obligation of MD Anderson, enforceable against MD Anderson in accordance with its terms;

8.2.B The execution, delivery and performance by MD Anderson of this Agreement, and the consummation of the transactions contemplated hereby, do not conflict with or result in a violation or breach of any provision of any Law or Governmental Order applicable to MD Anderson.

8.2.C To MD Anderson's knowledge, MD Anderson is not under investigation with respect to any violation of any Laws that prevent its performance of the Services.

8.2.D To MD Anderson's knowledge the performance of the Services by MD Anderson complies with all applicable Laws of a Governmental or Regulatory Authority having proper jurisdiction.

8.3 Bellicum warrants, represents, covenants, and agrees that it has all permits, licenses, and approvals required for it to request and receive the Services and has and will otherwise comply with all Laws of all Governmental Authorities and Regulatory Authorities that are now or may, in the future, become applicable to Bellicum, Bellicum's business, equipment, and personnel engaged in Bellicum's business, Bellicum's receipt of the Services or its performance under the Agreement, or arising out of or incident to such performance. Bellicum will perform its obligations under the Agreement in compliance with applicable Laws. To Bellicum's knowledge, Bellicum is not under investigation with respect to any violation of applicable Laws and there are no facts or circumstances that could form the basis for any such violation. Without limiting the generality of foregoing, no bribes, kickbacks, illegal payments, illegal political contributions, or other inappropriate payments, legal or illegal, have been made, directly or indirectly by or on behalf of Bellicum to obtain or retain business, and Bellicum is and has been in compliance with all legal requirements under local anti-corruption and bribery laws, in each case, in jurisdictions in which Bellicum is operating or conducting business (collectively, the "Anti-Bribery Laws"). Bellicum has not received any communication that alleges that Bellicum or any agent of Bellicum is not or may not be in compliance with, or has or may have any liability under, Anti-Bribery Laws. All reports, returns, statements, documents, registrations, filings, and submissions, which are required to be filed with any Governmental Authority relating to Bellicum and Bellicum's business, have been duly and timely filed.

8.4 Bellicum warrants, represents, covenants, and agrees that all information and Materials provided by Bellicum to MD Anderson in connection with the Services to be performed shall be de-identified and aggregated so as to conceal all Protected Health Information ("PHI") as that term is defined in the Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

8.5 Bellicum warrants, represents, covenants, and agrees that the Materials, Specifications and any other processes or instructions provided to MD Anderson by or on behalf of Bellicum ("Covered Resources") and MD Anderson's use thereof (or access or exercise of any other rights granted under the Agreement with respect to such Covered Resources), and related to performance of the Services, and the MD Anderson's receipt thereof, do not and shall not infringe or misappropriate the Intellectual Property rights of any Third Party, or otherwise conflict with the rights of any Third Party.

8.6 Bellicum warrants, represents, covenants, and agrees that the licenses granted by Bellicum to MD Anderson in Section 9.6.B are the only licenses necessary for MD Anderson to use the Covered Resources in accordance with this Agreement.

8.7 Bellicum warrants, represents, covenants, and agrees that it has disclosed, and will continue to disclose, to MD Anderson, prior to tendering of any Materials to the Facility, any and all potential health, safety and/or environmental hazards that may be associated with transportation, storage or handling of the materials.

8.8 Each Party warrants, represents, covenants, and agrees that: (i) it is not excluded from participation under any state or federal health care program , as defined in 42 U.S.C. §1320a-7b(f), or listed in the U.S. System for Award Management's ("SAM") List of Parties Excluded From Federal Procurement or Non-Procurement Programs, or the United States Office of Inspector General's List of Excluded Individuals/Entities ("LEIE"); and (ii) no final adverse action, as such term is defined under 42 U.S.C. Section 1320a-7e(g), has occurred or is pending or threatened against it (collectively "Excluded/Adverse Actions"). Each Party shall notify the other Party of any Excluded/Adverse Actions or any basis therefore within two (2) days of the notifying Party learning of any such Excluded/Adverse Action or any basis therefore. If a Party is excluded from a state or federal health care program, the other Party may, in addition to any other remedies it may have, immediately terminate the Agreement.

8.9 Each Party shall promptly notify the other Party, in writing, as soon as it becomes aware of any condition or circumstance which makes any of the representations or warranties set forth in the Agreement incomplete, incorrect or inaccurate in any material respect as of any date.

8.10 **MD ANDERSON HAS NOT MADE AND DOES NOT MAKE ANY WARRANTY OR REPRESENTATION WHATSOEVER, EITHER EXPRESS OR IMPLIED, AS TO THE FITNESS, CONDITION, MERCHANTABILITY, DESIGN, OR OPERATION OF THE SERVICES, THEIR FITNESS FOR ANY PARTICULAR PURPOSE, THE QUALITY OR CAPACITY OF THE SERVICES OR WORKMANSHIP IN THE SERVICES, NOR ANY OTHER REPRESENTATION OR WARRANTY WHATSOEVER; BELLICUM ASSUMES ALL RISK AND LIABILITY RESULTING FROM THE USE OF THE SERVICES, INCLUDING RISKS OF DAMAGES, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER PRODUCTS, MATERIALS, OR PERSONAL PROPERTY.**

8.11 **EXCEPT AS PROVIDED FOR IN THE AGREEMENT, IN NO EVENT SHALL MD ANDERSON BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE, OR LIABILITY, OF WHATSOEVER KIND OR NATURE, REGARDLESS OF THE LEGAL THEORY ASSERTED (INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR ANY TORT CLAIM), WHICH MAY ARISE FROM OR IN CONNECTION WITH THE AGREEMENT, THE PRESENCE OF PIPS, OBSERVERS, AUDITORS OR OTHER PERSONS ON MD ANDERSON PREMISES OR THE USE, HANDLING OR STORAGE OF MATERIALS, DROP-SHIPPED MATERIALS OR THE SERVICES. NOTWITHSTANDING ANY OTHER PROVISION CONTAINED HEREIN, BELLICUM HEREBY RELEASES MD ANDERSON, SYSTEM, ITS REGENTS, AND THE OFFICERS, AGENTS, AND EMPLOYEES OF MD ANDERSON AND SYSTEM FROM ANY AND ALL LIABILITIES, LOSSES, CLAIMS, OR DAMAGES INCURRED IN CONNECTION WITH THE SERVICES AND THE AGREEMENT.**

8.12 Indemnification.

8.12.A Indemnification by Bellicum. Subject to the other terms and conditions of this Section 8, Bellicum shall indemnify, defend and hold harmless each of MD Anderson, its Affiliates, and each of their respective Regents directors, managers, officers, employees, partners, contractors or agents (collectively, the "MD Anderson Indemnitees") from and against all Losses incurred or sustained by, or imposed upon, any of the MD Anderson Indemnitees or that any of the MD Anderson Indemnitees may incur, as a result of, based upon, arising out of, with respect to, or by reason of, any one or more of the following: (a) any inaccuracy in, or breach of, any of the representations or warranties of Bellicum contained in the Agreement, or in any certificate or instrument delivered by or on behalf of Bellicum pursuant to the Agreement; (b) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by Bellicum pursuant to the Agreement, or any certificate or instrument delivered by or on behalf of Bellicum pursuant to the Agreement; (c) any fraud, willful misconduct or criminal acts of Bellicum, its Affiliates, or any of the respective Representatives of either, (d) any allegations that the Covered Resources, MD Anderson's use thereof (or access or exercise of any other rights granted under the Agreement with respect to such Covered Resources), or the Services, infringe or violate the Intellectual Property rights of any Third Party, (e) MD Anderson's performance of the Services in accordance with the Agreement; or (f) the presence of any Bellicum auditors, PIPs or any other Persons authorized or requested by Bellicum, at the Facility or at any other premises owned, leased or operated by MD Anderson; except to the extent any Losses described in (a) through (f) are directly attributable to the gross negligence or willful malfeasance of MD Anderson.

8.12.B Indemnification by MD Anderson. Subject to the Laws and Constitution of the State of Texas and subject to the statutory duties of the Texas State Attorney General, MD Anderson shall defend, indemnify, and hold harmless Bellicum and its Affiliates, and each of their respective their respective directors, managers,

officers, employees, partners, contractors or agents (collectively, the "Bellicum Indemnitees") from and against all Losses, and defend Bellicum Indemnitees from all claims, demands, suits, actions or other proceedings, as a result of, based upon, arising out of, with respect to or by reason of any one or more of the following: (a) any inaccuracy in or breach of any of the representations or warranties of MD Anderson contained in the Agreement, or in any certificate or instrument delivered by or on behalf of MD Anderson pursuant to the Agreement; (b) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by MD Anderson pursuant to the Agreement; or (c) any fraud, willful misconduct or criminal acts of MD Anderson; except to the extent any Losses described in (a) through (c) are directly attributable to the gross negligence or willful malfeasance of Bellicum

8.12.C Whenever any Actions shall arise for indemnification under this Section 8 (an "Indemnification Claim"), the MD Anderson Indemnitee or the Bellicum Indemnitee, as applicable (the "Indemnified Party"), shall promptly provide written notice of the Indemnification Claim to the other party (the "Indemnifying Party"), but in any event not later than thirty (30) days after the Indemnified Party becomes aware of the Indemnification Claim; *provided* that failure to timely give such written notice shall not relieve the Indemnifying Party of its indemnification obligations except and only to the extent that the Indemnifying Party is required to forfeit rights or defenses by reason of such failure. Such notice shall describe the Indemnification Claim in reasonable detail, shall include copies of all available material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party.

8.12.D If Bellicum is the Indemnifying Party, it shall not be entitled to participate in the defense of any MD Anderson Indemnitee with respect to any Indemnification Claim, and will have no right to defend any MD Anderson Indemnitee against the Indemnification Claim. With respect to a Indemnification Claim arising under Section 8.12.A, the MD Anderson Indemnitees will, together with the Attorney General of the State of Texas, undertake the defense, compromise or settlement of each Indemnification Claim on behalf of and for the account and risk of Bellicum as the Indemnifying Party; *provided, however,* that no Indemnification Claim shall be compromised or settled without concurrent notice to the Indemnifying Party. Notwithstanding anything to the contrary in this Section 8.12, if the Indemnifying Party is a party to Indemnification Claim, the Indemnifying Party shall be entitled to conduct its own defense of such Indemnification Claim, but not the defense of any MD Anderson Indemnitee concerning such Indemnification Claim. No action taken by any MD Anderson Indemnitee in accordance with such defense and settlement shall relieve the Indemnifying Party of its indemnification obligations herein provided with respect to any damages resulting therefrom.

8.12.E The Indemnifying Party shall cooperate in all commercially reasonable respects with the Indemnified Party and the Attorney General of the State of Texas (as applicable) in the investigation, trial and defense of any Action that may be subject to this Section 8.12 and any appeal arising therefrom. The Parties shall cooperate with each other in any notifications to insurers. The Indemnifying Party shall assist and cooperate, at the cost of the Indemnifying Party, with the Indemnified Party in the making of settlements and the enforcement of any right of contribution to which any Indemnified Party may be entitled from any Person in connection with the subject matter of any litigation subject to indemnification hereunder.

8.12.F Bellicum and MD Anderson acknowledge and agree that the APA, including, but not limited to, its Section 2 and Section 7, provides an independent indemnification remedy and procedure that is in addition to, and not superseded by, that provided by this Section 8. Further, nothing in this Section 8 shall limit MD Anderson's right to seek any equitable relief to which MD Anderson seeks hereunder or to seek any remedy on account of Bellicum's criminal, intentional, fraudulent or willful misconduct.

Section 9. COVENANTS

9.1 **Confidentiality:** During the Term of the Agreement and for a period of two (2) years thereafter, neither Party will at any time, except as required to perform the Services or as authorized in writing by the Party disclosing information ("Disclosing Party"), supply, disclose, use, or otherwise permit access to any information, in whole or in part, that the other Party ("Receiving Party") may acquire by reason of its performance under the Agreement and that concerns or in any way relates to the Disclosing Party, its Affiliates, and their respective regents, directors, officers, employees, or agents, including, without limitation, any information, data, or records pertaining to MD Anderson's faculty, staff, patients, business, or financial affairs, the Services, and MD Anderson's manufacturing processes ("Confidential Information"). The obligations in this Section 9.1 shall not apply to any Confidential Information that (i) is rightfully already in the Receiving Party's possession at the time of disclosure by Disclosing Party, (ii) is or later becomes part of the public domain through no fault of Receiving Party, (iii) is received from a Third Party having no obligations

of confidentiality to Disclosing Party, (iv) is independently developed by Receiving Party without use of the Confidential Information, or (v) is required by law to be disclosed, provided that (a) Receiving Party provides Disclosing Party prompt written notice before any such disclosure so that it may seek a protective order or other appropriate remedy and (b) Receiving Party complies with any such protective order (or equivalent) imposed on such disclosure. In the event that a protective order or other remedy is not obtained, Receiving Party shall furnish only that portion of the Confidential Information that is legally required to be disclosed in the opinion of Receiving Party's legal counsel. Within ten (10) Business Days after the termination of the Agreement or the request of Disclosing Party, Receiving Party will return or destroy all Confidential Information. Upon Request, Receiving Party shall provide written confirmation, signed by an officer or other authorized representative of Receiving Party, that all such Confidential Information has been destroyed or deleted as required herein. Notwithstanding anything to the contrary herein, (a) Receiving Party shall be permitted to retain one copy of any Confidential Information for legal or regulatory compliance purposes, and (b) Receiving Party shall not be required to alter or destroy backup tapes or other media containing Confidential Information made in the ordinary course of business pursuant to automated archival processes; *provided*, *however,* that any Confidential Information retained shall be kept confidential subject to the confidentiality obligations set forth herein. Without prejudice to the rights and remedies otherwise available to the Parties under the Agreement, the Parties shall be entitled to seek equitable relief by way of injunction if the other Party breaches or threatens to breach any of the provisions of this Section 9.1, without the necessity of posting bond or other security. The provisions of this Section 9.1 shall expressly survive the termination of the Agreement. The Receiving Party will use the same measures to protect Disclosing Party's Confidential Information as it uses to protect its own information of a similar nature. Receiving Party will use at least a reasonable standard of care.

9.2 **Public Information:** The Agreement and related information may be subject to public disclosure under Chapter 552, *Texas Government Code*. Bellicum shall be deemed to have knowledge of this law and the means of protecting Bellicum's legitimate interests. Bellicum represents, warrants and agrees that the Agreement can be terminated if Bellicum knowingly or intentionally fails to comply with a requirement of Subchapter J, Chapter 552, *Texas Government Code*. MD Anderson strictly adheres to all statutes, court decisions and the opinions of the Texas Attorney General with respect to disclosure of public information under the Texas Public Information Act (TPIA), Chapter 552, *Texas Government Code*. In accordance with §§552.002 and 2252.907, *Texas Government Code*, and at no additional charge to MD Anderson, Bellicum will make any information created or exchanged with MD Anderson pursuant to the Agreement (and not otherwise exempt from disclosure under TPIA) available in a format reasonably requested by MD Anderson that is accessible by the public.

9.3 **Publicity:** Unless otherwise required by applicable Law or the rules and regulations of any national stock exchange on which the securities of Bellicum are listed, no Party shall make any public announcements in respect of the Agreement or the transactions contemplated hereby or otherwise communicate with any news media without the prior written consent of the other Party, provided that Buyer strictly adheres to all statutes, court decisions and the opinions of the Texas Attorney General with respect to disclosure of public information under the Texas Public Information Act, Chapter 552, Texas Government Code, and that the press statement set forth on Exhibit I to the APA is otherwise hereby preapproved for dissemination. Further, Bellicum will not state or imply that MD Anderson endorses any of Bellicum's products or services. All materials utilizing the name, trademarks, service marks, or symbols of MD Anderson or The University of Texas for any purpose, including, but not limited to, the use in advertising, marketing, and sales promotion materials or any other materials or mediums (such as the internet, domain names, or URL addresses), must be submitted to MD Anderson's Chief Legal Officer for prior written approval at the following address:

Mailing Address: (Via U.S. Mail)

The University of Texas M. D. Anderson Cancer Center

ATTN: Chief Legal Officer

7007 Bertner Ave.

Houston, Texas 77030

9.4 **Compliance with Laws, Regulations and Policies:** MD Anderson and Bellicum will cooperate fully in meeting any obligations imposed upon MD Anderson or Bellicum by any Governmental Authority with respect to the Services performed under the terms of the Agreement. This obligation will specifically include, but not be limited to, compliance with the Health Insurance Portability and Accountability Act. Bellicum (and its representatives, agents,

employees, and permitted subcontractors) will comply with all applicable MD Anderson rules and policies, including, without limitation, those related to environmental quality, safety, fire prevention, noise, information security, and architectural barriers issued by MD Anderson's Department of Environmental Health and Safety, and those that restrict the use of alcohol on MD Anderson's campus. In the event Bellicum is granted physical access to MD Anderson's assets or facilities, Bellicum shall do so at its sole risk and expense.

9.5 **Insurance:**

9.5.A During the Term of the Agreement, Bellicum will carry at least the following insurance, with companies authorized to conduct the business of insurance in the State of Texas having an A.M. Best Rating of A-VII or better, and in amounts not less than the following minimum limits of coverage:

(i) Workers' compensation insurance, with statutory limits as required by the various laws applicable to Bellicum's employees and subcontractors;

(ii) Commercial General Liability Insurance with limits of not less than:

(a) Each Occurrence Limit $1,000,000

(b) Personal & Advertising Injury $1,000,000

(c) General Aggregate $2,000,000

(d) Products - Completed Operations Aggregate $2,000,000

The required Commercial General Liability policy will be issued on a form that insures Bellicum's liability for bodily injury (including death), property damage, personal and advertising injury assumed under the terms of the Agreement. To the extent Bellicum's Commercial General Liability Insurance is written on a claims-made basis, Bellicum shall purchase an extended reporting period endorsement effective for twenty-four (24) months after the expiration or cancellation of the policy;

(iii) MD Anderson is governed by the Texas Tort Claims Act, which sets forth certain limitations and restrictions on the types of liability and the types of insurance coverage that can be required of MD Anderson.

9.5.B Bellicum will deliver to MD Anderson evidence of insurance on a Texas Department of Insurance approved certificate form verifying the existence and actual limits of all required insurance policies after the execution and delivery of this Agreement. Additional evidence of insurance will be provided verifying the continued existence of all required insurance no later than thirty (30) days after each annual insurance policy renewal. All insurance policies will be endorsed and name MD Anderson and The Board of Regents of the University of Texas System (the "Board") as Additional Insureds for liability caused in whole or in part by Bellicum's acts or omissions with respect to its on-going and completed operations up to the actual liability limits of the required insurance policies maintained by Bellicum. Commercial General Liability will provide Additional Insured endorsement including ongoing and completed operations coverage will be submitted with the Certificates of Insurance. Commercial General Liability will be endorsed to provide primary and non-contributory coverage. Bellicum hereby waives all rights of subrogation against MD Anderson. All insurance policies will be endorsed to provide a waiver of subrogation in favor of MD Anderson. No policy will be canceled until after thirty (30) days' unconditional written notice to MD Anderson. All insurance policies will be endorsed to require the insurance carrier providing coverage to send notice to MD Anderson thirty (30) days prior to any cancellation, material change, or non-renewal relating to any insurance policy required in this Section 9.5. Bellicum will pay any deductible for any loss. All deductibles will be shown on the Certificates of Insurance. Bellicum's insurance will be primary and non-contributory to any insurance carried or self-insurance program established by MD Anderson or System. Bellicum's insurance will be kept in force until during the Term and for a period of one year thereafter.

9.6 **INTELLECTUAL PROPERTY**

9.6.A All deliverables, results and data generated by MD Anderson, whether patentable or not, in the course of performing the Services hereunder (including, without limitation, all Intellectual Property therein) shall be owned by Bellicum.

9.6.B Bellicum retains all right, title, and interest in and to any Bellicum Intellectual Property. Nothing in the Agreement shall be construed to grant MD Anderson any right or license to any Bellicum Intellectual Property except as expressly set forth herein. During the Term, Bellicum hereby grants to MD Anderson a fully paid, non-exclusive license under any and all Bellicum Intellectual Property and Bellicum Arising IP that is necessary for the sole and limited purpose of MD Anderson's performance of its obligations under the Agreement, including the Services and the Manufacture of Patient Lots.

9.6.C MD Anderson retains all right, title, and interest in and to any MD Anderson Intellectual Property. Any Intellectual Property created or developed solely or jointly by MD Anderson in the course of performing the Services that relates generally to the Development or Manufacture of substances or drug products, including any process, protocol, technology, Know-How or the like that applies generally to the conduct by MD Anderson of laboratory and manufacturing operations and activities, and does not incorporate or utilize Bellicum Confidential Information or Bellicum Intellectual Property, shall be "MD Anderson Arising IP" and MD Anderson shall own all right, title and interest therein. MD Anderson hereby grants to Bellicum a fully paid, non-exclusive license, to use MD Anderson Arising IP for the sole and limited purposes of the Development, Manufacturing and Commercialization, by or on behalf of Bellicum or a Bellicum sublicensee, of Bellicum the cell therapy products that are the subject of one or more Work Order hereunder.

9.6.D All Intellectual Property created or developed by Bellicum or solely or jointly by MD Anderson in the course of performing the Services that incorporates or utilizes Bellicum Confidential Information or Bellicum Intellectual Property, shall be "Bellicum Arising IP" and the exclusive property of Bellicum. As such, if any such Bellicum Arising IP is created or developed solely by MD Anderson, MD Anderson shall provide written notice to Bellicum of any such Bellicum Arising IP, as soon as possible. MD Anderson hereby assigns to Bellicum all right, title, and interest in and to all such Bellicum Arising IP, and shall take any actions, including but not limited to the execution of documents, reasonably requested by Bellicum and at Bellicum's expense, to effect the purposes of the foregoing.

9.7 **Referrals:** It is understood and agreed by the Parties that: (i) there is no agreement hereunder that either Party refer business to the other Party or any of its Affiliates; (ii) no part of the Services provided or payments made hereunder are intended or should be construed to be in exchange for referrals or arranging referrals; and (iii) payments hereunder represent fair market value determined by the Parties through good faith, arms-length bargaining.

9.8 **Ethics Matters; No Financial Interest:** Bellicum and its employees, agents, and representatives have read and understood the following prior to the commencement of Services under the Agreement: MD Anderson's Ethics Policy, Conflicts of Interest Policy, and Standards of Conduct Guide available at http://www.mdanderson.org/about-us/doing-business/vendors-and-suppliers/index.html and at https://www.mdanderson.org/about-md-anderson/business-legal/conflict-of-interest.html, and applicable state ethics laws and rules available at www.utsystem.edu/ogc/ethics. Neither Bellicum nor its employees, agents, or representatives will assist or cause MD Anderson employees to violate MD Anderson's Ethics Policy, Conflicts of Interest Policy, Standards of Conduct Guide, or applicable state ethics laws or rules. Bellicum represents and warrants that no member of the Board has a direct or indirect financial interest in the transaction that is the subject of the Agreement.

Section 10. GOVERNANCE

10.1 **Joint Steering Committee:** The Parties have formed a Joint Steering Committee (the "JSC"), in which each Party has appointed the following two (2) executive employees as such Party's members of the JSC (the "Members"), all of whom shall be familiar with and have responsibility for oversight of the activities under the Agreement:

MD Anderson: Houman Mesghali

Jason Bock

Bellicum: Alan Smith

Shane Ward

Each Party may with written notice to the other Party, change one or more of its Members appointed to the JSC. The JSC shall have general oversight and review of the activities and results under the Agreement and shall be the initial forum for seeking to resolve any issues referred to the JSC by either Party or both. Specifically, but without limitation,

the JSC shall seek in good faith to resolve any disputes or issues regarding the Manufacturing schedule or Manufacturing processes for the product.

10.2 **Steering Committee Meetings:** The JSC shall meet, in person or via teleconference or video-conference, on a reasonably regular basis, as planned and agreed by the JSC Members, and in any event within fourteen (14) calendar days after receipt of a written request for such a meeting by one Party to the other Party. The request shall describe the matters or issues to be discussed, including any matter in dispute, and the solution which the requesting Party proposes to be decided. Each Party may invite other employees to attend the JSC meeting from particular departments/areas of expertise as may be necessary to discuss the agenda topics or matters or issues in dispute. Any action or decision by the JSC shall be taken by unanimous consent of the JSC, with the Members of each Party collectively having a single vote, or by a written resolution signed by all of the Members. If the JSC is unable to reach unanimous consent on a particular matter or issue being discussed by the JSC, then the matter or issues will be referred by each Party to a responsible member of senior management to be designated by each Party, who will use good faith efforts to resolve such matter or issue.

Section 11. GENERAL PROVISIONS

11.1 **Entire Agreement:** The Agreement, read together with the specific provisions of the APA referred to in the Agreement, constitute the entire and complete agreement between the Parties with respect to the subject matter contemplated herein. The Agreement supersedes any prior agreements or understandings, whether written or oral, between the Parties with respect to the Services. To the extent that any provision of the Agreement conflicts with or is inconsistent with the terms of the APA, the APA shall govern.

11.2 **Amendment:** No modification, alteration, waiver, or supplement of the Agreement will be effective unless it is set forth in a written instrument that is signed by both Parties to the Agreement.

11.3 **Independent Contractor:** MD Anderson is an independent contractor with respect to the performance of all Services, and neither MD Anderson nor anyone employed by MD Anderson will be deemed for any purpose to be the employee, agent, servant, or representative of Bellicum in the performance of any Service or any part thereof in any manner dealt with herein. Bellicum will have no direction or control of MD Anderson or its employees and agents. Bellicum will not represent itself to be an agent or representative of MD Anderson or System or the State of Texas. MD Anderson shall never be liable for Bellicum's federal or state income taxes, franchise taxes, or taxes on Bellicum's personnel, including personal income tax and social security taxes associated therewith. Bellicum will cooperate with, and provide reasonable assistance to, MD Anderson in obtaining any tax exemptions to which MD Anderson is entitled.

11.4 **Non-Exclusive Agreement:** Nothing in the Agreement is intended to prevent, or should be construed as preventing, MD Anderson from contracting with any Third Party for the provision of goods or services the same as or similar to the Services. MD Anderson may, notwithstanding anything contained herein to the contrary, engage in whatever activities MD Anderson chooses, in MD Anderson's sole and absolute discretion, whether the same are competitive with Bellicum or otherwise. Bellicum acknowledges and agrees that this Section 11.4 is a material part of the consideration for MD Anderson to enter into this Agreement and to provide the Services.

11.5 **Assignment:** No rights and privileges granted to any Party under the Agreement may be transferred or assigned without obtaining the prior written consent of the other Party. The foregoing prohibition will also apply to any change in control of Bellicum. Any attempt to transfer or assign any rights or privileges under the Agreement without having first obtained written consent from the other Party will be null and void and will entitle the other Party to immediately terminate the Agreement. Notwithstanding anything to the contrary herein, any assignment of the Agreement shall not relieve the assigning Party of its obligations hereunder.

11.6 **Severability:** If any provision of the Agreement is held by a court of competent jurisdiction to be unenforceable, the Agreement shall be deemed to be amended to the extent necessary to make such provision enforceable, or, if necessary, the Agreement shall be deemed to be amended to delete the unenforceable provision or portion thereof. In the event any provision is deleted or amended, the remaining provisions shall remain in full force and effect.

11.7 **Non-Waiver of Defaults:** Failure of any Party to declare any default by any other Party immediately upon occurrence thereof, or delay by any Party in taking any action in connection therewith, will not waive such default or a potential remedy for such default.

11.8 **Force Majeure:** Except for the duty to make payments when due and any indemnification provisions under the Agreement, neither Party will be liable or responsible to the other for any loss or damage or for any delays or failure to perform due to causes beyond its reasonable control, including, but not limited to, acts of God, employee strikes, epidemics, war, riots, flood, fire, sabotage, or any other circumstances of like character.

11.9 **Notices:** Any notice required or permitted to be sent under the Agreement will be delivered by hand, mailed by a nationally recognized overnight courier service (delivery receipt requested) with charges paid by the dispatching Party, or mailed by registered or certified mail, return receipt requested, to Bellicum or to MD Anderson, as the case may be, at the respective notice addresses identified in this Section 11.9. Notice so mailed will be deemed effective (A) upon hand delivery, (B) on the scheduled date of delivery by a nationally recognized overnight courier service, or (C) on the third (3rd) day following the date of deposit into the United States mail.

BELLICUM:

Bellicum Pharmaceuticals, Inc.
2130 West Holcombe Blvd
Suite 800
Houston, TX 77030
Attention: General Counsel
Email: sward@bellicum.com

with a copy to:

Pillsbury Winthrop Shaw Pittman LLP
2 Houston Center
909 Fannin Street, Suite 2000
Houston, TX 77010-1028
Attention: Andrew L. Strong
Email: andrew.strong@pillsburylaw.com

MD ANDERSON:

Jason Bock, VP & Head, Biologics Prod Dev, Biologics Development
MD Anderson Cancer Center
Biologics Development
1515 Holcombe Blvd.
Unit 952
Houston, TX 77030-4009
jbbock@mdanderson.org
(713) 745-9495

AND

Legal Services
The University of Texas M. D. Anderson Cancer Center
ATTN: Chief Legal Officer
7007 Bertner Avenue
Houston, Texas 77030

Or such other person or address as may be given in writing in accordance with this Section.

11.10 **Dispute Resolution:** To the extent that Chapter 2260, *Texas Government Code*, as it may be amended from time to time ("Chapter 2260"), is applicable to the Agreement and is not preempted by other applicable law, the dispute resolution process provided for in Chapter 2260 will be used by MD Anderson and Bellicum to attempt to resolve any claim for breach of contract that cannot be resolved in the ordinary course of business. The chief business officer of MD Anderson will examine Bellicum's claim and any counterclaim and negotiate in an effort to resolve the claims. The Parties specifically agree (i) neither execution of this Agreement by MD Anderson nor any other conduct, action or inaction of any representative of MD Anderson relating to the Agreement constitutes or is intended to constitute

a waiver of MD Anderson's or the state's sovereign immunity to suit; and (ii) MD Anderson has not waived its right to seek redress in the courts. Any periods set forth in the Agreement for notice and cure of defaults are not waived.

11.11 **Counterparts; Facsimile Signature:** The Agreement may be executed in any number of counterparts, each of which will for all purposes be deemed an original of the Agreement, but all of which together will constitute one and the same document. The Agreement also may be evidenced by facsimile signature or by e-mail delivery of a ".pdf" format data file, and facsimile or ".pdf" signature page will be deemed to be an original signature and is to be considered to have the same binding effect as the delivery of an original signature on an original contract.

11.12 **Survival:** Expiration or termination of the Agreement will not affect any right or obligation that either Party may have accrued prior to such expiration or termination. In particular, all indemnity provisions of the Agreement will survive the expiration or termination of the Agreement.

11.13 **Governing Law and Venue:** The Agreement will be construed under and in accordance with the laws of the State of Texas without reference to its conflicts of law provisions, and all obligations of the Parties created under the Agreement are performable in Harris County, Texas. Subject to the sovereign immunity of the State of Texas, any lawsuit brought against MD Anderson under the Agreement may only be filed in the State District Court in Harris County, Texas.

11.14 **Loss of Funding:** Performance by MD Anderson under the Agreement may be dependent upon the appropriation and allotment of funds by the Texas State Legislature (the "Legislature") and/or allocation of funds by the Board. If the Legislature fails to appropriate or allot the necessary funds, or the Board fails to allocate the necessary funds, then MD Anderson will issue written notice to Bellicum and MD Anderson may terminate the Agreement without further duty or obligation under the Agreement. Bellicum acknowledges that appropriation, allotment, and allocation of funds are beyond the control of MD Anderson.

11.15 **Certification regarding Boycotting Israel:** Pursuant to Chapter 2270, Texas Government Code, Bellicum certifies that it (1) does not currently boycott Israel, and (b) will not boycott Israel during the Term. Bellicum acknowledges the Agreement may be terminated if this certification is inaccurate or becomes inaccurate at any time during the Term.

11.16 **Certification regarding Business with Certain Countries and Organizations:** Pursuant to Chapter 2252, Texas Government Code, Bellicum certifies that it is not engaged in business with Iran, Sudan, or a foreign terrorist organization. Bellicum acknowledges the Agreement may be terminated if this certification is inaccurate or becomes inaccurate at any time during the Term.

11.17 **Construction**. The Agreement shall not be construed either more favorably for or strongly against either of the Parties based upon which Party drafted it. Every covenant, term, and provision of the Agreement shall be construed simply according to its fair meaning.

11.18 **Headings**. The headings used in the Agreement are used for reference purposes only and do not constitute substantive matters to be considered in construing the terms of the Agreement.

11.19 **State Auditor's Office**. The State Auditor's Office may conduct an audit or investigation in connection with procurements made by MD Anderson as set out in Sections 51.9335(c), 73.115(c) and 74.008(c) of the Texas Education Code. This provision is included in contracts to (1) notify Bellicum that the State Auditor may require Bellicum to provide records related to the procurement; and (2) to be sure Bellicum notifies any subcontractors about this information.

11.20 **Texas Family Code Child Support Certification**. Pursuant to Section 231.006, Texas Family Code, Bellicum represents and warrants that it is not ineligible to receive the award of or payments under the Agreement and acknowledges and agrees that the Agreement may be terminated and payment withheld if this certification is inaccurate.

11.21 **Texas State Agency:**

11.21.A MD Anderson is an agency of the State of Texas and under the Constitution and laws of the State of Texas possesses certain rights and privileges, is subject to certain limitations and restrictions, and only has such authority as is granted to it under the Constitution and laws of the State of Texas. Nothing in the Agreement is intended to be, or will be construed as, a waiver of the sovereign immunity of the State of Texas or a prospective waiver or restriction of any of the rights, remedies, claims, and privileges of the State of Texas.

Moreover, notwithstanding the generality or specificity of any provision of the Agreement (including, without limitation, any provision pertaining to indemnification, a cap on liability, a limitation of damages, or a waiver or limitation of rights, remedies, representations, or warranties), the provisions of the Agreement as they pertain to MD Anderson are enforceable only to the extent authorized by the Constitution and laws of the State of Texas.

11.21.B Any provision of any applicable law, rule, or regulation that invalidates any provision of the Agreement or would cause one or both of the Parties hereto to be in violation of law will be deemed to have superseded the terms of the Agreement. The Parties, however, will use reasonable efforts to accommodate the terms and intent of the Agreement to the greatest extent possible consistent with the requirements of the law and negotiate in good faith toward amendment of the Agreement in such respect.

11.22 **Rules of Construction**. Interpretation of the Agreement shall be governed by the following rules of construction: (a) words in the singular shall be held to include the plural and vice versa and words of one gender shall be held to include the other gender as the context requires, (b) the word “including” and words of similar import shall mean “including, without limitation,” (c) provisions shall apply, when appropriate, to successive events and transactions, (d) the headings contained herein are for reference purposes only and shall not affect in any way the meaning or interpretation of the Agreement, (e) the words “herein,” “hereto,” “hereinafter” and words of similar import refer to the Agreement as a whole, (f) ”may” is permissive and “may not” is mandatory, (g) ”will” and “shall” are mandatory, not merely expressions of future intent or expectation, (h) items omitted from non-exclusive lists or examples shall not be deemed to be a purposeful omission of other items in such non-exclusive lists or examples, even if such items were originally included in such lists or examples or discussed between the Parties during the negotiation of the Agreement, and (i) the Agreement was drafted with the joint participation of both Parties and shall be construed neither against nor in favor of either, but rather in accordance with the fair meaning hereof.

[Remainder of page intentionally left blank; Signature page follows]

Having agreed to the foregoing terms, and with the intention of being bound, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER:

By:_____

Name:_____

Its:_____

BELLICUM:

By:_____

Name:_____

Its:_____

Read and Approved:

By:_____

Name: Jason B. Bock, PhD

Its: VP and Head of Biologics Development and Therapeutics Discovery

EXHIBIT A

DEFINITIONS

This **Exhibit A** to the Agreement provides agreed upon definitions applicable to the Parties for purposes of the Agreement. All capitalized terms used in the Agreement without definition shall have the meanings ascribed thereto in this **Exhibit A**.

"**Action**" means any claim, action, cause of action, demand, lawsuit, arbitration, inquiry, audit, notice of violation, proceeding, litigation, citation, summons, subpoena or investigation of any nature, civil, criminal, administrative, regulatory or otherwise, whether at law or in equity.

"**Action Plan**" has the meaning set forth in Section 4.2 of the Agreement.

"**Affiliate**" means, with respect to any Person, any other Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. For purposes of the Agreement, the term "control" (including the terms "controlled by" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise. For purposes of the Agreement each of (a) The University of Texas System, and (b) The UT Board of Regents is an Affiliate of MD Anderson.

"**Anti-Bribery Laws**" has the meaning set forth in Section 8.3 of the Agreement.

"**APA**" has the meaning set forth in the Recitals section of the Agreement.

"**Batch Production Record**" means a manufacturing record for a Patient Lot generated by MD Anderson concurrently with the production of a specific Patient Lot such that successive steps in such processes are documented.

"**Bellicum Arising IP**" has the meaning set forth in Section 9.6.D of the Agreement.

"**Bellicum Obligations**" has the meaning set forth in Section 2.4 of the Agreement.

"**Board**" has the meaning set forth in Section 9.5.B of the Agreement.

"**Business Day**" means any day except Saturday, Sunday or any other day on which commercial banks located in New York, New York are authorized or required by Law to be closed for business.

"**Confidential Information**" has the meaning set forth in Section 9.1 of the Agreement.

"**Conforming Product**" means any Deliverable that meets the Specifications.

"**Covered Resources**" has the meaning set forth in Section 8.5 of the Agreement.

"**Current Bellicum Products**" means the following Bellicum products: BPX-601, BPX-603, and the BPX-501_OTS.

"**Deliverable**" means any work, or product Delivered or required to be Delivered by MD Anderson to Bellicum in fulfillment of its obligations under a Work Order under the Agreement.

"**Delivery**" and "**Delivered**" means MD Anderson's making available of any Deliverable, including any Patient Lots, as directed by Bellicum, to Bellicum's carrier at the Facility.

"**Develop,**" "**Developing**" or "**Development**" means any and all activities relating to research, non-clinical, preclinical and clinical trials, toxicology testing, statistical analysis, publication and presentation of research and study results and reporting, preparation and submission of applications (including any CMC-related information) for regulatory approval of a product, necessary or reasonably useful or otherwise requested or required by a Regulatory Authority as a condition or in support of obtaining or maintaining all regulatory approvals for such product. For clarity, "Development" shall not include any activities included within the Manufacturing of a product.

"**Dedicated Suites**" means two (2) biomanufacturing suites at the Facility for the Manufacture of Patient Lots.

"**Disclosing Party**" has the meaning set forth in Section 9.1 of the Agreement.

"**Effective Date**" has the meaning set forth in the Recitals section of the Agreement.

"**EMA**" means the European Medicines Agency or its successor.

"**EU**" means the countries of the European Union as it exists at any time.

"**Excluded/Adverse Actions**" has the meaning set forth in Section 8.7 of the Agreement.

"**Existing Process**" means all Specifications relating to the Manufacturing process for the Patient Lots as set forth in each Work Order.

"**Expansion Option**" has the meaning set forth in Section 2.7.B of the Agreement.

"**Extended Term**" has the meaning set forth in Section 6.1.A

"**Facility**" has the meaning set forth in Section 2.7 of the Agreement.

"**FD&C Act**" means the U.S. Federal Food, Drug and Cosmetic Act, as amended, and the regulations promulgated thereunder.

"**FDA**" means the U.S. Food and Drug Administration or its successor.

"**Good Manufacturing Practices**" or "cGMPs" means the then-current good manufacturing practices required by (i) the FDA, as set forth in the FD&C Act and the regulations promulgated thereunder, for the manufacture and testing of pharmaceutical materials, including the provisions of 21 C.F.R. Parts 210 and 211, (ii) European Commission Directive 91/356/EEC, as amended by Directive 2003/94/EC, and 91/412/EEC respectively, as well as "**The rules governing medicinal products in the European Union,**" Volume 4, Guidelines for good manufacturing practices for medicinal products for human and veterinary use, and (iii) the principles detailed in the ICH Q7A guidelines, in each case, including all applicable rules, regulations, orders and guidance applicable thereto, and as each may be amended from time to time, and any successor thereto.

"**Governmental Authority**" means any federal, state, local or foreign government or political subdivision thereof, or any agency or instrumentality of such government or political subdivision, or any self-regulated organization or other non-governmental regulatory authority or quasi-governmental authority (to the extent that the rules, regulations, or orders of such organization or authority have the force of Law), or any arbitrator, court, or tribunal of competent jurisdiction.

"**Governmental Order**" means any order, writ, judgment, injunction, decree, stipulation, determination, or award entered by or with any Governmental Authority.

"**HIPAA**" has the meaning set forth in Section 8.4 of the Agreement.

"**IND**" means both the application of an Investigational New Drug Application to the FDA and its equivalent in other countries and their Regulatory Authorities, such as a clinical trial application or a clinical trial exemption, the filing of which is necessary to commence or conduct clinical testing of a pharmaceutical product in humans in such jurisdiction.

"**Initial Supply Commitment**" has the meaning set forth in Section 2.2 of the Agreement.

"**Initial Term**" has the meaning set forth in Section 6.1 of the Agreement.

"**Indemnification Claim**" has the meaning set forth in Section 8.12.C of the Agreement.

"**Indemnified Party**" has the meaning set forth in Section 8.12.C of the Agreement.

"**Indemnifying Party**" has the meaning set forth in Section 8.12.C of the Agreement.

"**Intellectual Property**" means any and all rights in, arising out of, or associated with any of the following in any jurisdiction throughout the world: (i) issued patents, patent applications, utility models and design rights; (ii) trademarks, service marks, brands, and other indicia of source or origin and all registrations, applications for registration, and renewals of, any of the foregoing; (iii) copyrights and works of authorship, whether or not copyrightable, and all registrations, applications for registration, and renewals of any of the foregoing; (iv) internet domain names, social media accounts and all associated web addresses, URLs and websites and all content and data thereon or relating thereto; (v) mask works, and all registrations, applications for registration, and renewals thereof; (vi) industrial designs; (vii) trade secrets, know-how, inventions (whether or not patentable), discoveries, improvements, technology, business and technical information, databases, data compilations and collections, tools, methods, processes, techniques, and other confidential and proprietary information and all rights therein; (viii) computer programs, operating systems, applications, firmware and other code, including all source code, object code, application programming interfaces, data

files, databases, protocols, specifications, and other documentation thereof; (ix) rights of publicity; and (x) all other intellectual or industrial property and proprietary rights.

"**JSC**" has the meaning set forth in Section 10.1 of the Agreement.

"**Know-How**" means any proprietary data, results, material(s), and nonpublic information of any type whatsoever, in any tangible or intangible form, including know-how, trade secrets, practices, techniques, methods, processes, inventions, discoveries, developments, specifications, formulations, formulae, materials or compositions of matter of any type or kind (patentable or otherwise), software, algorithms, marketing reports and plans, market research, expertise (including experts' information), test data (including pharmacological, biological, chemical, biochemical, toxicological, preclinical and clinical test data), analytical and quality control data, stability data, other study data and procedures.

"**Laws**" means any statute, law, ordinance, regulation, rule, code, order, constitution, treaty, common law, judgment, decree, other requirement or rule of law of any Governmental Authority or Regulatory Authority.

"**Lead-Time**" means the number of days it will take, on average, for MD Anderson to perform the Services to create a Deliverable that is released for Delivery, including Manufacturing and testing all Deliverables.

"**LEIE**" has the meaning set forth in Section 8.7 of the Agreement.

"**Liabilities**" means liabilities, obligations, or commitments of any nature whatsoever, asserted or unasserted, known or unknown, absolute or contingent, accrued or unaccrued, matured or unmatured, or otherwise.

"**Losses**" means any and all claims, losses, damages, Liabilities, deficiencies, Actions, judgments, interest, awards, penalties, fines, costs (including court costs and costs of appeal), expenses of whatever kind (including, without limitation, reasonable costs of investigation defense, reasonable accountants', attorneys' and similar fees, the cost of enforcing any right to indemnification hereunder, interest accrued on late indemnification payments and the cost of pursuing any insurance providers) or diminution in value incurred or suffered by an indemnitee, whether or not involving a third party claim; *provided, however,* that "**Losses**" shall not include punitive damages, except to the extent actually awarded to a Governmental Authority or other third party, or related to criminal, intentional, fraudulent or willful misconduct.

"**Manufacture**" or "**Manufacturing**" means all activities, whether performed by a Party or a Third Party designee of a Party, related to the manufacturing of a product or Deliverable, or any ingredient thereof, including manufacturing for clinical use or commercial sale, formulation, filling and finishing activities, in process and product testing, release of product, quality assurance activities related to manufacturing and release of product, handling and storage of product and ongoing stability tests, initial product packaging (but not labeling or packaging for shipping), and regulatory activities related to any of the foregoing.

"**Master Batch Records**" has the meaning set forth in the QAA.

"**Marketing Authorization**" means an approval and authorization, including any renewals thereof, of the applicable Regulatory Authority necessary for the Manufacture, packaging, marketing, storage, import, export, transport, distribution, sale and use of a pharmaceutical or biologic product in any country.

"**Materials**" means all materials and technology required or necessary to create or Manufacture the Deliverables in accordance with a Work Order, including Raw Materials, cell banks, reagents and any materials described in a Work Order.

"**MD Anderson**" has the meaning set forth in the preamble of the Agreement and the Additional Terms.

"**MD Anderson Arising IP**" has the meaning set forth in Section 9.6.C of the Agreement.

"**MD Anderson Indemnitees**" has the meaning set forth in Section 8.12.A of the Agreement.

"**Members**" has the meaning set forth in Section 10.1 of the Agreement.

"**Non-Conforming Product**" means any Deliverable that does not meet the Specifications.

"**Notice of Termination**" has the meaning set forth in Section 6.2 of the Agreement.

"**Patient Lot**" has the meaning set forth in Section 2.2 of the Agreement.

"**Party**" or "**Parties**" has the meaning set forth in the preamble of the Agreement.

"**Person**" means an individual, corporation, partnership, joint venture, limited liability company, Governmental Authority, unincorporated organization, trust, association or other entity.

"**Person-In-Plant**" or "**PIP**" has the meaning set forth in Section 5.3.B of the Agreement.

"**PHI**" has the meaning set forth in Section 8.4 of the Agreement.

"**Process Inherent Issue**" means characteristics of the Existing Process or Specifications which negatively affect the Manufacturing process, consistent with historical production rates (if applicable), which are not the result of either Party's negligent or willful act or omission.

"**Quality Assurance Agreement**" or "**QAA**" means a detailed document specifying the quality and regulatory procedures and responsibilities of the Parties with respect to the Manufacture of Deliverables. The QAA attached as Exhibit C is specific for the Patient Lots, entered into pursuant to Section 5.1 of the Agreement by and between MD Anderson and Bellicum. All references to Quality Agreement herein shall refer to the Quality Agreement in effect at the time of the Manufacture of the applicable Deliverable.

"**Raw Materials**" has the meaning set forth in the QAA.

"**Release Package**" has the meaning set forth in the QAA.

"**Receiving Party**" has the meaning set forth in Section 9.2 of the Agreement.

"**Regulatory Authority**" means, in a particular country or regulatory jurisdiction, any applicable Governmental Authority involved in granting Regulatory Approval in such country or regulatory jurisdiction, including (i) in the U.S., the FDA, and (ii) in the EU, the EMA, the European Commission and relevant national medicines regulatory authorities.

"**Representatives**" means, with respect to any Person (and its Affiliates), any and all Regents, directors, officers, full-time employees, part-time employees, temporary workers, subcontractors, consultants, agents, permitted sublicensees (if any) and legal, technical, and business advisors.

"**Reprocess**" or "**Reprocessing**" means introducing a Deliverable back into, and repeating appropriate manipulation steps that are part of, the established Specifications or Manufacturing process.

"**SAM**" has the meaning set forth in Section 8.7 of the Agreement.

"**Services**" means the services to be performed MD Anderson as described in this Agreement and in a mutually agreed upon and executed Work Order.

"**Supply Interruption**" has the meaning set forth in Section 4.2 of the Agreement.

"**Supply Failure**" has the meaning set forth in Section 4.2 of the Agreement.

"**Specifications**" shall mean all criteria and instructions relating to the Services including description of all Materials, instructions for performing the Services, description of Deliverables, processes to Manufacture, test, and release Deliverables, handling and storage requirements of all Materials and Deliverables, approved suppliers of Materials (as applicable), process flow diagrams, formulas, master formulas, analytical and testing procedures, in-process control and release tests for the Deliverables, artwork (as applicable), and release, packaging, storage, labeling and other processes relating to the Materials provided by Bellicum to MD Anderson.

"**Storage Guidelines**" means those procedures, methods and conditions for preserving, monitoring and storing all Materials, Raw Materials and Patient Lots, as set forth in the QAA or as otherwise mutually agreed to in writing by the Parties.

"**System**" has the meaning set forth in the preamble of the Agreement.

"**Term**" has the meaning set forth in Section 6.1 of the Agreement.

"**Termination Date**" has the meaning set forth in Section 6.2 of the Agreement.

"**Third Party**" means any Person other than the Parties.

"**Work Orders**" has the meaning set forth in Section 1.1 of the Agreement.

“**Work Order Termination Date**” has the meaning set forth in Section 6.4 of the Agreement.

EXHIBIT G

Form of Work Order #1
[***]

EXHIBIT H

Description of Sublease Agreement
[***]

EXHIBIT I

Agreed Public Announcement
[***]

EXHIBIT J

Form of Consent to Assignment
[***]

Exhibit 10.39
Execution Version

FIRST AMENDMENT TO ASSET PURCHASE AGREEMENT

THIS FIRST AMENDMENT TO ASSET PURCHASE AGREEMENT (this "Amendment") is entered into as of February 21, 2020, by and between Bellicum Pharmaceuticals, Inc., a Delaware corporation ("Seller"), and The University of Texas M.D. Anderson Cancer Center, an institution of higher education and an agency of the State of Texas ("Buyer"). Seller and Buyer are sometimes individually referred to herein as a "Party" and collectively referred to herein as the "Parties."

RECITALS

WHEREAS, Seller and Buyer are parties to that certain Asset Purchase Agreement, dated as of January 17, 2020 (the "APA");

WHEREAS, Seller and Buyer desire to enter into this Amendment to extend the End Date from February 21, 2020 to March 13, 2020;

WHEREAS, pursuant to Section 9.09 of the APA, the APA can only be amended, modified or supplemented by an agreement in writing signed by Buyer and Seller; and

WHEREAS, the Parties now desire to amend the APA as described below.

NOW, THEREFORE, in consideration of the foregoing, and other for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto, intending to be legally bound, hereby agree as follows:

AGREEMENT

1. Definitions. Capitalized terms used in this Amendment and not otherwise defined shall have the meaning ascribed to such terms in the APA.

2. Amendment of Section 3.01. Section 3.01 of the APA is hereby deleted and restated in its entirety to read as follows:

Section 3.01 Closing. The consummation of the transactions contemplated by this Agreement (the "Closing") shall take place on the third Business Day after the date on which all of the conditions set forth in Section 3.02 and Section 3.03 have been satisfied or waived in writing (other than those conditions that by their terms are to be satisfied or waived at the Closing), or such other date as may be agreed upon in writing by Buyer and Seller (the "Closing Date"); *provided*, *however*, that the parties shall use commercially reasonable efforts to have the Closing occur prior to or on March 13, 2020.

3. Amendment of Section 8.0l(a). Section 8.0l (a) of the APA is hereby deleted and restated in its entirety to read as follows:

(a) By Seller if Closing has not occurred by March 13, 2020;

4. Amendment of Section 8.01(d). Section 8.01(d) of the APA is hereby deleted and restated in its entirety to read as follows:

(d) by either Buyer or Seller by providing written notice to the other at any time on or before March 13, 2020 (the "End Date") if the Closing shall not have occurred by reason of the impossibility of satisfying any condition set forth in Section 3.02, in the case of Buyer, or Section 3.03 in the case of Seller, (unless the impossibility of satisfying any such condition is the result of one or more breaches or violations of, or inaccuracy in, any covenant, agreement, representation or warranty set forth in this Agreement by the terminating party);

5. Ratification. Except as expressly amended by this Amendment, the APA is hereby ratified and confirmed in all respects.

6. Governing Law. The Amendment shall be governed by and construed under and in accordance with the laws of the State of Texas without reference to its conflicts of law provisions, and all obligations of the Parties created under the Amendment are performable in Harris County, Texas. Subject to Sections 9.12 and 9.13 of the APA, any legal suit, action or proceeding arising out of or based upon this Amendment, may be instituted in the federal courts of the United States of America or the courts of the State of Texas in each case located in the City of Houston and Harris County, and each Party irrevocably submits, to the maximum extent permitted by law, to the exclusive jurisdiction of such courts in any such suit, action or proceeding.

7. Counterparts; Headings. This Amendment may be executed in counterparts, each of which shall be deemed an original and all of which shall together constitute one and the same instrument. This Amendment also may be evidenced by e-mail delivery of a ".pdf" format data file, and such ".pdf" signature page will be deemed to be an original signature. The headings contained in this Amendment are for purposes of convenience only and shall not affect the meaning or interpretation of this Amendment.

[Signature page follows]

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed by their respective authorized officers as of the date first above written.

SELLER:

BELLICUM PHARMACEUTICALS, INC.

By: */s/ Rick Fair*
Name: Rick Fair
Title: CEO & President

BUYER:

THE UNIVERSITY OF TEXAS M.D. ANDERSON CANCER CENTER

By: */s/ Peter W.T. Pisters, M.D.*
Name: Peter W.T. Pisters, M.D.
Title: President

READ AND APPROVED:

By: */s/ Jason B. Bock, Ph.D.*
Name: Jason B. Bock, Ph.D.
Its: VP and Head, Biologics Product Development

Reviewed and Approved by
UTMDACC Legal Services for
UTMDACC Signature:

/s/Kenny Freed 2/25/20

Exhibit 10.5(B)

STANDARD FORM

BELLICUM PHARMACEUTICALS, INC.

STOCK OPTION GRANT NOTICE

(2019 EQUITY INCENTIVE PLAN)

Bellicum Pharmaceuticals, Inc. (the "***Company***"), pursuant to its 2019 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: o Incentive Stock Option o Nonstatutory Stock Option

Exercise Schedule: x Same as Vesting Schedule o Early Exercise Permitted

Vesting Schedule: **[**One-fourth **(**1/4th) of the shares vest one year after the later of the (i) Vesting Commencement Date and (ii) Date of Grant; the balance of the shares vest in a series of thirty-six (36) successive equal monthly installments measured from the first anniversary of the Vesting Commencement Date, subject to Optionholder's Continuous Service as of each such date**]**

Payment: By one or a combination of the following items (described in the Option Agreement):

x By cash, check, bank draft or money order payable to the Company

x Pursuant to a Regulation T Program if the shares are publicly traded

x By delivery of already-owned shares if the shares are publicly traded

x If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein. By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

BELLICUM PHARMACEUTICALS, INC.

By:_____
Signature

Title:_____

Date:_____

OPTIONHOLDER:

_____
Signature

Date:_____

ATTACHMENTS: Option Agreement, 2019 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I

BELLICUM PHARMACEUTICALS, INC.
2019 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, Bellicum Pharmaceuticals, Inc.(the "***Company***") has granted you an option under its 2019 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. EXERCISE PRIOR TO VESTING ("EARLY EXERCISE"). If permitted in your Grant Notice (*i.e.*, the "Exercise Schedule" indicates "Early Exercise Permitted") and subject to the provisions of your option, you may elect at any time that is both (i) during the period of your Continuous Service and (ii) during the term of your option, to exercise all or part of your option, including the unvested portion of your option; *provided, however,* that:

a. a partial exercise of your option will be deemed to cover first vested shares of Common Stock and then the earliest vesting installment of unvested shares of Common Stock;

b. any shares of Common Stock so purchased from installments that have not vested as of the date of exercise will be subject to the purchase option in favor of the Company as described in the Company's form of Early Exercise Stock Purchase Agreement;

c. you will enter into the Company's form of Early Exercise Stock Purchase Agreement with a vesting schedule that will result in the same vesting as if no early exercise had occurred; and

d. if your option is an Incentive Stock Option, then, to the extent that the aggregate Fair Market Value (determined at the Date of Grant) of the shares of Common Stock with respect to which your option plus all other Incentive Stock Options you hold are exercisable for the first time by you during any calendar year (under all plans of the Company and its Affiliates) exceeds one hundred thousand dollars ($100,000), your option(s) or portions thereof that exceed such limit (according to the order in which they were granted) will be treated as Nonstatutory Stock Options.

5. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner ***permitted by your Grant Notice,*** which may include one or more of the following:

a. Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

b. Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

c. If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

6. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

7. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise

your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

8. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

a. immediately upon the termination of your Continuous Service for Cause;

b. three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 8(d) below); *provided, however,* that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further,* if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

c. twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 8(d)) below;

d. eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

e. the Expiration Date indicated in your Grant Notice; or

f. the day before the tenth (10th) anniversary of the Date of Grant.

If your option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the Date of Grant and ending on the day three (3) months before the date of your option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability. The Company has provided for extended exercisability of your option under certain circumstances for your benefit but cannot guarantee that your option will necessarily be treated as an Incentive Stock Option if you continue to provide services to the Company or an Affiliate as a Consultant or Director after your employment terminates or if you otherwise exercise your option more than three (3) months after the date your employment with the Company or an Affiliate terminates.

9. EXERCISE.

a. You may exercise the vested portion of your option (and the unvested portion of your option if your Grant Notice so permits) during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

b. By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

c. If your option is an Incentive Stock Option, by exercising your option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the Date of Grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your option.

d. By accepting your option you agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any shares of Common Stock or other securities of the Company held by you, for a period of one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2241 or NYSE Member Rule 472 or any successor or similar rules or regulation (the "***Lock-Up Period***"); *provided, however*, that nothing contained in this section will prevent the exercise of a repurchase option, if any, in favor of the Company during the Lock-Up Period. You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your shares of Common Stock until the end of such period.

You also agree that any transferee of any shares of Common Stock (or other securities) of the Company held by you will be bound by this Section 9(d). The underwriters of the Company's stock are intended third party beneficiaries of this Section 9(d) and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

10. TRANSFERABILITY. Except as otherwise provided in this Section 10, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

a. Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

b. Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement. If this option is an Incentive Stock Option, this option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

c. Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

11. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

12. WITHHOLDING OBLIGATIONS.

a. At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a "same day sale" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

b. If this option is a Nonstatutory Stock Option, then upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the maximum amount of tax required to be withheld by law (or such other amount as may be permitted while still avoiding classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination

of such tax withholding obligation to the date of exercise of your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

c. You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

13. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

14. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

15. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd-Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any compensation recovery policy otherwise required by applicable law and any recoupment or clawback policy adopted by the Company (whether or not required by applicable law).

16. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

17. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan

sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

18. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

19. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

20. MISCELLANEOUS.

a. The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

b. You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

c. You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

d. This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

e. All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Stock Option Grant Notice to which it is attached.

ATTACHMENT II

2019 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

Bellicum Pharmaceuticals, Inc.
Life Sciences Plaza
2130 West Holcombe Boulevard, Suite 850
Houston, Texas 77030 Date of Exercise: _____

This constitutes notice to Bellicum Pharmaceuticals, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive o	Nonstatutory o
Stock option dated:	_____	_____
Number of Shares as to which option is exercised:	_____	_____
Certificates to be issued in name of:	_____	_____
Total exercise price:	$_____	$_____
Cash payment delivered herewith:	$_____	$_____
[Value of _____ Shares delivered herewith:	$_____	$_____]
[Value of _____ Shares pursuant to net exercise:	$_____	$_____]
[Regulation T Program (cashless exercise):	$_____	$_____]

[1] Shares must meet the public trading requirements set forth in the option. Shares must be valued in accordance with the terms of the option being exercised, and must be owned free and clear of any liens, claims, encumbrances or security interests. Certificates must be endorsed or accompanied by an executed assignment separate from certificate.
[2] The option must be a Nonstatutory Stock Option, and Bellicum Pharmaceuticals, Inc. must have established net exercise procedures at the time of exercise, in order to utilize this payment method.
[3] Shares must meet the public trading requirements set forth in the option.

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the Bellicum Pharmaceuticals, Inc. 2019 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an incentive stock option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

Very truly yours,

_____

BELLICUM PHARMACEUTICALS, INC.
STOCK OPTION GRANT NOTICE
(2019 EQUITY INCENTIVE PLAN)

Bellicum Pharmaceuticals, Inc. (the "***Company***"), pursuant to its 2019 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: x Nonstatutory Stock Option

Exercise Schedule: x Same as Vesting Schedule

Vesting Schedule: [***For initial grants****:* The shares shall vest with respect to one-third of the shares on the one-year anniversary of the Date of Grant, and with respect to the remaining two-thirds of the shares in a series of twenty-four (24) successive equal monthly installments over the two-year period following such one-year anniversary of the Date of Grant, subject to Optionholder's Continuous Service as of each such date and the potential acceleration provisions set forth in Section 9 of the Option Agreement**] [*****For annual grants:*** The shares shall vest in full on the one-year anniversary of the Date of Grant, subject to Optionholder's Continuous Service as of each such date and the potential acceleration provisions set forth in Section 9 of the Option Agreement]

Payment: By one or a combination of the following items (described in the Option Agreement):

x By cash, check, bank draft or money order payable to the Company
x Pursuant to a Regulation T Program if the shares are publicly traded
x By delivery of already-owned shares if the shares are publicly traded
x Subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein. By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

BELLICUM PHARMACEUTICALS, INC.	**OPTIONHOLDER:**
By:_____ Signature	_____ Signature
Title:_____	
Date:_____	Date:_____

ATTACHMENTS: Option Agreement, 2019 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I
BELLICUM PHARMACEUTICALS, INC.
2019 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, Bellicum Pharmaceuticals, Inc.(the "***Company***") has granted you an option under its 2019 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner ***permitted by your Grant Notice,*** which may include one or more of the following:

Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

Subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

immediately upon the termination of your Continuous Service for Cause;

twelve (12) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 6(d) below); *provided, however,* that if during any part of such twelve (12) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of twelve (12) months after the termination of your Continuous Service; *provided further,* if during any part of such twelve (12) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy;

twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 6(d)) below;

eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

the Expiration Date indicated in your Grant Notice; or

the day before the tenth (10th) anniversary of the Date of Grant.

EXERCISE.

You may exercise the vested portion of your option during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

By accepting your option you agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any shares of Common Stock or other securities of the Company held by you, for a period of one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2241 or NYSE Member Rule 472 or any successor or similar rules or regulation (the "***Lock-Up Period***"); *provided, however*, that nothing contained in this section will prevent the exercise of a repurchase option, if any, in favor of the Company during the Lock-Up Period. You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your shares of Common Stock until the end of such period. You also agree that any transferee of any shares of Common Stock (or other securities) of the Company held by you will be bound by this Section 7(c). The underwriters of the Company's stock are intended third party beneficiaries of this Section 7(c) and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

TRANSFERABILITY. Except as otherwise provided in this Section 8, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior

to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

CHANGE IN CONTROL.

If a Change in Control occurs and as of immediately prior to the effective time of such Change in Control your Continuous Service has not terminated, then, as of the effective time of the Change in Control, the vesting and exercisability of your option will be accelerated in full.

If any payment or benefit you would receive from the Company or otherwise in connection with a Change in Control or other similar transaction (a "***280G Payment***") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "***Excise Tax***"), then any such 280G Payment (a "***Payment***") shall be equal to the Reduced Amount. The "***Reduced Amount***" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in your receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "***Reduction Method***") that results in the greatest economic benefit for you. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "***Pro Rata Reduction Method***").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for you as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (e.g., being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A of the Code shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A of the Code.

Unless you and the Company agree on an alternative accounting firm, the accounting firm engaged by the Company for

general tax compliance purposes as of the day prior to the effective date of the change of control transaction triggering the Payment shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the change of control transaction, the Company shall appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such accounting firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to you and the Company within fifteen (15) calendar days after the date on which your right to a 280G Payment becomes reasonably likely to occur (if requested at that time by you or the Company) or such other time as requested by you or the Company.

If you receive a Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section 9(b) and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, you shall promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of the first paragraph of this Section 9(b) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) in the first paragraph of this Section 9(b), you shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

WITHHOLDING OBLIGATIONS.

At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a “same day sale” pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

Upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the maximum amount of tax required to be withheld by law (or such other amount as may be permitted while still avoiding classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the

Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of

your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd-Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any compensation recovery policy otherwise required by applicable law and any recoupment or clawback policy adopted by the Company (whether or not required by applicable law).

OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

MISCELLANEOUS.

The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Stock Option Grant Notice to which it is attached.

ATTACHMENT II

2019 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

Bellicum Pharmaceuticals, Inc.

2130 West Holcombe Boulevard, Suite 800

Houston, Texas 77030 Date of Exercise: _____

This constitutes notice to Bellicum Pharmaceuticals, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Nonstatutory x
Stock option dated:	_____
Number of Shares as to which option is exercised:	_____
Certificates to be issued in name of:	_____
Total exercise price:	$_____
Cash payment delivered herewith:	$_____
[Value of _____ Shares delivered herewith:	$_____]
[Value of _____ Shares pursuant to net exercise[2]:	$_____]
[Regulation T Program (cashless exercise[3]):	$_____]

[1] Shares must meet the public trading requirements set forth in the option. Shares must be valued in accordance with the terms of the option being exercised, and must be owned free and clear of any liens, claims, encumbrances or security interests. Certificates must be endorsed or accompanied by an executed assignment separate from certificate.

[2] Bellicum Pharmaceuticals, Inc. must have established net exercise procedures at the time of exercise, in order to utilize this payment method.

[3] Shares must meet the public trading requirements set forth in the option.

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the Bellicum Pharmaceuticals, Inc. 2019 Equity Incentive Plan and (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option.

Very truly yours,

_____

BELLICUM PHARMACEUTICALS, INC.
STOCK OPTION GRANT NOTICE
(2019 EQUITY INCENTIVE PLAN)

Bellicum Pharmaceuticals, Inc. (the "***Company***"), pursuant to its 2019 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: o Incentive Stock Option o Nonstatutory Stock Option

Exercise Schedule: x Same as Vesting Schedule o Early Exercise Permitted

Vesting Schedule: **[**One-fourth **(**1/4th) of the shares vest one year after the later of the (i) Vesting Commencement Date and (ii) Date of Grant; the balance of the shares vest in a series of thirty-six (36) successive equal monthly installments measured from the first anniversary of the Vesting Commencement Date, subject to Optionholder's Continuous Service as of each such date and the potential acceleration provisions set forth in Section 11 of the Option Agreement**]**

Payment: By one or a combination of the following items (described in the Option Agreement):

x By cash, check, bank draft or money order payable to the Company

x Pursuant to a Regulation T Program if the shares are publicly traded

x By delivery of already-owned shares if the shares are publicly traded

x If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein. By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

BELLICUM PHARMACEUTICALS, INC.	**OPTIONHOLDER:**
By:_____ Signature	_____ Signature
Title:_____	
Date:_____	Date:_____

ATTACHMENTS: Option Agreement, 2019 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I
BELLICUM PHARMACEUTICALS, INC.
2019 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, Bellicum Pharmaceuticals, Inc.(the "***Company***") has granted you an option under its 2019 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. EXERCISE PRIOR TO VESTING ("EARLY EXERCISE"). If permitted in your Grant Notice (*i.e.*, the "Exercise Schedule" indicates "Early Exercise Permitted") and subject to the provisions of your option, you may elect at any time that is both (i) during the period of your Continuous Service and (ii) during the term of your option, to exercise all or part of your option, including the unvested portion of your option; *provided, however,* that:

a. a partial exercise of your option will be deemed to cover first vested shares of Common Stock and then the earliest vesting installment of unvested shares of Common Stock;

b. any shares of Common Stock so purchased from installments that have not vested as of the date of exercise will be subject to the purchase option in favor of the Company as described in the Company's form of Early Exercise Stock Purchase Agreement;

c. you will enter into the Company's form of Early Exercise Stock Purchase Agreement with a vesting schedule that will result in the same vesting as if no early exercise had occurred; and

d. if your option is an Incentive Stock Option, then, to the extent that the aggregate Fair Market Value (determined at the Date of Grant) of the shares of Common Stock with respect to which your option plus all other Incentive Stock Options you hold are exercisable for the first time by you during any calendar year (under all plans of the Company and its Affiliates) exceeds one hundred thousand dollars ($100,000), your option(s) or portions thereof that exceed such limit (according to the order in which they were granted) will be treated as Nonstatutory Stock Options.

5. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner ***permitted by your Grant Notice,*** which may include one or more of the following:

a. Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

b. Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

c. If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

6. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

7. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

8. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

a. immediately upon the termination of your Continuous Service for Cause;

b. three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 8(d) below); *provided, however*, that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further*, if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

c. twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 8(d)) below;

d. eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

e. the Expiration Date indicated in your Grant Notice; or

f. the day before the tenth (10th) anniversary of the Date of Grant.

If your option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the Date of Grant and ending on the day three (3) months before the date of your option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability. The Company has provided for extended exercisability of your option under certain circumstances for your benefit but cannot guarantee that your option will necessarily be treated as an Incentive Stock Option if you continue to provide

services to the Company or an Affiliate as a Consultant or Director after your employment terminates or if you otherwise exercise your option more than three (3) months after the date your employment with the Company or an Affiliate terminates.

9. EXERCISE.

a. You may exercise the vested portion of your option (and the unvested portion of your option if your Grant Notice so permits) during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

b. By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

c. If your option is an Incentive Stock Option, by exercising your option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the Date of Grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your option.

d. By accepting your option you agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any shares of Common Stock or other securities of the Company held by you, for a period of one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2241 or NYSE Member Rule 472 or any successor or similar rules or regulation (the "***Lock-Up Period***"); *provided, however*, that nothing contained in this section will prevent the exercise of a repurchase option, if any, in favor of the Company during the Lock-Up Period. You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your shares of Common Stock until the end of such period.

You also agree that any transferee of any shares of Common Stock (or other securities) of the Company held by you will be bound by this Section 9(d). The underwriters of the Company's stock are intended third party beneficiaries of this Section 9(d) and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

10. TRANSFERABILITY. Except as otherwise provided in this Section 10, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

a. Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

b. Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement. If this option is an Incentive Stock Option, this option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

c. Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

11. CHANGE IN CONTROL.

a. If a Change in Control occurs and immediately prior to or within twelve (12) months after, the effective time of such Change in Control your Continuous Service terminates due to an involuntary termination (not including death or Disability) without Cause or due to a voluntary termination with Good Reason, then, as of the date of termination of Continuous Service, the vesting and exercisability of your option will be accelerated in full.

b. "***Good Reason***" means that one or more of the following are undertaken by the Company (or successor to the Company, if applicable) without your express written consent: (i) a material reduction in your annual base salary; *provided, however*, that Good Reason will not be deemed to have occurred in the event of a reduction in your annual base salary that is pursuant to a salary reduction program affecting substantially all of the employees of the Company and that does not adversely affect you to a greater extent than other similarly situated employees; (ii) a material reduction in your authority, duties or responsibilities; (iii) any failure by the Company to continue in effect any material benefit plan or program, including incentive plans or plans with respect to the receipt of securities of the Company, in which you were participating immediately prior to the effective date of the Change in Control (hereinafter referred to as "***Benefit Plans***"), or the taking of any action by the Company that would adversely affect your participation in or reduce your benefits under the Benefit Plans or deprive you of any fringe benefit that you enjoyed immediately prior to the effective date of the Change in Control; *provided*, *however*, that Good Reason will not be deemed to have occurred if the Company provides for your participation in benefit plans and programs that, taken as a whole, are comparable to the Benefit Plans; (iv) a relocation of your principal place of employment with the Company (or

successor to the Company, if applicable) to a place that increases your one-way commute by more than fifty (50) miles as compared to your then-current principal place of employment immediately prior to such relocation, except for required travel by you on the Company's business to an extent substantially consistent with your business travel obligations prior to the effective date of the Change in Control; or (v) a material breach by the Company of any provision of the Plan or the Option Agreement or any other material agreement between you and the Company concerning the terms and conditions of your employment or service with the Company.

c. If any payment or benefit you would receive from the Company or otherwise in connection with a Change in Control or other similar transaction (a "***280G Payment***") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "***Excise Tax***"), then any such 280G Payment (a "***Payment***") shall be equal to the Reduced Amount. The "***Reduced Amount***" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in your receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "***Reduction Method***") that results in the greatest economic benefit for you. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "***Pro Rata Reduction Method***").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for you as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (e.g., being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A of the Code shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A of the Code.

Unless you and the Company agree on an alternative accounting firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the change of control transaction triggering the Payment shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the change of control transaction, the Company shall appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such accounting firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to you and the Company within fifteen (15) calendar days after the date on which your right to a 280G

Payment becomes reasonably likely to occur (if requested at that time by you or the Company) or such other time as requested by you or the Company.

If you receive a Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section 11(b) and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, you shall promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of the first paragraph of this Section 11(b) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) in the first paragraph of this Section 11(b), you shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

12. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

13. WITHHOLDING OBLIGATIONS.

a. At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a "same day sale" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sumsrequired to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

b. If this option is a Nonstatutory Stock Option, then upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the maximum amount of tax required to be withheld by law (or such other amount as may be permitted while still avoiding classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

c. You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

14. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

15. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

16. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd-Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any compensation recovery policy otherwise required by applicable law and any recoupment or clawback policy adopted by the Company (whether or not required by applicable law).

17. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

18. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

19. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full

voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

20. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. MISCELLANEOUS.

a. The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

b. You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

c. You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

d. This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

e. All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Stock Option Grant Notice to which it is attached.

ATTACHMENT II

2019 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

Bellicum Pharmaceuticals, Inc.
Life Sciences Plaza
2130 West Holcombe Boulevard, Suite 850
Houston, Texas 77030 Date of Exercise: _____

This constitutes notice to Bellicum Pharmaceuticals, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive o	Nonstatutory o
Stock option dated:	_____	_____
Number of Shares as to which option is exercised:	_____	_____
Certificates to be issued in name of:	_____	_____
Total exercise price:	$_____	$_____
Cash payment delivered herewith:	$_____	$_____
[Value of _____ Shares delivered herewith:	$_____	$_____]
[Value of _____ Shares pursuant to net exercise[2]:	$_____	$_____]
[Regulation T Program (cashless exercise[3]):	$_____	$_____]

[1] Shares must meet the public trading requirements set forth in the option. Shares must be valued in accordance with the terms of the option being exercised, and must be owned free and clear of any liens, claims, encumbrances or security interests. Certificates must be endorsed or accompanied by an executed assignment separate from certificate.
[2] The option must be a Nonstatutory Stock Option, and Bellicum Pharmaceuticals, Inc. must have established net exercise procedures at the time of exercise, in order to utilize this payment method.
[3] Shares must meet the public trading requirements set forth in the option.

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the Bellicum Pharmaceuticals, Inc. 2019 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an incentive stock option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

Very truly yours,

_____

BELLICUM PHARMACEUTICALS, INC.
RESTRICTED STOCK UNIT GRANT NOTICE
(2019 EQUITY INCENTIVE PLAN)

Bellicum Pharmaceuticals, Inc. (the "***Company***"), pursuant to Section 6(b) of the Company's 2019 Equity Incentive Plan (the "***Plan***"), hereby awards to Participant a Restricted Stock Unit Award for the number of shares of the Company's Common Stock ("***Restricted Stock Units***") set forth below (the "***Award***"). The Award is subject to all of the terms and conditions as set forth in this notice of grant (this "***Restricted Stock Unit Grant Notice***") and in the Plan and the Restricted Stock Unit Award Agreement (the "***Award Agreement***"), both of which are attached hereto and incorporated herein in their entirety. Capitalized terms not otherwise defined herein shall have the meanings set forth in the Plan or the Award Agreement. In the event of any conflict between the terms in the Award and the Plan, the terms of the Plan shall control.

Participant: _____
Date of Grant: _____
Grant Number: _____
Vesting Commencement Date: _____
Number of Restricted Stock Units: _____

Vesting Schedule: [25% of the Restricted Stock Units will vest on the one year anniversary of the earlier of the (i) Date of Grant and (ii) Vesting Commencement Date and 25% of the Restricted Stock Units will vest on each of the two, three and four year anniversaries of the Vesting Commencement Date, subject to the Participant's Continuous Service through each such vesting date]

Issuance Schedule: Subject to any Capitalization Adjustment, one share of Common Stock (or its cash equivalent, at the discretion of the Company) will be issued for each Restricted Stock Unit that vests at the time set forth in Section 6 of the Award Agreement.

Additional Terms/Acknowledgements: Participant acknowledges receipt of, and understands and agrees to, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan. Participant further acknowledges that as of the Date of Grant, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan set forth the entire understanding between Participant and the Company regarding the acquisition of the Common Stock pursuant to the Award specified above and supersede all prior oral and written agreements on the terms of this Award with the exception, if applicable, of (i) the written employment agreement, offer letter or other written agreement entered into between the Company and Participant specifying the terms that should govern this specific Award, (ii) restricted stock unit awards or options previously granted and delivered to Participant, and (iii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law.

By accepting this Award, Participant acknowledges having received and read the Restricted Stock Unit Grant Notice, the Award Agreement and the Plan and agrees to all of the terms and conditions set forth in these documents. Participant consents to receive

Plan documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

BELLICUM PHARMACEUTICALS, INC.

By:_____
Signature
Title:_____
Date:_____

PARTICIPANT

_____
Signature

Date:_____

ATTACHMENTS: Award Agreement and 2019 Equity Incentive Plan

BELLICUM PHARMACEUTICALS, INC.
2019 EQUITY INCENTIVE PLAN
RESTRICTED STOCK UNIT AWARD AGREEMENT

Pursuant to the Restricted Stock Unit Grant Notice (the "***Grant Notice***") and this Restricted Stock Unit Award Agreement (the "***Agreement***"), Bellicum Pharmaceuticals, Inc. (the "***Company***") has awarded you ("***Participant***") a Restricted Stock Unit Award (the "***Award***") pursuant to Section 6(b) of the Company's 2019 Equity Incentive Plan (the "***Plan***") for the number of Restricted Stock Units/shares indicated in the Grant Notice. Capitalized terms not explicitly defined in this Agreement or the Grant Notice shall have the same meanings given to them in the Plan. The terms of your Award, in addition to those set forth in the Grant Notice, are as follows.

1. GRANT OF THE AWARD. This Award represents the right to be issued on a future date one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 below) as indicated in the Grant Notice. As of the Date of Grant, the Company will credit to a bookkeeping account maintained by the Company for your benefit (the "***Account***") the number of Restricted Stock Units/shares of Common Stock subject to the Award. Notwithstanding the foregoing, the Company reserves the right to issue you the cash equivalent of Common Stock, in part or in full satisfaction of the delivery of Common Stock in connection with the vesting of the Restricted Stock Units, and, to the extent applicable, references in this Agreement and the Grant Notice to Common Stock issuable in connection with your Restricted Stock Units will include the potential issuance of its cash equivalent pursuant to such right. This Award was granted in consideration of your services to the Company.

2. VESTING. Subject to the limitations contained herein, your Award will vest, if at all, in accordance with the vesting schedule provided in the Grant Notice, provided that vesting will cease upon the termination of your Continuous Service. Upon such termination of your Continuous Service, the Restricted Stock Units/shares of Common Stock credited to the Account that were not vested on the date of such termination will be forfeited at no cost to the Company and you will have no further right, title or interest in or to such underlying shares of Common Stock.

3. NUMBER OF SHARES. The number of Restricted Stock Units/shares subject to your Award may be adjusted from time to time for Capitalization Adjustments, as provided in the Plan. Any additional Restricted Stock Units, shares, cash or other property that becomes subject to the Award pursuant to this Section 3, if any, shall be subject, in a manner determined by the Board, to the same forfeiture restrictions, restrictions on transferability, and time and manner of delivery as applicable to the other Restricted Stock Units and shares covered by your Award. Notwithstanding the provisions of this Section 3, no fractional shares or rights for fractional shares of Common Stock shall be created pursuant to this Section 3. Any fraction of a share will be rounded down to the nearest whole share.

4. SECURITIES LAW COMPLIANCE. You may not be issued any Common Stock under your Award unless the shares of Common Stock underlying the Restricted Stock Units are either (i) then registered under the Securities Act, or (ii) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. Your Award must also comply with other applicable laws and regulations governing the Award, and you shall not receive such Common Stock if the Company determines that such receipt would not be in material compliance with such laws and regulations.

5. TRANSFER RESTRICTIONS. Prior to the time that shares of Common Stock have been delivered to you, you may not transfer, pledge, sell or otherwise dispose of this Award or the shares issuable in respect of your Award, except as expressly provided in this Section 5. For example, you may not use shares that may be issued in respect of your Restricted Stock Units as security for a loan. The restrictions on transfer set forth herein will lapse upon delivery to you of shares in respect of your vested Restricted Stock Units.

a. Death. Your Award is transferable by will and by the laws of descent and distribution. At your death, vesting of your Award will cease and your executor or administrator of your estate shall be entitled to receive, on behalf of your estate, any Common Stock or other consideration that vested but was not issued before your death.

b. Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your right to receive the distribution of Common Stock or other consideration hereunder, pursuant to a domestic relations order, marital settlement agreement or other divorce or separation instrument as permitted by applicable law that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this Award with the Company General Counsel prior to finalizing the domestic relations order or marital settlement agreement to verify that you may make such transfer, and if so, to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

6. DATE OF ISSUANCE.

a. The issuance of shares in respect of the Restricted Stock Units is intended to comply with Treasury Regulations Section 1.409A-1(b)(4) and will be construed and administered in such a manner.

Subject to the satisfaction of the Withholding Taxes set forth in Section 11 of this Agreement, in the event one or more Restricted Stock Units vests, the Company shall issue to you one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 above). Each issuance date determined by this paragraph is referred to as an "***Original Issuance Date***".

b. If the Original Issuance Date falls on a date that is not a business day, delivery shall instead occur on the next following business day. In addition, if:

1) the Original Issuance Date does not occur (1) during an "open window period" applicable to you, as determined by the Company in accordance with the Company's then-effective policy on trading in Company securities, or (2) on a date when you are otherwise permitted to sell shares of Common Stock on an established stock exchange or stock market (including but not limited to under a previously established written trading plan that meets the requirements of Rule 10b5-1 under the Exchange Act and was entered into in compliance with the Company's policies (a "***10b5-1 Plan***")), *and*

2) either (1) Withholding Taxes do not apply, or (2) the Company decides, prior to the Original Issuance Date, (A) not to satisfy the Withholding Taxes by withholding shares of Common Stock from the shares otherwise due,

on the Original Issuance Date, to you under this Award, and (B) not to permit you to then effect a sale on the market under a 10b5-1 Plan and (C) not to permit you to pay your Withholding Taxes in cash,

then the shares that would otherwise be issued to you on the Original Issuance Date will not be delivered on such Original Issuance Date and will instead be delivered on the first business day when you are not prohibited from selling shares of the Company's Common Stock in the open public market, but in no event later than December 31 of the calendar year in which the Original Issuance Date occurs (that is, the last day of your taxable year in which the Original Issuance Date occurs), or, if and only if permitted in a manner that complies with Treasury Regulations Section 1.409A-1(b)(4), no later than the date that is the 15th day of the third calendar month of the applicable year following the year in which the shares of Common Stock under this Award are no longer subject to a "substantial risk of forfeiture" within the meaning of Treasury Regulations Section 1.409A-1(d).

c. The form of delivery (*e.g.*, a stock certificate or electronic entry evidencing such shares) shall be determined by the Company.

7. DIVIDENDS. You shall receive no benefit or adjustment to your Award with respect to any cash dividend, stock dividend or other distribution except as provided in the Plan with respect to a Capitalization Adjustment.

8. RESTRICTIVE LEGENDS. The shares of Common Stock issued under your Award shall be endorsed with appropriate legends as determined by the Company.

9. EXECUTION OF DOCUMENTS. You hereby acknowledge and agree that the manner selected by the Company by which you indicate your consent to your Grant Notice is also deemed to be your execution of your Grant Notice and of this Agreement. You further agree that such manner of indicating consent may be relied upon as your signature for establishing your execution of any documents to be executed in the future in connection with your Award.

10. AWARD NOT A SERVICE CONTRACT.

a. Nothing in this Agreement (including, but not limited to, the vesting of your Award or the issuance of the shares in respect of your Award), the Plan or any covenant of good faith and fair dealing that may be found implicit in this Agreement or the Plan shall: (i) confer upon you any right to continue in the employ or service of, or affiliation with, the Company or an Affiliate; (ii) constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or affiliation; (iii) confer any right or benefit under this Agreement or the Plan unless such right or benefit has specifically accrued under the terms of this Agreement or Plan; or (iv) deprive the Company of the right to terminate you at will and without regard to any future vesting opportunity that you may have.

b. By accepting this Award, you acknowledge and agree that the right to continue vesting in the Award pursuant to the vesting schedule provided in the Grant Notice may not be earned unless (in addition to any other conditions described in the Grant Notice and this Agreement) you continue as an employee, director or consultant at the will of the Company and affiliate, as applicable (not through the act of being hired, being granted this Award or any other award or benefit) and that the Company has the right to reorganize, sell, spin-out or otherwise restructure one or more of its businesses or Affiliates at any

time or from time to time, as it deems appropriate (a "***reorganization***"). You acknowledge and agree that such a reorganization could result in the termination of your Continuous Service, or the termination of Affiliate status of your employer and the loss of benefits available to you under this Agreement, including but not limited to, the termination of the right to continue vesting in the Award. You further acknowledge and agree that this Agreement, the Plan, the transactions contemplated hereunder and the vesting schedule set forth herein or any covenant of good faith and fair dealing that may be found implicit in any of them do not constitute an express or implied promise of continued engagement as an employee or consultant for the term of this Agreement, for any period, or at all, and shall not interfere in any way with the Company's right to terminate your Continuous Service at any time, with or without your cause or notice, or to conduct a reorganization.

11. WITHHOLDING TAXES.

a. On each vesting date, and on or before the time you receive a distribution of the shares of Common Stock in respect of your Restricted Stock Units, and at any other time as reasonably requested by the Company in accordance with applicable tax laws, you hereby authorize any required withholding from the Common Stock issuable to you and/or otherwise agree to make adequate provision, including in cash, for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or any Affiliate that arise in connection with your Award (the "***Withholding Taxes***"). Additionally, the Company or any Affiliate may, in its sole discretion, satisfy all or any portion of the Withholding Taxes obligation relating to your Award by any of the following means or by a combination of such means (and by accepting this Award you hereby authorize any of the following methods of satisfying the Withholding Taxes): (i) withholding from any compensation otherwise payable to you by the Company or an Affiliate; (ii) causing you to tender a cash payment; (iii) permitting or requiring you to enter into a "same day sale" commitment, if applicable, with a broker-dealer that is a member of the Financial Industry Regulatory Authority (a "***FINRA Dealer***") whereby you irrevocably elect to sell a portion of the shares to be delivered in connection with your Restricted Stock Units to satisfy the Withholding Taxes and whereby the FINRA Dealer irrevocably commits to forward the proceeds necessary to satisfy the Withholding Taxes directly to the Company and/or its Affiliates; or (iv) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to you in connection with the Award with a Fair Market Value (measured as of the date shares of Common Stock are issued pursuant to Section 6) not in excess of the maximum amount of tax that may be required to be withheld by law (or such other amount as may be permitted while sill avoiding classification of the Award as a liability for financial accounting purposes); and *provided*, further, that to the extent necessary to qualify for an exemption from application of Section 16(b) of the Exchange Act, if applicable, such share withholding procedure will be subject to the express prior approval of the Board or the Company's Compensation Committee.

b. Unless the Withholding Taxes are satisfied, the Company shall have no obligation to deliver to you any Common Stock or any other consideration pursuant to this Award.

c. In the event the Withholding Taxes arise prior to the delivery to you of Common Stock or it is determined after the delivery of Common Stock to you that the amount of the Withholding Taxes was greater than the amount withheld by the Company, you agree to indemnify and hold the Company harmless from any failure by the Company to withhold the proper amount.

12. TAX CONSEQUENCES. The Company has no duty or obligation to minimize the tax consequences to you of this Award and shall not be liable to you for any adverse tax consequences to you arising in connection with this Award. You are hereby advised to consult with your own personal tax, financial and/or legal advisors regarding the tax consequences of this Award and by signing the Grant Notice, you have agreed that you have done so or knowingly and voluntarily declined to do so. You understand that you (and not the Company) shall be responsible for your own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

13. LOCK-UP PERIOD. By accepting your Award, you agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any Common Shares or other securities of the Company held by you, for a period of one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2241, NYSE Member Rule 472 or any successor or similar rules or regulation (the "***Lock-Up Period***"); *provided*, *however*, that nothing contained in this section will prevent the exercise of a repurchase option, if any, in favor of the Company during the Lock-Up Period. You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your Common Shares until the end of such period. You also agree that any transferee of any Common Shares (or other securities) of the Company held by you will be bound by this Section 13. The underwriters of the Company's shares are intended third party beneficiaries of this Section 13 and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

14. UNSECURED OBLIGATION. Your Award is unfunded, and as a holder of a vested Award, you shall be considered an unsecured creditor of the Company with respect to the Company's obligation, if any, to issue shares or other property pursuant to this Agreement. You shall not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this Agreement until such shares are issued to you pursuant to Section 6 of this Agreement. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this Agreement, and no action taken pursuant to its provisions, shall create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

15. NOTICES. Any notice or request required or permitted hereunder shall be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this Award by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this Award, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

16. HEADINGS. The headings of the Sections in this Agreement are inserted for convenience only and shall not be deemed to constitute a part of this Agreement or to affect the meaning of this Agreement.

17. MISCELLANEOUS.

a. The rights and obligations of the Company under your Award shall be transferable by the Company to any one or more persons or entities, and all covenants and agreements hereunder shall inure to the benefit of, and be enforceable by, the Company's successors and assigns.

b. You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your Award.

c. You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

d. This Agreement shall be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

e. All obligations of the Company under the Plan and this Agreement shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

18. GOVERNING PLAN DOCUMENT. Your Award is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Award, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. Your Award (and any compensation paid or shares issued under your Award) is subject to recoupment in accordance with The Dodd-Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any compensation recovery policy otherwise required by applicable law and any recoupment or clawback policy adopted by the Company (whether or not required by applicable law). No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntarily terminate employment upon a resignation for "good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

19. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of the Award subject to this Agreement shall not be included as compensation, earnings, salaries, or other similar terms used when calculating benefits under any employee benefit plan (other than the Plan) sponsored by the Company or any Affiliate except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any or all of the employee benefit plans of the Company or any Affiliate.

20. SEVERABILITY. If all or any part of this Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of this Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. OTHER DOCUMENTS. You hereby acknowledge receipt or the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

22. AMENDMENT. This Agreement may not be modified, amended or terminated except by an instrument in writing, signed by you and by a duly authorized representative of the Company. Notwithstanding the foregoing, this Agreement may be amended solely by the Board by a writing which specifically states that it is amending this Agreement, so long as a copy of such amendment is delivered to you, and provided that, except as otherwise expressly provided in the Plan, no such amendment materially adversely affecting your rights hereunder may be made without your written consent. Without limiting the foregoing, the Board reserves the right to change, by written notice to you, the provisions of this Agreement in any way it may deem necessary or advisable to carry out the purpose of the Award as a result of any change in applicable laws or regulations or any future law, regulation, ruling, or judicial decision, provided that any such change shall be applicable only to rights relating to that portion of the Award which is then subject to restrictions as provided herein.

23. SECTION 409A OF THE CODE. This Award is intended to be exempt from the application of Section 409A of the Code, including but not limited to by reason of complying with the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4) and any ambiguities herein shall be interpreted accordingly. Notwithstanding the foregoing, if it is determined that the Award fails to satisfy the requirements of the short-term deferral rule and is otherwise not exempt from, and determined to be deferred compensation subject to Section 409A of the Code, this Award shall comply with Section 409A to the extent necessary to avoid adverse personal tax consequences and any ambiguities herein shall be interpreted accordingly. If it is determined that the Award is deferred compensation subject to Section 409A and you are a "Specified Employee" (within the meaning set forth in Section 409A(a)(2)(B)(i) of the Code) as of the date of your "Separation from Service" (within the meaning of Treasury Regulation Section 1.409A-1(h) and without regard to any alternative definition thereunder), then the issuance of any shares that would otherwise be made upon the date of your Separation from Service or within the first six (6) months thereafter will not be made on the originally scheduled date(s) and will instead be issued in a lump sum on the date that is six (6) months and one day after the date of the Separation from Service, with the balance of the shares issued thereafter in accordance with the original vesting and issuance schedule set forth above, but if and only if such delay in the issuance of the shares is necessary to avoid the imposition of adverse taxation on you in respect of the shares under Section 409A of the Code. Each installment of shares that vests is intended to constitute a "separate payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2).

* * * * *

This Restricted Stock Unit Award Agreement shall be deemed to be signed by the Company and the Participant upon the signing by the Participant of the Restricted Stock Unit Grant Notice to which it is attached.

ATTACHMENT

2019 EQUITY INCENTIVE PLAN

Exhibit 21.1

Subsidiaries of Bellicum Pharmaceuticals, Inc.
as of December 31, 2019

Bellicum Pharma Limited, a private limited company organized under the laws of the United Kingdom

Bellicum Pharma GmbH, a private limited liability company organized under the laws of Germany

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements (Form S-3 Nos. 333-219020, 333-226652, and 333-232771) of Bellicum Pharmaceuticals, Inc., and
(2) Registration Statements (Form S-8 Nos. 333-201036, 333-216656, 333-218772, 333-220170, 333-223636, 333-225554, 333-231272, 333-232304, 333-232774, and 333-236149) pertaining to the 2006 Stock Option Plan, 2011 Stock Option Plan, 2014 Equity Incentive Plan, as amended, 2014 Employee Stock Purchase Plan, and 2019 Equity Incentive Plan of Bellicum Pharmaceuticals, Inc.

of our reports dated March 12, 2020, with respect to the consolidated financial statements of Bellicum Pharmaceuticals, Inc. and the effectiveness of internal control over financial reporting of Bellicum Pharmaceuticals, Inc. included in this Annual Report (Form 10-K) of Bellicum Pharmaceuticals, Inc. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Houston, Texas
March 12, 2020

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Richard A. Fair, certify that:

1. I have reviewed this Annual Report on Form 10-K of Bellicum Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 12, 2020

/s/Richard A. Fair

Richard A. Fair
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Atabak Mokari, certify that:

1. I have reviewed this Annual Report on Form 10-K of Bellicum Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 12, 2020

/s/ Atabak Mokari

Atabak Mokari
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Richard A. Fair, Chief Executive Officer of Bellicum Pharmaceuticals, Inc. (the "Registrant"), do hereby certify in accordance with 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based upon my knowledge:

(1) this Annual Report on Form 10-K of the Registrant, to which this certification is attached as an exhibit (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date: March 12, 2020

/s/ Richard A. Fair

Richard A. Fair

President and Chief Executive Officer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Atabak Mokari, Chief Financial Officer of Bellicum Pharmaceuticals, Inc. (the "Registrant"), do hereby certify in accordance with 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based upon my knowledge:

(1) this Annual Report on Form 10-K of the Registrant, to which this certification is attached as an exhibit (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date: March 12, 2020

/s/ Atabak Mokari

Atabak Mokari
Chief Financial Officer
(Principal Financial Officer)

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.