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

DIVISION OF
CORPORATION FINANCE

Mailstop 4720

December 17, 2015

Via E-mail
Werner Cautreels, Ph.D.
President and Chief Executive Officer
Selecta Biosciences, Inc.
480 Arsenal Street, Building One
Watertown, MA 02472

Re: Selecta Biosciences, Inc.
Draft Registration Statement on Form S-1
Submitted November 24, 2015
CIK No. 0001453687

Dear Dr. Cautreels:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Prospectus Summary, page 1

Our SVP Technology, page 1

1. At first use, please define the terms "tolerogenic" and "cytolytic" to enable a lay investor to understand.

SEL-212 for the Treatment of Refractory and Tophaceous Gout, page 4

2. We note your description of refractory gout as an "orphan indication." The first time you introduce the concept of orphan drug or biologic designations, please explain that the FDA may designate as "orphan drugs" certain drugs or biologics intended to treat rare

diseases, and clarify in that discussion that none of your product candidates has obtained an orphan designation for any indication.

Risk Factors, page 12
"Provisions in our restated certificate of incorporation…," page 61

3. The potential risks to investors related to the exclusive forum provision in your restated certificate of incorporation are distinct from your potential anti-takeover provisions. Please revise this risk factor to break out as a separately captioned risk factor the discussion in the last two paragraphs of your exclusive forum provisions.

Industry and Other Data, page 64

4. Please note that it is not appropriate to state or imply that you do not have liability for the statements in your registration statement. Your statements on page 64 that you have not independently verified market and industry data from third-party sources could imply that you are not taking liability for this information. In order to eliminate any inference that you are not liable for all of the information in your registration statement, please delete this statement or include a statement specifically accepting liability for information that appears in your registration statement relating to your relative market strength and competitive position.

Use of Proceeds, page 65

5. Please revise your disclosure:

   - to clarify the stage of development you anticipate you will achieve using the proceeds you will allocate to advance SEL-212;
   - to identify which of your other SVP product candidates you intend to develop using proceeds from the offering and the stage of development you anticipate you will achieve; and
   - to separate the amount of proceeds you expect to allocate to potential future development programs, early-stage research and development and continued development of your SVP technologies from those you expect to use for working capital and general corporate purposes.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 74

Contractual Obligations and Contingent Liabilities, page 86

6. Please clarify why you have excluded from the table any potential contingent payments upon the achievement by you of specified clinical, regulatory and commercial events, as applicable, or patent prosecution or royalty payments you may be required to make under

license agreements. Please describe and quantify herein these payments and potential payments you may be required to make under manufacturing and CRO agreements.

Common Stock Valuation, page 89

7. 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.

Business, page 95

Overview, page 95

8. Please disclose all investigational new drug applications ("INDs") that you have submitted to the FDA as well as the indication(s) and sponsor(s) for any active INDs related to your product candidates.

9. Please provide a brief explanation of the term "preclinical proof-of-concept" to enable a lay investor to understand.

10. Please revise your product pipeline table on page 97 to remove the programs that are currently in discovery. Since you have not yet developed a product candidate for these programs, it is premature to include them in a product pipeline table. If you feel that your investors would benefit from knowing other areas where you are conducting early-stage research, consider presenting them separately from your disclosure about programs where you have developed a product candidate. Please make corresponding changes to the product pipeline table on page 3 of the Prospectus Summary.

Inhibition of Anti-KLH Antibody Response…, page 105
Phase 1 and Phase 2 clinical trials, page 112

11. We note your statements regarding demonstrations of safety and efficacy of your product candidates, such as:

    - that you "observed that [y]our SVP technology was effective at inhibiting antibody responses to KLH in nonhuman primates," and
    - that "in [the Phase 1a] trial, pegsiticase was safe."

    Because approval of the FDA and other comparable regulatory agencies is dependent on such agencies making a determination (according to criteria specified in law and agency regulations) that a drug or biologic is effective, it is premature for you to describe or suggest that your SVP technology, product candidates, or any other non-approved

product or technology is effective. Accordingly, please revise these statements in your prospectus.

Licenses and Collaborations, page 126

12. Please revise your disclosure to describe the material terms of your license agreements with Brigham, Harvard Medical School, and the University of Toronto and your collaboration agreement with Genethon, including any material payment provisions, the scope of any licenses granted, the duration, and termination provisions.

    In addition, please file each agreement as an exhibit to your registration statement.

Massachusetts Institute of Technology, page 126

13. Please revise your description of this agreement to disclose the percentage of income received from sublicensees that you are required to pay to MIT to provide a range that does not exceed ten percent (e.g. between twenty and thirty percent). In addition, please disclose the annual minimum you or your sublicensees are obligated to spend on research, development and commercialization.

Shenyang Sunshine Pharmaceutical Co., Ltd., page 127

14. Please revise your description of this agreement to disclose:
    - the amount of the upfront payment
    - the aggregate amount of milestone payments made to date;
    - the aggregate amount of potential future milestone payments; and
    - the royalty rate within a range that does not exceed ten percent (e.g. teens, twenties, etc.).

Intellectual Property, page 128

15. We note your disclosure on page 129 that one "licensed, issued U.S. patent that covers the SEL-212 product…expires in 2021," and on page 130 that you "have issued patents that will expire on dates ranging from 2018 to 2032." Please revise your description of your owned patents and patent applications to identify the expiration date, or in the case of patent applications, the expected expiration date, of each material patent or patent family.

16. Please revise your disclosure with regards to the patents licensed from MIT, Brigham, Harvard Medical School and the University of Toronto to identify:

    - specific products, product groups and technologies to which such patents relate;
    - type of patent protection, such as composition of matter, use or process;
    - patent expiration dates; and

- applicable jurisdictions.

Certain Relationships and Related Person Transactions
Voting Agreement, page 170

17. If the entire voting agreement will terminate upon the closing of this offering, please disclose such fact in this section. If portions of the voting agreement will stay in effect after the closing of this offering, please file your voting agreement as an exhibit to the registration statement pursuant to Item 601(b)(4) of Regulation S-K.

Principal Stockholders, page 174

18. Please disclose the individual with voting and investment power with respect to the shares held by RUSNANO.

Notes to Consolidated Financial Statements, page F-7

11. Stock Incentive Plans, page F-29

19. Regarding the table of employee and non-employee option awards on page F-30, please tell us the activity related to non-employee awards. In addition, please provide information related to the non-employee awards similar to that provided for the employee awards in the paragraph that follows the table.

14. Technology License Agreements, page F-35

20. Please disclose the amounts of any upfront or milestone payments made and contingent future payments that may be made to Shenyang Sunshine Pharmaceutical Co. related to your 3SBio License.

General

21. 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.

22. Please confirm that the images included in your draft registration statement are all of the graphic, visual or photographic information you will be including. If you intend to use any additional images, please provide us proofs of such materials. Please note that we may have comments regarding this material.

You may contact Jacob Luxenburg at (202) 551-2339 or James Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters.

Please contact Christina Thomas at (202) 551-3577, Amy Reischauer at (202) 551-3793 or me at (202) 551-3675 with any other questions.

Sincerely,

/s/ Suzanne Hayes

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Via E-mail
Peter N. Handrinos
Latham & Watkins LLP
John Hancock Tower
200 Clarendon Street
Boston, Massachusetts 02116