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VIA EDGAR

November 18, 2014

United States Securities and Exchange Commission
Division of Corporate Finance
100 F Street, N.E.
Washington, D.C. 20549
Attn: Jeffrey Riedler

**Re: Bellicum Pharmaceuticals, Inc.**
**Registration Statement on Form S-1**
**CIK No. 0001358403**

Dear Mr. Riedler:

Enclosed on behalf of our client, Bellicum Pharmaceuticals, Inc. (the ***"Company"***), is a registration statement on Form S-1 (***"Registration Statement"***). The Registration Statement updates the Company's confidential draft registration statement on Form S-1 (the ***"Confidential Draft Registration Statement"***) originally submitted confidentially to the Securities and Exchange Commission (the ***"Commission"***) on October 17, 2014. The copy of the Registration Statement that is enclosed with the paper copy of this letter is marked to show changes from the Confidential Draft Registration Statement submitted on October 17, 2014.

The Registration Statement is being submitted in response to comments received from the staff of the Commission (the ***"Staff"***) by letter dated November 14, 2014 with respect to the Confidential Draft Registration Statement (the ***"Comment Letter"***). The numbering of the paragraphs below corresponds to the numbering in the Comment Letter, the text of which we have incorporated into this response letter for convenience. Except where otherwise indicated, page references in the text of the responses below correspond to the page numbers of the Registration Statement.

**Staff Comments and Company Responses**

Prospectus Summary
Overview, page 1

**1.** *Please describe the meaning and significance of the term "dendritic cell" at its first use in this section.*

**Response:** The Company has revised the disclosure on pages 1 and 68 to include a definition of dendritic cell.

Our Proprietary CID Technology Platform, page 2

**2.** *Please expand your disclosure to identify the serious and sometimes fatal toxicities that have arisen in patients treated with CAR T cell therapies.*

**Response:** The Company has revised the disclosure on pages 2 and 68 to identify the serious and sometimes fatal toxicities that have arisen in patients treated with CAR T cell therapies.

Our Proprietary CID Technology Platform
BPX-201, page 3

**3.** *Please provide the meaning of the term "checkpoint inhibitors" and briefly describe how these inhibitors work in the fourth bullet of this section.*

**Response:** The Company has revised the disclosure on pages 3, 4 and 69 to define the term "checkpoint inhibitors" and briefly describe how these inhibitors work.

Risk Factors
Risks Related to Our Business and Industry
If we fail to obtain additional financing, we may be unable to complete the..., page 19

**4.** *Please expand your disclosure in this risk factor to quantify the amount of your cash and cash equivalents.*

**Response:** The Company has revised the disclosure on page 19 to include the amount of its cash and cash equivalents as of September 30, 2014.

If product liability lawsuits are brought against us, we may incur substantial..., page 25

**5.** *We note your disclosure in this risk factor that you carry "limited" clinical and product liability insurance for CID-based product candidates. Please expand your disclosure in this risk factor to quantify the amount of clinical and product liability insurance you carry.*

**Response:** The Company has revised the disclosure on page 25 to quantify the amount of insurance it carries.

Our ability to utilize our net operating loss carryforwards and certain other tax..., page 25

**6.** *Please expand your disclosure in this risk factor to disclose when your net operating loss carryforwards begin to expire.*

**Response:** The Company has revised the disclosure on page 26 to disclose when its net operating loss carryforwards begin to expire.

Risks Related to Our Intellectual Property
We have limited foreign intellectual property rights and may not be able to..., page 37

**7.** *We note your disclosure that many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions and that legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products. Please expand your disclosure to identify the foreign countries where you may have difficulties enforcing your patent rights.*

**Response:** The Company has revised the disclosure on page 37 to mention Europe, China and India, specifically, and respectfully advises the Staff that these are the only major markets which the Company believes could have material consequences for the Company's intellectual property protection strategy in the future.

Use of Proceeds, page 46

**8.** *We note that you have allocated proceeds to fund your ongoing and planned Phase 1/2 clinical trials of BPX-501, BPX-401, BPX-601, BPX-701 and BPX-201. Please expand your disclosure to clarify whether the allocated proceeds are sufficient to fund the indicated Phase 1/2 clinical trials for the referenced product candidates to completion.*

**Response:** The Company has revised the disclosure on page 46 to clarify whether the allocated proceeds are sufficient to fund the indicated Phase 1/2 clinical trials for the referenced product candidates.

**9.** *In your fourth bullet point in this section, you have allocated proceeds to fund the "build-out of your development and manufacturing capabilities." Please expand your disclosure to describe what the build-out will entail, including the number of manufacturing locations you anticipate building, and whether the amount of proceeds allocated will be sufficient to accomplish your plans.*

**Response:** The Company has revised the disclosure on page 46 to clarify that a portion of the funds will be used to enhance the Company's Houston location for specific purposes.

Capitalization, page 48

**10.** *Please tell us how you intend to reflect:*

- *the payment in cash for accrued dividends that are payable upon conversion of the Series B convertible preferred stock; and*
- *the exercise of Series C convertible preferred stock warrants.*

**Response:** The Company has revised the disclosure on pages 49—51 to reflect the cash dividend payment and warrant exercises.

Managements' Discussion and Analysis
Results of Operations
Research and Development Expenses, page 58 and 59

**11.** *For each of your research and development projects, please disclose research and development expense incurred during each period presented and to date from the beginning of the project.*

**Response:** The Company has revised the disclosure on page 59 of the Registration Statement to include a table setting forth the research and development expense incurred during each period presented and to date from the beginning of each of the Company's research and development projects.

**12.** *Please quantify the increase in manufacturing and clinical expenses, separately, and by clinical trial (BPX-501 and BPX-201).*

**Response:** The Company advises the Staff that it has revised the disclosure on page 60 of the Registration Statement to quantify the increase in manufacturing and clinical expenses, separately, and by clinical trial (BPX-501 and BPX-201).

Critical Accounting Policies and Significant Estimates
Stock-Based Compensation, page 63

**13.** *We may have additional comments on your accounting for equity issuances including stock compensation and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.*

**Response:** The Company acknowledges the Staff's comment.

Changes in and Disagreements with Accountants on Accounting and Financial Disclosure, page 64

**14.** *Please provide exhibit 16 regarding the dismissal of PMB Helin Donovan, LLP as required by Items 304 and 601 of Regulation S-K.*

**Response:** The Company has provided exhibit 16 regarding the dismissal of PMB Helin Donovan, LLP as required by Items 304 and 601 of Regulation S-K in the Registration Statement.

Business

**15.** *Please disclose, where applicable in your business section, when investigational new drug applications ("INDs") were filed for the commencement of clinical trials for BPX-501 and BPX-201, the name of the trial sponsor and the subject of the INDs.*

**Response:** The Company has revised the disclosure on pages 89 and 90 to disclose when INDs were filed for the commencement of clinical trials for BPX-501 and BPX-201, the name of the trial sponsor and the subject of the INDs.

Limitations of Current Cellular Immunotherapy Approaches, page 71

**16.** *For the CAR-T cellular immunotherapy approach, please describe the "other safety approaches" that have slow onset of action or have their own safety issues.*

**Response:** The Company has revised the disclosure on page 73 to refer the reader to the discussion of the "other safety approaches" discussed in detail on pages 75 – 76.

Our Proprietary Switch Technologies
CIDeCAR, page 76

**17.** *We note that armored CARs may exacerbate safety issues found in standard CARs. Please expand your disclosure to describe the safety issues associated with standard CARs.*

**Response:** The Company has revised the disclosure on page 78 to disclose the primary safety issues associated with standard CARs. The Company respectfully advises the Staff that the safety issues are discussed on pages 2, 68 (both in response to Comment 2 above) and in the chart on page 73.

Our Product Candidates
BPX-501: CaspaCIDe Product Candidate for Hematological Diseases, page 82

**18.** *We note your disclosure on page 82 which states that you are currently conducting two Phase 1/2 clinical trials of BPX-501 and your description of one of the trials starting on page 85. Please include an appropriately titled subsection which provides a description of the second ongoing Phase 1/2 clinical trial of BPX-501, including the number of patients enrolled in the trial and the duration of the trial.*

**Response:** The Company has revised the disclosure on pages 84 and 90 to include appropriately titled subsections which provide a description of the Company's ongoing Phase 1/2 clinical trials of BPX-501, including the number of patients enrolled in the trial and the

duration of the trial. The Company respectfully advises the Staff that the clinical trial description that starts on page 87 is a third-party clinical trial being conducted by one of the Company's collaborators and the Company is not counting that clinical trial when it states that it has two ongoing clinical trials in the United States and one on-going clinical trial in Europe in the revised disclosure on page 84.

University of Texas, MD Anderson 2012-0501: Ongoing BPX-501 Phase..., page 85

**19.** *Please expand your disclosure regarding the description of the ongoing investigator-led open-label BPX-501 Phase 1/2 clinical trial and the BPX-201 Phase 1 clinical trial to provide the duration of the trials.*

**Response:** The Company has revised the disclosure on pages 87 and 90 to expand its disclosure to provide the duration of the trials.

Intellectual Property, page 94

**20.** *We note your disclosure regarding your material patents and patent applications in the bullet points provided in this section. Please expand your disclosure to provide the foreign jurisdictions where your material patents are issued and your patent applications are pending, the expiration dates of your material foreign patents and the expected expiration dates of your pending material foreign patent applications.*

**Response:** The Company has revised the disclosure on page 96 to include the foreign jurisdictions where its material patents are issued and its patent applications are pending, the expiration dates of its material foreign patents and the expected expiration dates of its pending material foreign patent applications.

Notes to Consolidated Financial Statements
Note 13. Income Taxes, page F-22

**21.** *As the research and development credit expired at the end of the 2013 tax year, please tell us why you include it in your reconciliation of the statutory benefit to the company's income tax expense for the six months ended June 30, 2014.*

**Response:** The Company respectfully advises the Staff that including the research and development credit in the reconciliation of the statutory benefit of the Company's income tax expense for the six months ended June 30, 2014 was an error. However, the inclusion of the credit in the reconciliation does not result in a change in the amounts presented in the statement of operations as the Company is operating in a loss position and has a full valuation allowance recorded on the net deferred tax assets. Additionally, the inclusion of the research and development credit is not material to the overall footnote disclosure. The Company will correct the disclosure in prospective filings.

General

**22.** *Please confirm that the graphics included in your registration statement are the only graphics you will use in your prospectus. If those are not the only graphics, please provide any additional graphics prior to their use for our review.*

**Response:** The Company has no present intention to include any graphics other than those in the Registration Statement. If it decides to include additional graphics, it will provide for the Staff to review prior to use.

**23.** *Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.*

**Response:** The Company acknowledges the comment and advises the Staff that it will supplementally provide such communications under separate cover. No potential investor has retained copies thereof.

The Company respectfully requests the Staff's assistance in completing the review of the Registration Statement as soon as possible. Please advise us if we can provide any further information or assistance to facilitate your review. Please direct any further comments or questions regarding the Registration Statement or this response letter to me at (858) 550-6092.

Sincerely,

Cooley LLP

/s/ Julie M Robinson, Esq.
Julie M. Robinson Esq.

cc: Thomas J. Farrell, Bellicum Pharmaceuticals, Inc.
Divakar Gupta, Cooley LLP
Eric Blanchard, Covington & Burling LLP