

BELLICUM PHARMACEUTICALS, INC

Form 424B5

April 18, 2018

[Table of Contents](#)

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-219021

PROSPECTUS SUPPLEMENT

(To Prospectus dated July 12, 2017)

8,000,000 Shares

Common Stock

\$7.50 per share

We are selling 8,000,000 shares of our common stock in this offering.

We have granted the underwriters an option for a period of 30 days to purchase up to 1,200,000 additional shares.

Our common stock is quoted on The Nasdaq Global Market under the symbol BLCM. The last reported sale price of our common stock on The Nasdaq Global Market on April 17, 2018 was \$7.84 per share.

Investing in our common stock involves risks. See [Risk Factors](#) beginning on page S-8.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or determined if this prospectus supplement or the accompanying prospectus are truthful or complete. Any representation to the contrary is a criminal offense.

	Per Share	Total
Public Offering Price	\$ 7.50	\$ 60,000,000
Underwriting Discounts and Commissions ⁽¹⁾	\$ 0.45	\$ 3,600,000
Proceeds to Bellicum (before expenses)	\$ 7.05	\$ 56,400,000

(1) The underwriters will also be reimbursed for certain expenses incurred in this offering. See Underwriting for details.

The underwriters expect to deliver the shares to purchasers on or about April 20, 2018 through the book-entry facilities of The Depository Trust Company.

Joint Book-Running Managers

Citigroup

Jefferies

Co-Managers

Guggenheim Securities

Ladenburg Thalmann

Raymond James

April 17, 2018

Table of Contents

We are responsible for the information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus and in any free writing prospectus we prepare or authorize. We have not authorized anyone to provide you with different information, and we take no responsibility for any other information others may give you. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in or incorporated by reference into this prospectus supplement or the accompanying prospectus is accurate as of any date other than its date.

TABLE OF CONTENTS**Prospectus Supplement**

	Page
<u>About this Prospectus Supplement</u>	S-ii
<u>Forward-Looking Statements</u>	S-1
<u>Prospectus Supplement Summary</u>	S-3
<u>Risk Factors</u>	S-8
<u>Use of Proceeds</u>	S-9
<u>Dividend Policy</u>	S-9
<u>Dilution</u>	S-10
<u>Executive Officers and Directors</u>	S-11
<u>Transactions with Related Persons</u>	S-15
<u>Underwriting</u>	S-16
<u>Legal Matters</u>	S-22
<u>Experts</u>	S-22
<u>Incorporation of Certain Information by Reference</u>	S-22

Prospectus

<u>About this Prospectus</u>	i
<u>Summary</u>	1
<u>Risk Factors</u>	6
<u>Special Note Regarding Forward-Looking Statements</u>	6
<u>Ratio of Earnings to Fixed Charges</u>	7
<u>Use of Proceeds</u>	7
<u>Description of Capital Stock</u>	7
<u>Description of Debt Securities</u>	13
<u>Description of Warrants</u>	19
<u>Legal Ownership of Securities</u>	21
<u>Plan of Distribution</u>	24
<u>Legal Matters</u>	26
<u>Experts</u>	26
<u>Where You Can Find More Information</u>	26
<u>Incorporation of Certain Information by Reference</u>	27
<u>Disclosure of Commission's Position of Indemnification for Securities Act Liability</u>	27

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of common stock and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated July 12, 2017, including the documents incorporated by reference therein, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in the accompanying prospectus the statement in the document having the later date modifies or supersedes the earlier statement.

We have not, and the underwriters have not, authorized anyone to provide you with information different than or inconsistent with the information contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the section of this prospectus supplement entitled Incorporation of Certain Information by Reference.

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of our common stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise stated, all references in this prospectus to we, us, our, Bellicum, Bellicum Pharmaceuticals, the Company and similar designations refer to Bellicum Pharmaceuticals, Inc. and its subsidiaries on a consolidated basis. This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein contain common law, unregistered trademarks for Bellicum Pharmaceuticals based on use of the trademarks in the United States. Other trademarks referred to in this prospectus supplement or the accompanying prospectus or the information incorporated by reference herein and therein are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus supplement, the accompanying prospectus and the information incorporated by

Table of Contents

reference herein and therein, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Notice to Prospective Investor in the European Economic Area

This prospectus supplement and the accompanying prospectus are not prospectuses for the purpose of the Prospectus Directive (as defined below). This prospectus supplement and the accompanying prospectus have been prepared on the basis that any offer of shares in any Member State of the European Economic Area (the "EEA") which has implemented the Prospectus Directive (each, a "Relevant Member State") will only be made to a legal entity which is a qualified investor under the Prospectus Directive ("Qualified Investors"). Accordingly any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus supplement and the accompanying prospectus may only do so with respect to Qualified Investors. Neither we nor the underwriters have authorized, nor do we or the underwriters authorize, the making of any offer of shares other than to Qualified Investors. The expression "Prospectus Directive" means Directive 2003/71/EC (as amended, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

MIFID II Product Governance

Any distributor subject to Directive 2014/65/EU, as amended ("MiFID II") that is offering, selling or recommending the shares of common stock is responsible for undertaking its own target market assessment in respect of the shares of common stock and determining its own distribution channels for the purposes of the MiFID II product governance rules under Commission Delegated Directive (EU) 2017/593 ("Delegated Directive"). Neither the Company nor the underwriters make any representations or warranties as to a distributor's compliance with the Delegated Directive.

Notice to Prospective Investors in the United Kingdom

The communication of this prospectus supplement, the accompanying prospectus and any other document or materials relating to the issue of the shares offered hereby is not being made, and such documents and/or materials have not been approved, by an authorized person for the purposes of section 21 of the United Kingdom's Financial Services and Markets Act 2000, as amended. Accordingly, such documents and/or materials are not being distributed to, and must not be passed on to, the general public in the United Kingdom. The communication of such documents and/or materials as a financial promotion is only being made to those persons in the United Kingdom falling within the definition of investment professionals (as defined in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Financial Promotion Order")), or within Article 49(2)(a) to (d) of the Financial Promotion Order, or to any other persons to whom it may otherwise lawfully be made under the Financial Promotion Order (all such persons together being referred to as "relevant persons"). In the United Kingdom, the shares offered hereby are only available to, and any investment or investment activity to which this prospectus supplement and the accompanying prospectus relate will be engaged in only with, relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this prospectus supplement or the accompanying prospectus or any of their contents.

Table of Contents

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, the documents incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the safe harbor created by those sections. We may, in some cases, use words such as anticipate, believe, could, estimate, expect, intend, may, plan, potential, 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 may 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 BPX-501 and any other 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;

Edgar Filing: BELLICUM PHARMACEUTICALS, INC - Form 424B5

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 expectations regarding the period during which we qualify as an emerging growth company under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act;

our use of cash and other resources, including the use of proceeds from this offering; 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 date of this prospectus supplement and are subject to risks and uncertainties. We discuss many of these risks in greater detail under "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

S-1

Table of Contents

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 read this prospectus supplement and the accompanying prospectus together with the documents that we have filed with the SEC that are incorporated by reference and any free writing prospectus we have authorized for use in connection with a specific offering 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 prospectus supplement by these cautionary statements. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

S-2

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of our company and this offering, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including the risks described under the heading "Risk Factors," as well as the information included in any free writing prospectus that we have authorized for use in connection with this offering.

Overview

We are 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, as well as orphan inherited blood disorders. 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 safety and efficacy outcomes than are seen with current cellular immunotherapies.

We are developing next-generation product candidates in some of the most important areas of cellular immunotherapy, including chimeric antigen receptor T cell therapy, or CAR T, T cell receptors, or TCRs and hematopoietic stem cell transplantation, or HSCT. CAR T and TCR cell therapies are an innovative approach in which a patient's T cells are genetically modified to carry chimeric antigen receptors, or CARs, or TCRs which redirect the T cells against cancer cells. While high objective response rates have been reported in some hematological malignancies, serious and sometimes fatal toxicities have arisen in patients treated with CAR T cell therapies. These toxicities include instances in which the CAR T cells have caused high levels of cytokines due to over-activation, referred to as cytokine release syndrome, or CRS, neurologic toxicities and cases in which they have attacked healthy organs. In each case, these toxicities have sometimes resulted in death. In solid tumors, where the behavior of CAR T cells is particularly unpredictable and results have been inconsistent, researchers are developing enhanced CAR T cell approaches that raise even greater safety concerns. HSCT, also known as bone marrow transplantation, has for decades been curative for many patients with hematological cancers or orphan inherited blood disorders. However, adoption of HSCT to date has been limited by the risks of transplant-related morbidity and mortality from graft-versus-host-disease, or GvHD, and the potential for serious infections due to the lack of an effective immune system following a transplant.

Our proprietary CID platform is designed to address these challenges. Events inside a cell are 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, rimiducid, instead of by natural upstream signals. We include these molecular switches in the appropriate immune cells and deliver the cells to the patient in the manner of conventional cellular immunotherapy. We have developed two such switches: a safety switch, designed to initiate programmed cell death, or apoptosis, of the immunotherapy cells, and an activation switch, designed to stimulate activation and in some cases proliferation and/or persistence of the immunotherapy cells. Each of our product candidates incorporates one of these switches, for enhanced, real time control of safety and efficacy:

CaspaCIDE (also known as inducible Caspase-9, or iC9) is our safety switch, incorporated into our HSCT and TCR product candidates, and into academic CAR T collaborations, where it is inactive unless the patient experiences a serious side effect. In that event, rimiducid is administered to induce Caspase-9 and eliminate a majority of the cells, with the goal of attenuating the therapy and resolving the serious side effect.

Table of Contents

Our activation switch incorporated into our GoCAR-T product candidates (also known as inducible MyD88/CD40, or iMC), is designed to enable control of the activation and proliferation of the T cells through the scheduled administration of a course of rimiducid infusions that may continue until the desired patient outcome is achieved. In the event of emergence of side effects, the level of activation of the GoCAR-T cells is designed to be attenuated by extending the interval between rimiducid doses, reducing the dosage per infusion, or suspending further rimiducid administration.

In addition, we have an active research effort to develop other advanced molecular switch approaches, including a dual-switch that is designed to provide a user-controlled system for managing proliferation and/or persistence and safety of tumor antigen-specific CAR T cells.

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 clinical product candidates are described below.

BPX-501 is a CaspaCIDE product candidate designed as an adjunct T cell therapy administered after allogeneic HSCT. BPX-501 is designed to improve transplant outcomes by enhancing the recovery of the immune system following an HSCT procedure. BPX-501 addresses the risk of infusing donor T cells by enabling the elimination of donor T cells through the activation of the CaspaCIDE safety switch if there is an emergence of uncontrolled GvHD.

The European Commission has granted orphan drug designations to BPX-501 for treatment in HSCT, and for activator agent rimiducid for the treatment of GvHD. Additionally, BPX-501 and rimiducid have received orphan drug status from the U.S. Food and Drug Administration, or the FDA, as a combination replacement T-cell therapy for the treatment of immunodeficiency and GvHD after allogeneic HSCT.

Based on interactions with European Medicines Agency, or the EMA, we believe that data from the European arm of our BP-004 trial could form the basis of MAAs for BPX-501 and rimiducid for pediatric patients with certain orphan inherited blood disorders or treatment-refractory hematological cancers. In addition, the EMA's Committee for Medicinal Products for Human Use, or the CHMP, has agreed that review and approval under exceptional circumstances may be suitable, recognizing that a randomized trial may not be feasible in the pediatric haploidentical hematopoietic stem cell transplant setting. In place of a randomized trial, we are collecting data from a concurrent observational study in the pediatric matched unrelated donor hematopoietic stem cell transplant setting, which will include both retrospective patients and prospective patients. We expect to report updated results from the European BP-004 clinical trial in the fourth quarter of 2018 and to file MAAs for European marketing approvals in 2019.

We are currently planning additional clinical trials for BPX-501. In the adult malignant patient setting, we are designing a randomized, controlled trial in adults with acute myeloid leukemia, and potentially other hematological cancers, to compare outcomes in patients receiving a haplo-transplant with and without BPX-501. For the U.S. pediatric patient setting, we are designing a clinical trial, that we believe could be registrational, to evaluate BPX-501 in a distinct orphan disease population. We expect to initiate both of these clinical trials in the second half of 2018.

BPX-601 is a GoCAR-T product candidate containing our proprietary inducible MyD88/CD40, or iMC, activation switch, designed to treat solid tumors expressing prostate stem cell antigen, or PSCA. Preclinical data shows enhanced T cell proliferation, persistence and in vivo anti-tumor activity compared to traditional CAR T therapies. A Phase 1 clinical trial in patients with non-resectable pancreatic cancer is ongoing and we expect to report initial data from this clinical trial in the second half of 2018. In addition to pancreatic cancer, PSCA is expressed in several other solid tumor indications, including: gastric, esophageal, prostate and bladder cancers. In 2018 we are planning to expand the clinical development of BPX-601 to include additional PSCA expressing cancer types.

Table of Contents

BPX-701 is a CaspaCIDE-enabled natural high affinity TCR product candidate designed to target malignant cells expressing the preferentially-expressed antigen in melanoma, or PRAME. The ongoing Phase 1 clinical trial for BPX-701 is in adult patients with refractory or relapsed acute myeloid leukemia, or AML, and myelodysplastic syndromes, or MDS. We expect to report initial data from this clinical trial in the second half of 2018.

CD19 CAR T Program We are working with academic collaborators to establish clinical proof of concept for CaspaCIDE® in the CD19-expressing B cell malignancies setting. We believe that this strategy allows a cost-effective approach for clinical evaluation of CaspaCIDE in attenuating the acute toxicities of CD19-targeted therapies. As part of this strategy, in November 2016 we announced an expanded collaboration with Ospedale Pediatrico Bambino Gesù, or OPBG, a leading European pediatric research center and hospital. Clinical development of a CaspaCIDE-enabled CD19 CAR T cell therapy is ongoing at OPBG.

We have developed efficient and scalable processes to manufacture genetically modified T cells of high quality, which are currently being used to produce BPX-501, BPX-601 and BPX-701 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 T and TCR product candidates to create and develop first and best-in-class product candidates.

We have established in-house cell manufacturing and vector production capabilities at our headquarters facility in Houston, Texas. In the first quarter of 2017, the initial phase of the build-out was completed and we began manufacturing clinical trial material from this site. We completed the facility build-out in early 2018, and we expect that our facilities will meet our U.S. clinical trial and early commercialization requirements. For the European market, we plan to continue working with established contract manufacturers, with our U.S. manufacturing facility as a potential backup supply source.

Pipeline

The following table summarizes our product candidate pipeline:

Table of Contents

Recent Developments

On April 11, 2018, the FDA lifted the clinical hold on studies of our BPX-501 product candidate in the U.S. The FDA's decision followed consultation between us and the FDA and agreement on amendments to the study protocols, including guidance on monitoring and management of neurologic adverse events. We plan on working with U.S. clinical sites to resume patient recruitment based on the amended protocols. The FDA clinical hold did not affect the BP-004 registrational trial in Europe, which is fully enrolled and closed to recruitment.

Financial Update

While we have not finalized our full financial results for the quarter ended March 31, 2018, we expect to report that we had \$88.0 million of cash, cash equivalents and short-term investments as of March 31, 2018. This amount is preliminary, has not been audited and is subject to change in connection with the completion of our financial statements for the quarter ended March 31, 2018. In addition, our independent registered public accounting firm does not express an opinion or any other form of assurance with respect thereto. Accordingly, you should not place undue reliance on this information. Additional information and disclosures would be required for a more complete understanding of our financial position and results of operations as of March 31, 2018.

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. The contents of our website are not a part of, and are not incorporated into, this prospectus supplement or the accompanying prospectus, and you should not consider it part of this prospectus supplement or the accompanying prospectus and you should not rely on any such information in making any decisions of whether to purchase our securities. For further information regarding us and our financial information, you should refer to our recent filings with the SEC. See Incorporation of Certain Information by Reference.

We use various trademarks, service marks and trade names in our business, including without limitation Bellicum Pharmaceuticals and Bellicum. This prospectus supplement also contains trademarks, service marks and trade names of other businesses that are the property of their respective holders.

Table of Contents

THE OFFERING

Issuer	Bellicum Pharmaceuticals, Inc.
Common stock offered by us	8,000,000 shares
Common stock to be outstanding after this offering	41,285,177 shares
Underwriters' option to purchase additional shares	1,200,000 shares
Use of proceeds	We intend to use the net proceeds from this offering, together with our existing capital resources, to fund ongoing and planned BPX-501 clinical trials in both the European Union and U.S., Phase 1 clinical trials of controllable CAR T (BPX-601) and TCR (BPX-701) product candidates, IND/IMPd enabling studies and Phase 1 clinical trials for dual-switch CAR-T product candidates, research and development activities, preparation activities for potential future commercialization of BPX-501, and to fund working capital, including general corporate purposes. See Use of Proceeds.
Risk factors	Investing in our common stock involves a high degree of risk. See Risk Factors for a discussion of factors that you should consider before buying shares of our common stock.
Symbol on The Nasdaq Global Market	BLCM

The number of shares of common stock to be outstanding after this offering is based on 33,285,177 shares outstanding on December 31, 2017, and excludes as of that date:

5,286,472 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2017, at a weighted-average exercise price of \$12.35 per share of common stock;

111,250 shares of common stock issuable upon the vesting of outstanding restricted stock units as of December 31, 2017;

29,413 shares of common stock subject to repurchase by us as of December 31, 2017;

3,095,351 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan, as of December 31, 2017; and

460,027 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, as of December 31, 2017.

Except as otherwise noted, all information in this prospectus supplement assumes no exercise of the underwriters' option to purchase additional shares and no exercise of the outstanding stock options described above.

Table of Contents

RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, those contained in the section entitled **Risk Factors** in our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated herein by reference in its entirety, as well as any amendment or update to our risk factors reflected in subsequent filings with the SEC, all other information in this prospectus supplement, the accompanying prospectus, and the other documents incorporated by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. The occurrence of any of these risks could harm our business, financial condition, results of operations and growth prospects. In such an event, the market price of our common stock could decline and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations.*

Risks Relating to this Offering

If you purchase shares of common stock in this offering, you will experience immediate and substantial dilution in your investment. You will experience further dilution if we issue additional equity or equity-linked securities in the future.

Since the price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer immediate and substantial dilution with respect to the net tangible book value of the common stock you purchase in this offering. Based on the public offering price of \$7.50 per share and our net tangible book value as of December 31, 2017, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of \$4.09 per share with respect to the net tangible book value of the common stock. See the section entitled **Dilution** for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

If we issue additional shares of common stock, or securities convertible into or exchangeable or exercisable for shares of common stock, our stockholders, including investors who purchase shares of common stock in this offering, will experience additional dilution, and any such issuances may result in downward pressure on the price of our common stock. We also cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We will have broad discretion in the use of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, impair or delay our ability to develop our product candidates and cause the price of our common stock to decline. See the section entitled **Use of Proceeds**.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of shares of our common stock that we are offering will be approximately \$56.0 million, or approximately \$64.4 million if the underwriters exercise their option to purchase additional shares in full, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering, together with our existing capital resources, to fund ongoing and planned BPX-501 clinical trials in both the European Union and U.S., Phase 1 clinical trials of controllable CAR T (BPX-601) and TCR (BPX-701) product candidates, IND/IMPd enabling studies and Phase 1 clinical trials for dual-switch CAR-T product candidates, research and development activities, preparation activities for potential future commercialization of BPX-501, and to fund working capital, including general corporate purposes.

We may also use a portion of the net proceeds from this offering to acquire or license new product candidates or technology that could result in other product candidates, although we do not have current plans to do so.

Our expected use of the net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus supplement, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering, or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual use of the net proceeds will vary depending on numerous factors, including our ability to access additional financing, the relative success and cost of our research, preclinical and clinical development programs and whether we are able to enter into future licensing arrangements. As a result, our management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds of this offering. In addition, we might decide to postpone or not pursue clinical trials or preclinical activities if the net proceeds from this offering and any other sources of cash are less than expected.

Pending their use as described above, we plan to invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We do not anticipate declaring or paying, in the foreseeable future, any cash dividends on our capital stock. In addition, the terms of our loan and security agreement with Oxford Finance LLC 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. 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.

Table of Contents**DILUTION**

Our net tangible book value as of December 31, 2017 was approximately \$84.6 million, or \$2.54 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of December 31, 2017. Dilution with respect to net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of 8,000,000 shares of our common stock in this offering at the public offering price of \$7.50 per share and after deducting the underwriting discounts and commissions and our estimated offering expenses, our as adjusted net tangible book value as of December 31, 2017 would have been approximately \$140.6 million, or \$3.41 per share. This represents an immediate increase in net tangible book value of \$0.87 per share to existing stockholders and immediate dilution in net tangible book value of \$4.09 per share to new investors purchasing our common stock in this offering. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$ 7.50
Net tangible book value per share as of December 31, 2017	\$ 2.54
Increase in net tangible book value per share attributable to investors purchasing our common stock in this offering	\$ 0.87
As adjusted net tangible book value per share as of December 31, 2017 after this offering	\$ 3.41
Dilution per share to investors purchasing our common stock in this offering	\$ 4.09

If the underwriters exercise their option in full to purchase up to 1,200,000 additional shares of common stock, the as adjusted net tangible book value after this offering would be \$3.51 per share, representing an increase in net tangible book value of \$0.97 per share to existing stockholders and immediate dilution in net tangible book value of \$3.99 per share to new investors purchasing our common stock in this offering.

The number of shares of common stock to be outstanding after this offering is based on 33,285,177 shares outstanding on December 31, 2017, and excludes as of that date:

5,286,472 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2017, at a weighted-average exercise price of \$12.35 per share of common stock;

111,250 shares of common stock issuable upon the vesting of outstanding restricted stock units as of December 31, 2017;

29,413 shares of common stock subject to repurchase by us as of December 31, 2017;

3,095,351 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan, as of December 31, 2017; and

460,027 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, as of December 31, 2017.

Edgar Filing: BELLICUM PHARMACEUTICALS, INC - Form 424B5

To the extent that outstanding options are exercised, investors purchasing our common stock in this offering will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

S-10

Table of Contents**EXECUTIVE OFFICERS AND DIRECTORS**

The following table sets forth certain information regarding our current executive officers and directors as of April 6, 2018:

NAME	AGE	POSITION(S)
Richard A. Fair	49	President and Chief Executive Officer and Director
Alan A. Musso, C.P.A., C.M.A.	56	Chief Financial Officer and Treasurer
William Grossman, M.D., Ph.D.	48	Chief Medical Officer
Gregory Naeve, Ph.D.	53	Chief Business Officer
David M. Spencer, Ph.D.	55	Chief Technology Officer
Alan K. Smith, Ph.D.	62	Executive Vice President of Technical Operations
James F. Brown	53	Director
James M. Daly	56	Director
Stephen R. Davis	57	Director
Edmund P. Harrigan, Ph.D., M.D.	65	Director
Reid M. Huber, Ph.D.	46	Director
Frank B. McGuyer	66	Director
Jon P. Stonehouse	57	Director

Executive Officers

Richard A. Fair, 49, has served as our President and Chief Executive Officer and a member of our Board of Directors since January 2017. Prior to joining Bellicum, Mr. Fair served as Senior Vice President, Therapeutic Head Oncology Global Product Strategy at Genentech, Inc., a subsidiary of Roche Holding AG. From April 2006 to January 2014, Mr. Fair held other positions at Genentech, including Vice President, Global Product Strategy Hematology & Signaling, from November 2012 through December 2013, and Vice President, Sales & Marketing, Oral Oncolytics, from May 2010 to November 2012. Prior to Genentech, Mr. Fair held positions at Johnson & Johnson, a public pharmaceutical and medical device company. Mr. Fair received his B.S. in computer science from the University of Michigan and his MBA, with a dual concentration in finance and management, from Columbia University.

Alan A. Musso, C.P.A., C.M.A., 56, has served as our Chief Financial Officer and Treasurer since November 2014. From February 2002 to November 2014, Mr. Musso served in various positions at Targacept, Inc., a public biopharmaceutical company, including as Senior Vice President of Finance and Administration from March 2010 to November 2014, Chief Financial Officer and Treasurer from February 2002 to November 2014, and Assistant Secretary from June 2007 to November 2014. Mr. Musso has over 25 years of biotechnology and pharmaceutical industry experience in both large and emerging growth companies. Mr. Musso received his B.S. degree from Saint Mary's College of California and his graduate degree from the American Graduate School of International Management in Glendale, Arizona.

William Grossman, M.D., Ph.D., 48, has served as our Chief Medical Officer since February 2018. Prior to joining Bellicum, Dr. Grossman served as the Group Medical Director in Cancer Immunotherapy at Genentech from September 2015 to February 2018, where he led the global clinical development of cancer immunotherapies in gastrointestinal cancers and of cancer immunotherapy combinations across all solid tumor types. Dr. Grossman served AbbVie as its U.S. and Global Medical Affairs Therapeutic Area Head in Oncology from April 2013 until September 2015, where he was involved in the development and clinical study of cancer vaccines, immunomodulatory agents, and small molecules/biologics in oncology. From 2011 to 2013, Dr. Grossman served as Senior Vice President, Research & Clinical Development at Biothera, where he oversaw all discovery and clinical development efforts in oncology and immunology. Additionally, from 2004 until 2008, Dr. Grossman held various positions with the Medical College of Wisconsin and the Children's Hospital of

Table of Contents

Wisconsin, including Founder and Medical Director of the Clinical Immunodiagnostic and Research Laboratory, Professor for Microbiology and Genetics, and Director of the Hematology/Oncology/Bone Marrow Transplant Division for the Immunodeficiency Transplant Program. Dr. Grossman earned his M.D. and Ph.D. degrees from Washington University School of Medicine and completed his medical training in the Division of Pediatrics Hematology/Oncology at the Washington University School of Medicine.

Gregory Naeve, Ph.D., 53, has served as our Chief Business Officer since August 2017. From August 2012 to August 2017, Dr. Naeve served as the ImmunoOncology & Cell Therapy Lead for Pfizer's External Research and Development Unit, where he was responsible for identifying and implementing strategic partnerships in Pfizer's ImmunoOncology portfolio. Prior to that he served as Head of Strategic Research Groups at Pfizer from 2011 until 2012. From 2007 to 2010, Dr. Naeve served as Principal of The Column Group, a venture capital firm focused on investing in and creating innovative biotechnology companies. He also served as President and Chief Scientific Officer at Parallax Biosystems from 2002 to 2007, a company he co-founded that developed novel technologies with applications in preclinical drug discovery and diagnostics. Dr. Naeve received his B.S. in Biochemistry and Biological Sciences from Colorado State University and his Ph.D. in Biochemistry from the University of Southern California.

David M. Spencer, Ph.D., 55, has served as our Chief Technology Officer since February 2018. Dr. Spencer also served as our Chief Scientific Officer from November 2011 to February 2018, a position that he also held part-time as a consultant since September 2004. Dr. Spencer co-founded Bellicum in July 2004 and served as a member of our Board until September 2004. He has served as a scientific advisor to the Company since our inception. From January 1996 to November 2011, Dr. Spencer served as professor in the department of Pathology and Immunology at Baylor College of Medicine and as Vice Chairman of the department from January 2010 to November 2011. He graduated *magna cum laude* with a B.A. in Chemistry from the University of California, San Diego and received his Ph.D. in Biology at Massachusetts Institute of Technology and was a postdoctoral fellow at Stanford University.

Alan K. Smith, Ph.D., 62, has served as our Executive Vice President of Technical Operations since May 2017 and previously served as our Senior Vice President of Manufacturing from October 2015. From July 2013 to October 2015, Dr. Smith served as Vice President of Research & Development and Cellular Therapeutics for LifeNet Health, a private biotechnology company. Prior to LifeNet, Dr. Smith served as President and Chief Executive Officer for Cognate BioServices. In addition Dr. Smith held positions as an Adjunct Professor at Eastern Virginia Medical School, California State University Long Beach and Utah State University. Dr. Smith received his B.S. in Chemistry from Southern Utah University and his Ph.D. in Biochemistry from Utah State University.

Non-Employee Directors

James F. Brown, 53, has served as a member of our Board of Directors since November 2011 and as Chairman of our Board of Directors since December 2014. From July 2009 to May 2017 he served as Managing Director of AVG Ventures, a private investment firm. From 2003 to 2009, Mr. Brown was an independent investor and served on a number of private company boards of directors. From 1999 to 2002, he served as Executive Vice President and General Manager of OpenTV, Inc., a technology and media company, where he co-founded and managed the company's applications business unit, prior to its sale to Liberty Media in 2002. Earlier in his career, Mr. Brown was a partner in the law firms of McDermott, Will & Emery and Pillsbury Madison & Sutro. Mr. Brown is currently a director of Landmark Infrastructure Partners, LP, a specialty public real estate management company. He also served as a director of Perk.com, Inc., a public company traded on the Toronto Stock Exchange, from July 2015 to January 2017. Mr. Brown received his B.S. in accounting from Weber State University and his J.D. from Brigham Young University School of Law. Our Board of Directors believes that Mr. Brown's business experience and his success as an investor and entrepreneur qualify him to serve on our Board of Directors.

Table of Contents

James M. Daly, 56, has served as a member of our Board of Directors since May 2016. Mr. Daly currently serves on the board of directors of three other biopharmaceutical companies, including ACADIA Pharmaceuticals, Inc., Halozyme Therapeutics, Inc. and Chimerix, Inc. From October 2012 to June 2015, Mr. Daly served as Executive Vice President and Chief Commercial Officer of Incyte Corporation, a public biotechnology company. From January 2002 to December 2011, Mr. Daly held various positions at Amgen, Inc., a public biopharmaceutical company, where he most recently served as Senior Vice President of North America Commercial Operations and Global Marketing/Commercial Development. Prior to his employment with Amgen, Mr. Daly served as Senior Vice President and General Manager of the Respiratory/Anti-infective business unit of GlaxoSmithKline, a public pharmaceutical company, where he was employed from June 1985 to December 2001. Mr. Daly received his B.S. in Pharmacy and an M.B.A. from the University at Buffalo, The State University of New York. Our Board of Directors believes that Mr. Daly's extensive background in the pharmaceutical industry and experience as an executive and director at multiple public biopharmaceutical companies qualify him to serve on our Board of Directors.

Stephen R. Davis, 57, has served as a member of our Board of Directors since July 2015. Since March 2015, Mr. Davis has served as President and Chief Executive Officer of ACADIA Pharmaceuticals, Inc., a public biotechnology company. Prior to that, Mr. Davis served as ACADIA's Executive Vice President, Chief Financial Officer and Chief Business Officer from July 2014 through March 2015. From June 2012 to June 2015, Mr. Davis served as a member of the board of directors of Heron Therapeutics, Inc., a public biotechnology company, where he also served as Executive Vice President and Chief Operating Officer from May 2013 to July 2014. From April 2010 to December 2012, Mr. Davis served as Executive Vice President and Chief Operating Officer of Ardea Biosciences, Inc., a public biotechnology company which was acquired by AstraZeneca PLC in June 2012. He also recently served as a director of Synageva BioPharma Corp. Earlier in his career, Mr. Davis practiced as a certified public accountant with a major accounting firm and as a corporate and securities attorney with a Wall Street law firm. Mr. Davis received his B.S. degree in accounting from Southern Nazarene University and his J.D. degree from Vanderbilt University. Our Board of Directors believes that Mr. Davis' experience as an executive at various public biotechnology companies, his background in law, finance and accounting and his experience as a director at public biotechnology companies qualify him to serve on our Board of Directors.

Edmund P. Harrigan, M.D., 65, has served as a member of our Board of Directors since February 2018. Dr. Harrigan currently sits on the board of directors of ACADIA Pharmaceuticals, Inc. From 2012 to 2015, Dr. Harrigan served as Vice President of Worldwide Safety and Regulatory for Pfizer Inc., where he led a 3,500-person team in 80 countries that was responsible for collecting, interpreting and reporting clinical safety data for more than 600 marketed products, and managing regulatory interactions with global health agencies. Dr. Harrigan's previous executive leadership roles at Pfizer included serving as Senior Vice President, Head of Worldwide Business Development, Senior Vice President, Head of Worldwide Regulatory Affairs and Quality Assurance, and Vice President, Head of Neuroscience and Ophthalmology. Earlier in his career at Pfizer, Dr. Harrigan served as Vice President of Clinical Development, Therapeutic Area Head, CNS and Pain. Before entering the pharmaceutical industry in 1990, Dr. Harrigan was a practicing neurologist for seven years. He currently serves on the Board of Directors of two privately-held companies, Karuna Pharmaceuticals Inc. and Lyndra, Inc. Dr. Harrigan received his B.A. in Chemistry from St. Anselm College and his M.D. from the University of Massachusetts at Worcester. Our Board of Directors believes that Dr. Harrigan's background in clinical and related development and regulatory matters at large pharmaceutical organizations and extensive commercial and senior management experience qualify him to serve on our Board of Directors.

Reid M. Huber, Ph.D., 46, has served as a member of our Board of Directors since October 2014. Dr. Huber currently serves as the Executive Vice President and Chief Scientific Officer of Incyte Corporation, a public biotechnology company, where he has held various management positions since January 2002. From 1998 to 2002, Dr. Huber held scientific research positions at DuPont Pharmaceuticals Company, a private chemicals and healthcare company. Prior to DuPont Pharmaceuticals Company, from 1997 to 1998, Dr. Huber held intramural pre-doctoral and post-doctoral fellowships at the National Institutes of Health. Dr. Huber received his B.S. in

Table of Contents

biochemistry/molecular genetics from Murray State University and his Ph.D. in molecular genetics from Washington University. Our Board of Directors believes that Dr. Huber's extensive background in the pharmaceutical industry and current management experience at a public biotechnology company qualify him to serve on our Board of Directors.

Frank B. McGuyer, 66, has served as a member of our Board of Directors since March 2009. He is the founder of, and since December 1988 has served as the chairman of the Board of Directors and Chief Executive Officer of, McGuyer Homebuilders Inc., a private homebuilding company. He received his B.B.A. with honors at Southern Methodist University. Our Board of Directors believes that Mr. McGuyer's operational, business and investment experience qualifies him to serve on our Board of Directors.

Jon P. Stonehouse, 57, has served as a member of our Board of Directors since December 2014. Since January 2007, Mr. Stonehouse has served as the Chief Executive Officer and a member of the Board of Directors of BioCryst Pharmaceuticals, Inc., a public biopharmaceutical company. Since July 2007, he has also served as President of BioCryst. From March 2002 to December 2006, Mr. Stonehouse served in various positions at Merck KGaA, a pharmaceutical company, including as Senior Vice President of Corporate Development from July 2002 to December 2006, and Vice President of Global Licensing and Business Development and Integration from March 2002 to December 2006. Since November 2008, Mr. Stonehouse has also served as a member of the Advisory Board of Precision Biosciences, Inc., a private biotechnology company. Mr. Stonehouse received his B.S. in Chemistry from the University of Minnesota. Our Board of Directors believes that Mr. Stonehouse's management background, experience as a director at a public pharmaceutical company and extensive history as an advisory board member in the pharmaceutical industry qualify him to serve on our Board of Directors.

Table of Contents

TRANSACTIONS WITH RELATED PERSONS

The following includes a summary of transactions with related persons since January 1, 2017 to which we have been a party, in which the amount involved in the transaction exceeded \$120,000. Since January 1, 2017, the Company has engaged in the following transactions with related persons:

Agreements with Current and Former Officers and Directors

Effective January 30, 2017, Thomas J. Farrell resigned from his position as a member of our Board of Directors and our President and Chief Executive Officer. In connection with Mr. Farrell's resignation, we entered into a letter agreement with Mr. Farrell that provides for certain separation benefits in the form of continued payment of base salary for 12 months, a lump sum amount equal to Mr. Farrell's pro-rated target performance bonus for 2017, and reimbursement of COBRA premiums for up to 12 months. In addition, we agreed to retain Mr. Farrell as a consultant at a rate of \$5,000 per month, for a term of up to 18 months measured from January 30, 2017. In exchange for Mr. Farrell's consulting services, we also agreed to extend the separation benefits specified above for an additional six months following the initial 12 month period, subject to Mr. Farrell's continuous service and other terms and conditions specified in the agreement.

Effective March 14, 2017, Peter L. Hoang was terminated from his position as Senior Vice President of Business Development and Strategy. In connection with Mr. Hoang's termination, his employment agreement provides for certain separation benefits in the form of continued payment of base salary for 12 months, a lump sum amount equal to Mr. Hoang's pro-rated target performance bonus for 2017, and reimbursement of COBRA premiums for up to 12 months.

Effective July 31, 2017, Dr. Annemarie Moseley resigned from her position as our Chief Operations Officer and Executive Vice President of Clinical Development. In connection with Dr. Moseley's resignation, we entered into a separation and consulting agreement with Dr. Moseley that provides for certain separation benefits in the form of continued payment of base salary for 12 months, a lump sum amount equal to Dr. Moseley's pro-rated target performance bonus for 2017, and reimbursement of COBRA premiums for up to 12 months. In addition, we agreed to retain Dr. Moseley as a consultant to provide up to 10 hours of consulting services per month, or more if needed, at a rate of \$425 per hour, for a term of up to 18 months measured from July 31, 2017. In exchange for Dr. Moseley's consulting services, we also agreed to extend the separation benefits specified above for an additional six months following the initial 12 month period, subject to Dr. Moseley's continuous service and other terms and conditions specified in the agreement. Ken Moseley, our former Senior Vice President and General Counsel, who resigned from his position effective as of January 4, 2018, is the spouse of Dr. Moseley. Mr. Moseley's compensation was determined by the Compensation Committee, as with all executive officers. Mr. Moseley received an aggregate of \$827,614 in compensation for fiscal year 2017, in the following amounts: \$340,700 in salary; \$300,038 in option awards; \$86,813 in restricted stock units; \$69,758 in a performance-based bonus; and \$30,305 in all other compensation (including life insurance premiums, reimbursement of commuting expenses and parking subsidies).

Table of Contents**UNDERWRITING**

Citigroup Global Markets Inc. and Jefferies LLC are acting as joint book-running managers of the offering and as representatives of the underwriters named below. Subject to the terms and conditions stated in the underwriting agreement, dated April 17, 2018, each underwriter named below has severally agreed to purchase, and we have agreed to sell to that underwriter, the number of shares set forth opposite the underwriter's name.

Underwriter	Number of Shares
Citigroup Global Markets Inc.	3,040,000
Jefferies LLC	3,040,000
Guggenheim Securities, LLC	800,000
Ladenburg Thalmann & Co. Inc.	560,000
Raymond James & Associates, Inc.	560,000
Total	8,000,000

The underwriting agreement provides that the obligations of the underwriters to purchase the shares included in this offering are subject to approval of legal matters by counsel and to other conditions. The underwriters are obligated to purchase all the shares (other than those covered by the underwriters' option to purchase additional shares described below) if they purchase any of the shares.

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus supplement. Any shares sold by the underwriters to securities dealers may be sold at a discount from the initial public offering price not to exceed \$0.270 per share. If all the shares are not sold at the initial offering price, the underwriters may change the offering price and the other selling terms.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to 1,200,000 additional shares at the public offering price less the underwriting discount. To the extent the option is exercised, each underwriter must purchase a number of additional shares approximately proportionate to that underwriter's initial purchase commitment. Any shares issued or sold under the option will be issued and sold on the same terms and conditions as the other shares that are the subject of this offering.

We and our officers and directors have agreed that, for a period of 60 days from the date of this prospectus supplement, we and they will not, without the prior written consent of Citigroup and Jefferies, dispose of or hedge any shares or any securities convertible into or exchangeable for our common stock. Citigroup and Jefferies in their sole discretion may release any of the securities subject to these lock-up agreements at any time without notice.

The shares are listed on The Nasdaq Global Market under the symbol BLCM.

The following table shows the underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Paid by Bellicum	
	No Exercise	Full Exercise
Per share	\$ 0.45	\$ 0.45
Total	\$ 3,600,000	\$ 4,140,000

We estimate that our portion of the total expenses of this offering will be approximately \$430,000. We have also agreed to reimburse the underwriters for up to \$35,000 for their FINRA counsel fee. In accordance with FINRA Rule 5110, the reimbursed fee is deemed underwriting compensation for this offering.

Table of Contents

In connection with the offering, the underwriters may purchase and sell shares in the open market. Purchases and sales in the open market may include short sales, purchases to cover short positions, which may include purchases pursuant to the underwriters' option to purchase additional shares, and stabilizing purchases.

Short sales involve secondary market sales by the underwriters of a greater number of shares than they are required to purchase in the offering.

Covered short sales are sales of shares in an amount up to the number of shares represented by the underwriters' option to purchase additional shares.

Naked short sales are sales of shares in an amount in excess of the number of shares represented by the underwriters' option to purchase additional shares.

Covering transactions involve purchases of shares either pursuant to the underwriters' option to purchase additional shares or in the open market in order to cover short positions.

To close a naked short position, the underwriters must purchase shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.

To close a covered short position, the underwriters must purchase shares in the open market or must exercise the underwriters' option to purchase additional shares. In determining the source of shares to close the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the underwriters' option to purchase additional shares.

Stabilizing transactions involve bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum.

Purchases to cover short positions and stabilizing purchases, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of the shares. They may also cause the price of the shares to be higher than the price that would otherwise exist in the open market in the absence of these transactions. The underwriters may conduct these transactions on The Nasdaq Global Market, in the over-the-counter market or otherwise. If the underwriters commence any of these transactions, they may discontinue them at any time.

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

Other Relationships

The underwriters are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The underwriters and their respective affiliates have in the past performed commercial banking, investment banking and advisory services for us from time to time for which they have received customary fees and reimbursement of expenses and may, from time to time, engage in

S-17

Table of Contents

transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

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

Notice to Prospective Investors in Canada

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

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

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in the European Economic Area

In relation to each member state of the European Economic Area (EEA) that has implemented the Prospectus Directive (each, a relevant member state), with effect from and including the date on which the Prospectus Directive is implemented in that relevant member state (the relevant implementation date), an offer of shares described in this prospectus supplement may not be made to the public in that relevant member state other than:

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

Edgar Filing: BELLICUM PHARMACEUTICALS, INC - Form 424B5

to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant Dealer or Dealers nominated by us for any such offer; or

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

provided that no such offer of shares shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

S-18

Table of Contents

The shares may not be offered, sold or otherwise made available to any retail investor in the EEA. For the purposes of this provision: the expression *retail investor* means a person who is one (or more) of the following: (i) a retail client as defined in point (11) of Article 4(1) Directive 2014/65/EU, as amended (*MiFID II*); or (ii) a customer within the meaning of Directive 2002/92/EC, as amended (the *Insurance Mediation Directive*), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC (as amended, including by Directive 2010/73/EU (the *Prospectus Directive*)).

For purposes of this provision, the expression *an offer of securities to the public* in any relevant member state means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe for the shares, as the expression may be varied in that member state by any measure implementing the Prospectus Directive in that member state, and the expression *Prospectus Directive* means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the relevant member state) and includes any relevant implementing measure in the relevant member state. The expression *2010 PD Amending Directive* means Directive 2010/73/EU.

The sellers of the shares have not authorized and do not authorize the making of any offer of shares through any financial intermediary on their behalf, other than offers made by the underwriters with a view to the final placement of the shares as contemplated in this prospectus supplement. Accordingly, no purchaser of the shares, other than the underwriters, is authorized to make any further offer of the shares on behalf of the sellers or the underwriters.

Notice to Prospective Investors in the United Kingdom

This prospectus supplement and the accompanying prospectus are only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (*FSMA*) (Financial Promotion) Order 2005 (the *Order*) or (ii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (each such person being referred to as a *relevant person*). This prospectus supplement and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA in connection with the issue or sale of the shares may only be communicated or caused to be communicated in circumstances in which Section 21(1) of the FSMA does not apply to us.

All applicable provisions of the FSMA must be complied with in respect to anything done by any person in relation to the notes in, from or otherwise involving the United Kingdom.

Notice to Prospective Investors in France

Neither this prospectus supplement nor any other offering material relating to the shares described in this prospectus supplement has been submitted to the clearance procedures of the *Autorité des Marchés Financiers* or of the competent authority of another member state of the European Economic Area and notified to the *Autorité des Marchés Financiers*. The shares have not been offered or sold and will not be offered

Edgar Filing: BELLICUM PHARMACEUTICALS, INC - Form 424B5

or sold, directly or indirectly, to the public in France. Neither this prospectus supplement nor any other offering material relating to the shares has been or will be:

released, issued, distributed or caused to be released, issued or distributed to the public in France; or

used in connection with any offer for subscription or sale of the shares to the public in France.

S-19

Table of Contents

Such offers, sales and distributions will be made in France only:

to qualified investors (*investisseurs qualifiés*) and/or to a restricted circle of investors (*cercle restreint d'investisseurs*), in each case investing for their own account, all as defined in, and in accordance with articles L.411-2, D.411-1, D.411-2, D.734-1, D.744-1, D.754-1 and D.764-1 of the French Code monétaire et financier;

to investment services providers authorized to engage in portfolio management on behalf of third parties; or

in a transaction that, in accordance with article L.411-2-II-1^o-or-2^o -or 3^o of the French Code monétaire et financier and article 211-2 of the General Regulations (*Règlement Général*) of the Autorité des Marchés Financiers, does not constitute a public offer (*appel public à l'épargne*).

The shares may be resold directly or indirectly, only in compliance with articles L.411-1, L.411-2, L.412-1 and L.621-8 through L.621-8-3 of the French *Code monétaire et financier*.

Notice to Prospective Investors in Hong Kong

The shares may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong) and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Notice to Prospective Investors in Japan

The shares offered in this prospectus supplement have not been and will not be registered under the Financial Instruments and Exchange Law of Japan. The shares have not been offered or sold and will not be offered or sold, directly or indirectly, in Japan or to or for the account of any resident of Japan (including any corporation or other entity organized under the laws of Japan), except (i) pursuant to an exemption from the registration requirements of the Financial Instruments and Exchange Law and (ii) in compliance with any other applicable requirements of Japanese law.

Notice to Prospective Investors in Singapore

Edgar Filing: BELLICUM PHARMACEUTICALS, INC - Form 424B5

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to compliance with conditions set forth in the SFA.

S-20

Table of Contents

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

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

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

shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

to an institutional investor (for corporations, under Section 274 of the SFA) or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than \$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions specified in Section 275 of the SFA;

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

where the transfer is by operation of law.

Table of Contents

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Cooley LLP, San Diego, California. Covington & Burling LLP, New York, New York is counsel to the underwriters in connection with this offering.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2017, as set forth in their report, which is incorporated by reference in this prospectus supplement and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus. Information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement, while information that we file later with the SEC will automatically update and supersede the information in this prospectus supplement and the accompanying prospectus. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination of the offering (other than, unless otherwise specifically indicated, current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items):

1. our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on March 13, 2018;
2. the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2016 from our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 26, 2017;
3. our Current Reports on Form 8-K filed with the SEC on February 23, 2018, March 13, 2018 (except with respect to Item 2.02 included therein) and April 16, 2018 (except with respect to Items 2.02 and 7.01 included therein);
4. the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on December 10, 2014, under Section 12 of the Exchange Act, including any amendments or reports filed for the purpose of updating such description.

We will provide to each person, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus supplement, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at 2130 W. Holcombe Blvd., Ste. 800, Houston, Texas 77030, Attn: Corporate Secretary or telephoning us at (832) 384-1100.

Table of Contents

PROSPECTUS

\$ 150,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

From time to time, we may offer up to \$150,000,000 of any combination of the securities described in this prospectus in one or more offerings. We may also offer securities as may be issuable upon conversion, redemption, repurchase, exchange or exercise of any securities registered hereunder, including any applicable antidilution provisions.

This prospectus provides a general description of the securities we may offer. Each time we offer securities, we will provide specific terms of the securities offered in a supplement to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before you invest in any of the securities being offered.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

Our common stock is traded on the Nasdaq Global Market under the symbol BLCM. On June 23, 2017, the last reported sales price of our common stock was \$13.39 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing on the Nasdaq Global Market or any securities market or other exchange of the securities, if any, covered by the prospectus supplement.

We will sell these securities directly to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled Plan of Distribution in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts or over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such

sale will also be set forth in a prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading Risk Factors contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is July 12, 2017.

Table of Contents

TABLE OF CONTENTS

<u>ABOUT THIS PROSPECTUS</u>	i
<u>SUMMARY</u>	1
<u>RISK FACTORS</u>	6
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	6
<u>RATIO OF EARNINGS TO FIXED CHARGES</u>	7
<u>USE OF PROCEEDS</u>	7
<u>DESCRIPTION OF CAPITAL STOCK</u>	7
<u>DESCRIPTION OF DEBT SECURITIES</u>	13
<u>DESCRIPTION OF WARRANTS</u>	19
<u>LEGAL OWNERSHIP OF SECURITIES</u>	21
<u>PLAN OF DISTRIBUTION</u>	24
<u>LEGAL MATTERS</u>	26
<u>EXPERTS</u>	26
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	26
<u>INCORPORATION OF CERTAIN INFORMATION BY REFERENCE</u>	27
<u>DISCLOSURE OF COMMISSION'S POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITY</u>	27

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a shelf registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total aggregate offering price of \$150,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we sell securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in any documents that we have incorporated by reference into this prospectus. You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading **Incorporation of Certain Information by Reference**, before investing in any of the securities offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

Neither we, nor any agent, underwriter or dealer has authorized any person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus, any applicable prospectus supplement or any related free writing prospectus prepared by or on behalf of us or to which we have referred you. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus, any applicable prospectus supplement or any related free writing prospectus is delivered, or securities are sold, on a later date.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading **Where You Can Find More Information**.

Table of Contents

SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading **Risk Factors** contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Unless the context requires otherwise, references in this prospectus to **Bellicum**, **we**, **us** and **our** refer to Bellicum Pharmaceuticals, Inc. and its wholly owned subsidiary, Bellicum Pharma Limited.

Company Overview

We are 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, as well as orphan inherited blood disorders. 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 safety and efficacy outcomes than are seen with current cellular immunotherapies.

We are developing next-generation product candidates in some of the most important areas of cellular immunotherapy, including hematopoietic stem cell transplantation, or HSCT, chimeric antigen receptor T cell therapy, or CAR T, and T cell receptors, or TCRs. HSCT, also known as bone marrow transplantation, has for decades been curative for many patients with hematological cancers or orphan inherited blood disorders. However, adoption of HSCT to date has been limited by the risks of transplant-related morbidity and mortality from graft-versus-host-disease, or GvHD, and the potential for serious infections due to the lack of an effective immune system following a transplant. CAR T and TCR cell therapies are an innovative approach in which a patient's T cells are genetically modified to carry chimeric antigen receptors, or CARs, or TCRs which redirect the T cells against cancer cells. While high objective response rates have been reported in some hematological malignancies, serious and sometimes fatal toxicities have arisen in patients treated with CAR T cell therapies. These toxicities include instances in which the CAR T cells have caused high levels of cytokines due to over-activation, referred to as cytokine release syndrome, or CRS, neurologic toxicities and cases in which they have attacked healthy organs. In each case, these toxicities have sometimes resulted in death. In solid tumors, where the behavior of CAR T cells is particularly unpredictable and results have been inconsistent, researchers are developing enhanced CAR T cell approaches that raise even greater safety concerns.

Our proprietary CID platform is designed to address these challenges. Events inside a cell are 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, rimiducid, instead of by natural upstream signals. We include these molecular switches in the appropriate immune cells and deliver the cells to the patient in the manner of conventional cellular immunotherapy. We have developed two such switches: a safety switch, designed to initiate programmed cell death, or apoptosis, of the immunotherapy cells, and an activation switch, designed to stimulate activation and in some cases proliferation and/or persistence of the immunotherapy cells. Each of our product candidates incorporates one of these switches, for enhanced, real time control of safety and efficacy:

CaspaCIDE is our safety switch, incorporated into our HSCT and TCR product candidates, where it is inactive unless the patient experiences a serious side effect. In that event, rimiducid is administered to

Table of Contents

induce Caspase-9, or iCaspase, switch activation to fully or partially eliminate the cells, with the goal of terminating or attenuating the therapy and resolving the serious side effect.

Our Go switch incorporated into our GoCAR-T product candidates, is an activation switch designed to allow control of the activation and proliferation of the T cells through the scheduled administration of a course of rimiducid infusions that may continue until the desired patient outcome is achieved. In the event of emergence of side effects, the level of activation of the GoCAR-T cells is designed to be attenuated by extending the interval between rimiducid doses, reducing the dosage per infusion, or suspending further rimiducid administration. In addition, we have an active research effort to develop other advanced molecular switch approaches, including a dual-switch that is designed to provide a user-controlled system for managing persistence and safety of tumor antigen-specific CAR T cells.

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 lead clinical product candidate is described below.

BPX-501 is a CaspaCIDE product candidate designed as an adjunct T cell therapy administered after allogeneic HSCT. BPX-501 is designed to improve transplant outcomes by enhancing the recovery of the immune system following an HSCT procedure. BPX-501 addresses the risk of infusing donor T cells by enabling the elimination of donor T cells through the activation of the CaspaCIDE safety switch if there is an emergence of uncontrolled GvHD.

The European Commission has granted orphan drug designations to BPX-501 for treatment in HSCT, and for activator agent rimiducid for the treatment of GvHD. Additionally, BPX-501 and rimiducid have received orphan drug status from the U.S. Food and Drug Administration, or the FDA, as a combination replacement T-cell therapy for the treatment of immunodeficiency and GvHD after allogeneic HSCT.

During 2016, we discussed with the European Medicines Agency, or the EMA, clinical and regulatory plans to support the filing of Marketing Authorization Applications, or MAAs, for BPX-501 and rimiducid in Europe, initially for pediatric patients with certain orphan inherited blood disorders or treatment-refractory hematological cancers. Based on the regulatory discussions, we believe that data from the European arm of our BP-004 trial, expanded to enroll additional patients, with a primary endpoint of event-free survival, with events defined as transplant-related or non-relapse mortality, (severe GvHD and serious infection) at six months, could form the basis of MAAs for BPX-501 and rimiducid. In addition, the EMA's Committee for Medicinal Products for Human Use, or the CHMP, has agreed that review and approval under exceptional circumstances may be suitable, recognizing that a randomized trial may not be feasible in the pediatric haploidentical hematopoietic stem cell transplant setting. Exceptional circumstances may be granted for medicines that treat very rare diseases, or where controlled studies are impractical or not consistent with accepted principles of medical ethics. In place of a randomized trial, we intend to collect data from a concurrent observational study in the pediatric matched unrelated donor hematopoietic stem cell transplant setting, which will include both retrospective patients and prospective patients.

We have discussions ongoing with the FDA regarding the regulatory path to approval in the U.S. and we expect to provide updates in the third quarter of 2017.

In addition to BPX-501, our clinical stage product candidates which are designed to overcome limitations of CAR T and TCR therapies, include the following:

BPX-701 is a CaspaCIDE-enabled natural high affinity TCR product candidate designed to target malignant cells expressing the preferentially-expressed antigen in melanoma, or PRAME. Initial planned indications

Table of Contents

for BPX-701 development are refractory or relapsed acute myeloid leukemia, or AML, and myelodysplastic syndromes, or MDS, with an additional study planned for metastatic uveal melanoma. Each of these is an orphan indication where PRAME is highly expressed and for which current treatment options are limited. A Phase 1 dose finding clinical trial in patients with relapsed or refractory myeloid neoplasms is being conducted at the Oregon Health & Science University Hospital in Portland, Oregon.

BPX-601 is a GoCAR-T product candidate containing our proprietary inducible MyD88/CD40, or iMC, activation switch, designed to treat solid tumors expressing prostate stem cell antigen, or PSCA. Preclinical data shows enhanced T cell proliferation, persistence and in vivo anti-tumor activity compared to traditional CAR T therapies. A Phase 1 clinical trial in patients with non-resectable pancreatic cancer is being conducted at the Baylor Sammons Cancer Center in Dallas, Texas.

We have developed an efficient and scalable process to manufacture genetically modified T cells of high quality, which is currently being used by our third-party contract manufacturers to produce BPX-501 for our clinical trials. We are leveraging this process, as well as our resources, capabilities and expertise for the manufacture of our CAR T and TCR product candidates.

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. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

This prospectus contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

The Securities We May Offer

We may offer shares of our common stock and preferred stock, various series of debt securities and warrants to purchase any of such securities, up to a total aggregate offering price of \$150,000,000 from time to time in one or more offerings under this prospectus, together with any applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of the relevant offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

designation or classification;

aggregate principal amount or aggregate offering price;

maturity, if applicable;

original issue discount, if any;

rates and times of payment of interest or dividends, if any;

Table of Contents

redemption, conversion, exchange or sinking fund terms, if any;

conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange;

ranking, if applicable;

restrictive covenants, if any;

voting or other rights, if any; and

important U.S. federal income tax considerations.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

We may sell the securities directly to investors or through underwriters, dealers or agents. We, and our underwriters or agents, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities through underwriters or agents, we will include in the applicable prospectus supplement:

the names of those underwriters or agents;

applicable fees, discounts and commissions to be paid to them;

details regarding over-allotment options, if any; and

the estimated net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval. Subject to any preferential rights of any then outstanding preferred stock, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any then outstanding preferred stock. Our common stock does not carry

any preemptive rights enabling a holder to subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock, or any redemption rights.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our certificate of incorporation, our board of directors has the authority, without further action by stockholders, to designate up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges, qualifications and restrictions granted to or imposed upon the preferred stock, including dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be greater than the rights of the common stock. To date, none of the 10,000,000 authorized shares of preferred stock have been designated by our board of directors. Convertible preferred stock will be convertible into our common stock or exchangeable for our other securities. Conversion may be mandatory or at the option of the holders of our preferred stock and would be at prescribed conversion rates.

We will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of designation

Table of Contents

relating to that series. We will incorporate by reference into the registration statement of which this prospectus is a part the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into our common stock or preferred stock. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

The debt securities will be issued under one or more documents called indentures, which are contracts between us and a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indentures that contain the terms of the debt securities. A form of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered have been filed as exhibits to the registration statement of which this prospectus is a part, and supplemental warrant agreements and forms of warrant certificates will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

Table of Contents

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties described under the heading **Risk Factors** contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in our Annual Report on Form 10-K for the year ended December 31, 2016, as updated by our annual, quarterly and other reports and documents that are incorporated by reference into this prospectus, before deciding whether to purchase any of the securities being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act of 1934, as amended, or the Exchange Act, that involve a number of risks and uncertainties. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, these forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements.

Forward-looking statements can be identified by the use of forward-looking words such as *believes, expects, hopes, may, will, plan, intends, estimates, could, should, would, continue, seeks, pro forma, or anticipates* (including their use in the negative), or by discussions of future matters such as the development of new products, technology enhancements, possible collaborations and other statements that are not historical. These statements include but are not limited to statements under the captions **Business, Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations** and in other sections incorporated by reference from our Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, as applicable, as well as our other filings with the SEC. You should be aware that the occurrence of any of the events discussed under the heading **Risk Factors** in any applicable prospectus supplement and any documents incorporated by reference herein or therein could substantially harm our business, operating results and financial condition and that if any of these events occurs, it could adversely affect the value of an investment in our securities.

The cautionary statements made in this prospectus are intended to be applicable to all related forward-looking statements wherever they may appear in this prospectus or in any prospectus supplement or any documents incorporated by reference herein or therein. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date they are made. Except as required by law, we assume no obligation to update our forward-looking statements, even if new information becomes available in the future.

Table of Contents**RATIO OF EARNINGS TO FIXED CHARGES**

The following table sets forth our ratio of earnings to fixed charges and the ratio of our combined fixed charges and preferred dividends to earnings for each of the periods indicated. The following table is qualified by the more detailed information appearing in the computation table set forth in Exhibit 12.1 to the registration statement of which this prospectus is part and the historical financial statements, including the notes to those financial statements, incorporated by reference in this prospectus. The ratio of earnings to combined fixed charges and preferred dividends are calculated separately from the ratio of earnings to fixed charges because we paid accrued dividends on shares of Series B convertible preferred stock in December 2014 in connection with our initial public offering.

	Year Ended December 31,			Three Months
	2014	2015	2016	Ended
				March 31,
				2017
Ratio of earnings to fixed charges (1)	N/A	N/A	N/A	N/A
Ratio of combined fixed charges and preferred dividends to earnings (1)	N/A	N/A	N/A	N/A
Deficiency of earnings available to cover fixed charges	\$ (83,965)	\$ (48,548)	\$ (69,241)	\$ (21,973)
Deficiency of earnings available to cover combined fixed charges and preferred stock dividends	\$ (85,397)	\$ (48,548)	\$ (69,241)	\$ (21,973)

For purposes of computing the ratio of earnings to fixed charges and the ratio of our combined fixed charges and preferred dividends to earnings, earnings consist of income (loss) from continuing operations before income taxes plus fixed charges. Fixed charges consist of interest expense on indebtedness and an estimate of the interest within rental expense.

We did not record earnings for any of the years ended December 31, 2016, 2015, and 2014 or the three months ended March 31, 2017. Accordingly, our earnings were insufficient to cover fixed charges for such periods and we are unable to disclose a ratio of earnings to fixed charges for such periods.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Except as described in any prospectus supplement or any related free writing prospectus that we may authorize to be provided to you, we currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, which may include research and development, capital expenditures, working capital and general and administrative expenses. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. Pending these uses, we intend to invest the net proceeds in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, our amended and restated certificate of incorporation authorizes us to issue 200,000,000 shares of common stock, par value \$0.01 per share and 10,000,000 shares of preferred stock, par value \$0.01 per share. As of June 23, 2017, 33,193,229 shares of common stock were outstanding and no shares of preferred stock were outstanding.

Table of Contents

The following summary describes the material terms of our capital stock and the registration rights of certain holders of our common stock or their transferees. The descriptions of capital stock and the registration rights under the Second Amended and Restated Investor Rights Agreement by and among us and certain of our stockholders, dated August 22, 2014, or the Investor Rights Agreement, are qualified by reference to our amended and restated certificate of incorporation, our amended and restated bylaws and the Investor Rights Agreement, which are incorporated by reference as exhibits to the registration statement of which this prospectus is a part.

Common Stock

Voting. 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.

Dividends. 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. 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.

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.

Fully Paid and nonassessable. All of our outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

Under our amended and restated certificate of incorporation, our board of directors has the authority, without further action by stockholders, to designate up to 10,000,000 shares of preferred stock in one or more series and to fix or alter, from time to time, the designations, powers and rights of each series of preferred stock and the qualifications, limitations or restrictions of any series of preferred stock, including dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and the liquidation preference of any wholly unissued series of preferred stock, any or all of which may be greater than the rights of the common stock, and to establish the number of shares constituting any such series. To date, none of the 10,000,000 authorized shares of preferred stock have been designated by our board of directors.

Our board of directors will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and any applicable prospectus supplements in the certificate of designation relating to each such series. We will incorporate by reference as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to one or more Current Reports on Form 8-K, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. This description will include:

the title and stated value;

the number of shares we are offering;

Table of Contents

the liquidation preference per share;

the purchase price per share;

the dividend rate per share, dividend period, payment date or dates and method of calculation for dividends;

whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;

our right, if any, to defer payment of dividends and the maximum length of any such deferral period;

the procedures for any auction and remarketing, if any;

the provisions for a sinking fund, if any;

the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;

any listing of the preferred stock on any securities exchange or market;

whether the preferred stock will be convertible into our common stock or other securities of ours, including warrants, and, if applicable, the conversion price, or how it will be calculated, and under what circumstances and the mechanism by which it may be adjusted, and the conversion period;

whether the preferred stock will be exchangeable into debt securities or other securities of ours, and, if applicable, the exchange price, or how it will be calculated, and under what circumstances it may be adjusted, and the exchange period;

voting rights, if any;

preemptive rights, if any;

restrictions on transfer, sale or other assignment, if any;

whether interests in the preferred stock will be represented by depositary shares;

a discussion of any material or special U.S. federal income tax considerations applicable to the preferred stock;

the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;

any limitations on issuances of any class or series of preferred stock ranking senior to or on parity with the series of preferred stock being issued as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and

any other specific terms, rights, preferences, privileges, qualifications or limitations of, or restrictions on the preferred stock.

If we issue and sell shares of preferred stock pursuant to this prospectus, together with any applicable prospectus supplement or free writing prospectus, the shares will be fully paid and nonassessable.

The laws of the state of Delaware, the state of our incorporation, provide that the holders of preferred stock will have the right to vote separately, as a class, on any proposal involving fundamental changes in the rights of holders of such preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

The issuance of preferred stock could adversely affect the voting power, conversion or other rights of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation. Preferred stock could be issued quickly with terms designed to delay, deter or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

Table of Contents

Registration Rights

According to the terms of the Investor Rights Agreement, certain of our stockholders, or their transferees, are entitled to demand, Form S-3 and piggyback registration rights. These stockholders hold an aggregate of 4,305,731 shares eligible for registration under the Investor Rights Agreement, or approximately 12.97% of our total outstanding common stock, as of June 23, 2017.

Demand registration rights. At any time beginning 180 days after the effective date of this registration statement, a holder or the holders of at least 30% of the registrable securities have the right to demand that we file a registration statement under the Securities Act covering the registration of the registrable securities requested to be registered by such holders. These registration rights are subject to specified conditions and limitations, including a limitation on the number of such registration statements that can be demanded, restrictions on the exercise of such demand registration rights during periods of time that may be detrimental to the Company and its stockholders, and the right of the underwriters under certain circumstances to limit the number of shares having registration rights to be included in any such registration.

Form S-3 registration rights. Holders of shares having registration rights have the right to demand that we file no more than two registration statements for the holders on Form S-3 in any 12-month period so long as the aggregate offering price of securities to be sold under the registration statement on Form S-3 is at least \$3,000,000, subject to specified exceptions, conditions and limitations.

In addition, pursuant to the terms of a registration rights agreement we entered into with Baker Brothers Life Sciences, L.P., 667, L.P. and 14159, L.P., or collectively, Baker Brothers, Baker Brothers is entitled to certain resale registration rights with respect to shares of the Company's common stock held by Baker Brothers. Under the agreement, following a demand by Baker Brothers, the Company is obligated to file a resale registration statement on Form S-3, or other appropriate form, covering registrable securities held by Baker Brothers, and to keep such registration statement effective until the earlier of (i) all registrable securities covered by such registration statement have been sold or may be sold freely without limitations or restrictions as to volume or manner of sale pursuant to Rule 144 of the Securities Act, or (ii) all registrable securities covered by such registration statement otherwise cease to be considered registrable securities pursuant to the terms of the agreement. Under the agreement, Baker Brothers has the right to one underwritten public offering per calendar year, but no more than three underwritten public offerings in total, to effect the sale or distribution of its registrable securities, subject to specified exceptions, conditions and limitations.

Piggyback registration rights. If we register any securities for public sale, stockholders with registration rights will have the right to include their shares in the registration statement. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in the registration statement, but not below 25% of the total number of shares included in the registration statement. In connection with the filing of the registration statement of which this prospectus is a part, we have obtained a waiver of such rights from any party to the Investor Rights Agreement who has such rights.

Expenses of registration. Generally, we are required to bear all registration and selling expenses incurred by the holders in connection with the demand, Form S-3 and piggyback registrations described above, other than underwriting discounts and commissions, in an amount not to exceed \$50,000 per registration.

Expiration of registration rights. The demand, Form S-3 and piggyback registration rights discussed above will terminate as to a given holder of registrable securities upon the earlier of (1) December 23, 2017, (2) as to any holder of registrable securities, the first date on which such holder is able to dispose of all of its registrable securities without restriction under Rule 144 of the Securities Act, or (3) the consummation of a liquidation event.

Table of Contents

Anti-Takeover Effects of Provisions of Our Amended and Restated Certificate of Incorporation, Our Bylaws and Delaware Law

Delaware Anti-Takeover Law

We are subject to Section 203 of the Delaware General Corporation Law, or 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 after the date of the transaction in which the person became an interested stockholder, unless:

prior to the date of the transaction, the board of directors of the corporation approved either the business combination or 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 upon consummation of the transaction, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

on or subsequent to the consummation of the transaction, the business combination is approved by the board 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 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;

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; 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.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Provisions of our amended and restated certificate of incorporation and amended and 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, our amended and restated certificate of incorporation and amended and 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;

Table of Contents

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;

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);

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); and

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 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 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.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 6201 15th Avenue, Brooklyn, NY 11219. The transfer agent for any series of

preferred stock that we may offer under this prospectus will be named and described in the prospectus supplement for that series.

Listing on the Nasdaq Global Market

Our common stock is listed on the Nasdaq Global Market under the symbol BLCM.

Table of Contents

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as discount securities, which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with original issue discount, or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

the title of the series of debt securities;

any limit upon the aggregate principal amount that may be issued;

the maturity date or dates;

the form of the debt securities of the series;

the applicability of any guarantees;

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

Table of Contents

whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;

if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;

the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;

the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;

any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;

whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depositary for such global security or securities;

if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;

if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;

additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;

additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;

additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;

additions to or changes in the provisions relating to satisfaction and discharge of the indenture;

additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;

Table of Contents

the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;

whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;

the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any, and principal amounts of the debt securities of the series to any holder that is not a United States person for federal tax purposes;

any restrictions on transfer, sale or assignment of the debt securities of the series; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;

if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

Table of Contents

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, of such series of debt securities due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

the direction so given by the holder is not in conflict with any law or the applicable indenture; and

subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

the holder has given written notice to the trustee of a continuing event of default with respect to that series;

the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request;

such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and

the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may change an indenture without the consent of any holders with respect to specific matters:

to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;

to comply with the provisions described above under Description of Debt Securities-Consolidation, Merger or Sale;

Table of Contents

to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;

to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;

to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;

to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under Description of Debt Securities-General to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;

to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of any debt securities of any series;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

The indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

provide for payment;

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

pay principal of and premium and interest on any debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

recover excess money held by the trustee;

compensate and indemnify the trustee; and

appoint any successor trustee.

Table of Contents

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or the DTC, or another depository named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange of any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an

indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Table of Contents

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities, and any claim, controversy or dispute arising under or related to the indenture or the debt securities, will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act of 1939 is applicable.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements and free writing prospectuses, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be issued independently or together with common stock, preferred stock or debt securities offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants that we may offer in more detail in the applicable prospectus supplement and any applicable free writing prospectus. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness.

We have filed forms of the warrant agreements as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, if any, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

Table of Contents

General

We will describe in the applicable prospectus supplement the terms relating to a series of warrants being offered, including:

the title of such securities;

the offering price or prices and aggregate number of warrants offered;

the currency or currencies for which the warrants may be purchased;

if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

if applicable, the date on and after which the warrants and the related securities will be separately transferable;

if applicable, the minimum or maximum amount of such warrants which may be exercised at any one time;

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at which, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;

the terms of any rights to redeem or call the warrants;

the terms of any rights to force the exercise of the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the dates on which the right to exercise the warrants will commence and expire;

the manner in which the warrant agreements and warrants may be modified;

a discussion of any material or special U.S. federal income tax consequences of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise

Table of Contents

specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent in connection with the exercise of the warrant.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements, and any claim, controversy or dispute arising under or related to the warrants or warrant agreements, will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee or depository maintain for this purpose as the **holders** of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names as **indirect holders** of those securities. As we discuss below, indirect holders are not legal holders and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution

that holds them as depositary on behalf of other financial institutions that participate in the depositary's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Global securities will be registered in the name of the depositary or its participants. Consequently, for global securities,

Table of Contents

we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a global security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not legal holders, of the securities.

Street Name Holders

A global security may be terminated in certain situations as described under [Special Situations When a Global Security Will Be Terminated](#), or issue securities that are not issued in global form. In these cases, investors may choose to hold their securities in their own names or in street name. Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depositary will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depositary will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the legal holder, we have no further responsibility for the payment or notice even if that legal holder is required, under agreements with its participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the legal holders, and not the indirect holders, of the securities. Whether and how the legal holders contact the indirect holders is up to the legal holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

how it handles securities payments and notices;

whether it imposes fees or charges;

how it would handle a request for the holders' consent, if ever required;

whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;

Table of Contents

how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and

if the securities are in book-entry form, how the depository's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depository. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depository. Unless we specify otherwise in the applicable prospectus supplement, the DTC will be the depository for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depository, its nominee or a successor depository, unless special termination situations arise. We describe those situations below under -Special Situations When a Global Security Will Be Terminated. As a result of these arrangements, the depository, or its nominee, will be the sole registered owner and legal holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a legal holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depository that holds the global security.

If securities are issued only as global securities, an investor should be aware of the following:

an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;

an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;

an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;

an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;

the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in the global security;

we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in the global security, nor will we or any applicable trustee supervise the depositary in any way;

Table of Contents

the depositary may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and

financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own names, so that they will be direct holders. We have described the rights of holders and street name investors above.

A global security will terminate when the following special situations occur:

if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;

if we notify any applicable trustee that we wish to terminate that global security; or

if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depositary, and neither we nor any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to such prevailing market prices; or

at negotiated prices.

We may also sell equity securities covered by this registration statement in an at the market offering as defined in Rule 415 under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price, either:

on or through the facilities of the Nasdaq Global Market or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale; and/or

to or through a market maker other than on the Nasdaq Global Market or such other securities exchanges or quotation or trading services.

Such at-the-market offerings, if any, may be conducted by underwriters acting as principal or agent.

Table of Contents

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

the name or names of any underwriters, dealers or agents, if any;

the purchase price of the securities and the proceeds we will receive from the sale;

any over-allotment options under which underwriters may purchase additional securities from us;

any agency fees or underwriting discounts and other items constituting agents or underwriters compensation;

any public offering price;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities, and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Other than common stock, all securities we offer will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or

Table of Contents

covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. These transactions may be effected on any exchange or over-the-counter market or otherwise.

Any underwriters who are qualified market makers on the Nasdaq Global Market may engage in passive market making transactions in the securities on the Nasdaq Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters in connection with the offering and the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon by Cooley LLP.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. Neither we nor any agent, underwriter or dealer has authorized any person to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities offered by this prospectus.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the registration statement, as well as any other document filed by us with the SEC, at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You can also request copies of these documents by writing to the SEC and paying a fee for the copying cost. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including Bellicum. The address of the SEC website is www.sec.gov.

We maintain a website at www.bellicum.com. Information contained in or accessible through our website does not constitute a part of this prospectus.

Table of Contents

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus is 001-36783. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on March 13, 2017;

our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017, filed with the SEC on May 8, 2017;

the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed) filed with the SEC on April 26, 2017;

our Current Reports on Form 8-K (other than information furnished, rather than filed) filed with the SEC on January 31, 2017, March 24, 2017, May 15, 2017, June 15, 2017 and June 20, 2017; and

the description of our common stock, which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed with the SEC on December 10, 2014, including all amendments or reports filed for the purpose of updating such description.

We also incorporate by reference into this prospectus all documents (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of the registration statement, or (ii) after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without

charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at 2130 W. Holcombe Blvd., Ste. 800, Houston, Texas 77030, Attn: Corporate Secretary or telephoning us at (832) 384-1100.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement

contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

**DISCLOSURE OF COMMISSION S POSITION ON INDEMNIFICATION FOR
SECURITIES ACT LIABILITY**

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Company pursuant to the DGCL, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Table of Contents

8,000,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

April 17, 2018

Citigroup

Jefferies

Guggenheim Securities

Ladenburg Thalmann

Raymond James