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VIA EDGAR AND OVERNIGHT DELIVERY

U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, NE
Washington, DC 20549

Attention: John Reynolds, Assistant Director
Irene Barberena-Meissner, Staff Attorney
Kevin Dougherty, Staff Attorney
Ethan Horowitz, Accounting Branch Chief
Wei Lu, Staff Accountant

Re: Sutro Biopharma, Inc.
Draft Registration Statement on Form S-1
Submitted June 1, 2018
CIK No. 0001382101

Ladies and Gentlemen:

On behalf of Sutro Biopharma, Inc. (the "***Company***"), we are concurrently transmitting herewith Confidential Submission No. 2 ("***Draft No. 2***") to the Confidential Draft Registration Statement on Form S-1 (CIK No. 0001382101) confidentially submitted by the Company to the U.S. Securities and Exchange Commission (the "***Commission***") on June 1, 2018 (the "***Draft Registration Statement***"). In this letter, we respond to the comments of the staff of the Commission (the "***Staff***") contained in the Staff's letter dated June 29, 2018 (the "***Letter***"). The numbered paragraphs below correspond to the numbered comments in the Letter and the Staff's comments are presented in bold italics. We have also enclosed with the copy of this letter that is being transmitted via overnight courier copies of Draft No. 2 in paper format, marked to show changes from the Draft Registration Statement as initially submitted.

In addition to addressing the comments raised by the Staff in the Letter, the Company has revised Draft No. 2 to update certain other disclosures.

Prospectus Summary, page 1

1. We note your disclosure here and in the Business section that your preclinical models for STRO-001 have demonstrated "potent anti-tumor activity" and its properties "suggest a low likelihood of off-target toxicity" and potential for improved therapeutic index, and for STRO-002 that your preclinical models have demonstrated "superior inhibition of tumor growth" and greater linker stability relative to the benchmark molecule you created. Please revise your disclosure to eliminate any suggestion that your candidates have been or will ultimately be determined to be safe or effective or to have demonstrated efficacy for purposes of granting marketing approval by the FDA or comparable agency, including comparisons to the current standard of care.

In response to the Staff's comment, the Company has revised its disclosure on pages 2, 3, 95, 107 and 111 of Draft No. 2 to clarify that additional studies will be needed to determine the safety and efficacy of the Company's product candidates, that the results of these studies may be different than the results of earlier studies, and that the Company's product candidates have not and will not receive regulatory approval unless the FDA or foreign regulatory agencies determine they are safe and effective. To ensure that the disclosure is fair and balanced, the Company has placed this new disclosure immediately following the first discussion of the studies.

2. We note your statements in this section and throughout your filing that your product candidates will befirst-in-class and best-in-class, and that your platform allows you to accelerate the discovery of first-in-class and best-in-class molecules. Since these statements imply an expectation of regulatory approval, they are inappropriate given your early stage of development and lack of clinical trial data. Please remove these statements and similar statements from the descriptions of your platform and product candidates.

The Company advises the Staff that it believes that its product candidates have the potential to bebest-in-class based on preclinical data generated to date. Specifically, STRO-001's and STRO-002's homogenous designs suggest that they can provide greater anti-tumor activity, stability and safety than competing therapies. The Company also believes that STRO-001 has the potential to befirst-in-class given it is currently the most advanced product candidate in the clinic targeting the antigen CD74, which is highly expressed in many B cell malignancies, including multiple myeloma and lymphoma. Additionally, the Company believes its XpressCF Platform allows it to accelerate the discovery and development of potential best-in-class and/or first-in-class molecules due to its unique characteristics and versatility.

In response to the Staff's comment, the Company has revised its disclosure on pages 1, 2, 4, 79, 94, 95, 96, 104 and 106 of Draft No. 2, in some cases to delete references to first-in-class and best-in-class and in other cases to make clear that the Company's product candidates and the molecules discovered from the Company's XpressCF Platform are not currently, but have the potential in the future to be, best-in-class and/or first-in-class. The Company has also added disclosure on pages 2, 3 and 95 clarifying that additional studies will be needed to determine the safety and efficacy of the Company's product candidates, the Company's product candidates have not yet received regulatory approval and may not receive regulatory approval, if at all, prior to competing products, and competing therapies may ultimately reach market faster and have more favorable safety and efficacy profiles.

Our Pipeline, page 2

3. We note your product pipeline tables here and in your Business section include programs that are in the discovery phase. Because you have not identified a product candidate for these programs, it appears premature to include them in a product pipeline table. Please revise or advise. Please also include in the table columns for Phases 2 and 3 and the indications intended to be pursued for each product candidate.

In response to the Staff's comment, the Company has revised its disclosure on pages 2 and 105 of Draft No. 2 to include columns for Phases 2 and 3. The Company has also included the indications inside the arrows on the pipeline chart.

Additionally, the Company advises the Staff that it believes its discovery phase programs are material to an understanding of the Company's overall development program and strategy. It believes the existence of the Company's IL-2 mimetic, oncology and I/O programs, as well as it's collaboration with Merck KGaA, Darmstadt, Germany to develop additional antibody-drug conjugates, helps provide investors with a complete picture of the Company's current development plans and future strategies, and helps convey the breadth of the Company's pipeline and development capabilities. The Company therefore believes the inclusion of the discovery phase programs in its pipeline chart provides important information and context for investors.

Corporate Information, page 5

4. Please explain the difference between XpressCF and XpressCF+ at an appropriate place in your filing.

In response to the Staff's comment, the Company has revised its disclosure on page 122 of Draft No. 2.

Use of Proceeds, page 68

5. We note your disclosure that the expected net proceeds of the offering will not be sufficient to fund any of your product candidates through regulatory approval, and you will need to raise substantial additional capital to complete the development and commercialization of your product candidates. Please clarify the expected stage of development you expect to achieve with your current assets and the proceeds from this offering.

In response to the Staff's comment, the Company has revised its disclosure on page 68 of Draft No. 2 to leave spaces showing the location where the Company will add disclosure, prior to launching the road show for this offering, for the expected stage of development that the Company expects to achieve with its current assets and proceeds from this offering.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 79

Critical Accounting Polices and Estimates, page 88

Stock-Based Compensation, page 90

6. Revise the disclosure regarding your estimates of the fair value of stock options granted to your employees to specify the methods used to determine the fair value of the shares underlying these awards and to provide additional detail regarding the nature of the material assumptions involved in making those estimates. Separately, provide us with an analysis explaining the reasons for material differences between recent valuations of your common stock and your estimated offering price, once it is available.

In response to the first part of the Staff's comment, the Company has revised its disclosure on page 91 of Draft No. 2. Additionally, the Company will update such disclosure to specify the methods used to determine the fair value of the shares underlying awards granted through June 30, 2018 when the updated financial statements as of and for the six months ended June 30, 2018 are included in the Registration Statement.

With respect to the second part of the Staff's comment, the Company acknowledges the Staff's comment and will supplementally provide the requested information once the estimated offering price range has been determined.

Business, page 94

Our Product Candidates, page 104

7. We note that the studies discussed in this section provide data without providing proper context for such data. For each of the studies discussed in this section, please disclose the date(s) of the studies, the sponsor and the location; scope and size; dosage and duration; and actual results observed, including any negative findings. Please also state whether you have published the data for any of your studies.

In response to the Staff's comment, the Company has revised its disclosure on pages 107 and 112 of Draft No. 2 to include additional detail regarding these studies and to clarify that the mouse models do not address safety. The Company advises the Staff that mouse tumor models are used in the industry to provide proof-of-concept preclinical data to demonstrate that an experimental anti-cancer agent has the potential to treat human disease. Various tumor cell lines are implanted in living mice and allowed to grow, but ultimately the mice will succumb to the tumor. Experimental agents such as STRO-001 and STRO-002 are administered to the mice and assessed for tumor shrinkage and/or survival of the mouse, as depicted in the data presented in the Registration Statement. Mouse tumor models do not test for safety and they are not considered toxicology models by the FDA. In order to test for safety, the FDA requires testing in a recognized toxicology model such as healthy cynomolgus monkeys. The Company has conducted studies of STRO-001 and STRO-002 in cynomolgus monkeys, and has revised pages 109 and 113 to provide additional detail about the toxicity findings in those studies, as requested in comment 8.

With regards to the date(s) of the studies, sponsor and location, given that these studies are non-human, preclinical studies conducted by the Company in its laboratories as is standard with non-human, preclinical studies, the Company believes that such information is not relevant. Additionally, the Company notes that size, dosage, duration and actual results observed are described in the text and in the graphics on pages 107, 108, 109, 112 and 113. While these studies have been presented at various conferences, the data has not been published in peer-reviewed journals.

8. You disclose on pages 107 and 111 that the toxicology studies you conducted to investigate the safety of STRO-001 and STRO-002, respectively, did not result in any "unexpected toxicity findings." Please revise your disclosure to explain what you mean by this statement.

In response to the Staff's comment, the Company has revised its disclosure on pages 109 and 113 of Draft No. 2.

Collaboration and License Agreements, page 112

Celgene Collaboration, page 112

9. We note that you are eligible to earn tiered royalties ranging from single-digit to low double-digit percentages on worldwide sales of any commercial product that may result from the 2017 Celgene Agreement. This disclosure is too broad and could imply that your royalty rate is up to 49%. Please revise your disclosure here and throughout the prospectus to give investors a reasonable idea of the amount of the royalty rate that does not exceed 10 percentage points.

In response to the Staff's comment, the Company has revised its disclosure on pages 81, 115 and F-21 of Draft No. 2.

Merck KGaA, Darmstadt, Germany Collaboration, page 113

10. We note your disclosure that the MDA Agreement term expires on a product-by-product and country-by-country basis, and that upon expiration, Merck KGaA, Darmstadt, Germany will have a fully paid-up, royalty free, perpetual, and irrevocable non-exclusive license, with the right to grant sublicenses, under certain of your intellectual property rights. Please disclose the years, or range of years if more appropriate, in which this agreement will expire.

The Company advises the Staff that it is not possible to disclose the precise years or range of years in which the MDA Agreement will expire because the term of the MDA Agreement is based on the later of the expiration of the patents covering products licensed under the MDA Agreement or ten years after the first commercial sale of a product covered under the MDA Agreement. Given the products are in an early stage of development, it is not currently possible to estimate when the first commercial sale of a product covered under the MDA Agreement will occur. Additionally, while the expiration date of patents currently covering products licensed under the MDA Agreement is known, these patents could be extended and new patents could be granted, which could significantly change the length of patent protection for the licensed products, which in turn would significantly expand the term of the MDA Agreement. While the Company could provide the earliest possible range of dates that the patents could expire, the Company respectively advises the Staff that the Company does not believe this information provides meaningful disclosure to potential investors since the disclosure represents only a current estimate. Moreover, the Company believes that this information may be misleading to potential investors since any new patent applications related to the MDA Agreement filed by the Company in the future would extend the term of the MDA Agreement, as would a first commercial sale occurring after such date. Thus, depending on the timing and extent of future patent applications filed by the Company and the timing of the first commercial sale of a product, any disclosure based on the current, earliest possible range in which the MDA Agreement will expire could significantly understate the actual term of the MDA Agreement.

Intellectual Property, page 116

11. Please revise your disclosure to clearly identify your material patents or patent applications, including the patents or patent applications relating to your Xpress CF Platform, and your product candidates, STRO-001 and STRO-002. For each such material patent or patent application, please disclose (1) whether the patents relate to XpressCF Platform or the specific product(s) to which such patents or patent applications relate; (2) whether the patents are owned or licensed from Stanford or other third parties (3) the type of patent protection; (4) patent expiration dates and expected expiration dates for patent applications; and (5) the jurisdictions where such patents were issued and such patent applications are pending.

In response to the Staff's comment, the Company has revised its disclosure on page 120 of Draft No. 2.

Management, page 131

12. We note that your website indicates that you have a scientific advisory board and a clinical advisory board. Please revise your disclosure to describe the role or function of each of your scientific advisory board and clinical advisory board, and whether there are any rules of procedures governing these boards. Please also disclose how members of such boards are compensated.

In response to the Staff's comment, the Company has revised its disclosure on page 140 of Draft No. 2 to describe the role or function of its scientific advisory board and its clinical advisory board, as well as how members of such boards are compensated. The Company advises the Staff that the Company's scientific and clinical advisory boards do not operate under any governance charters or formal rules of procedure.

Certain Relationships and Related Party Transactions, page 150

Letter Agreement with Four Oaks, page 151

13. ***Please revise your disclosure to describe the compensation terms under you letter agreement with Four Oaks. In this regard, please clarify whether your future payments to Four Oaks of amounts equal to 2% of any future payments received under your 2017 Celgene Agreement are your only payment obligations under the letter agreement. Please also file a copy of this agreement as an exhibit or explain why it is not required to be filed. Refer to 601(b)(10)(ii)(B) of Regulation S-K.***

In response to the Staff's comment, the Company has revised its disclosure on page 154 of Draft No. 2.

The Company advises the Staff that the Company's letter agreement with Four Oaks was made in the ordinary course of business and was terminated in October 2013. Furthermore, the payments to Four Oaks, though sufficient to require disclosure under Item 404 of Regulation S-K, amounted to less than 1.2% of the Company's revenues in each of fiscal year 2015, 2016 and 2017. Moreover, while Four Oaks' involvement facilitated the Company's introduction to and initial collaboration with Celgene, the Company advises the Staff that Four Oaks' involvement is not necessary for the continued collaboration between the Company and Celgene. The Company and Celgene have a strong relationship and a history of collaboration dating back to an initial collaboration in December 2012. Therefore, the Company advises the Staff that the letter agreement was both immaterial in amount and significance and was not an agreement upon which the Company's business is substantially dependent. For these reasons, the Company respectively advises the Staff that the letter agreement does not need to be filed as an exhibit under Item 601(b)(10)(ii).

Principal Stockholders, page 153

14. ***Consistent with Item 403 of Regulation S-K and Exchange Act Rule 13d-3, please identify the person or persons who directly or indirectly exercise sole or shared voting and/or dispositive power with respect to the shares held by Mutual Fund Series Trust, on behalf of Eventide Healthcare & Life Sciences Fund.***

In response to the Staff's comment, the Company has revised its disclosure on page 158 of Draft No. 2.

General

15. ***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.***

The Company advises the Staff that neither the Company, nor anyone authorized on behalf of the Company, has provided written communications in reliance on Section 5(d) of the Securities Act of 1933, as amended, to potential investors. To the extent that any written communications may in the future be presented to potential investors, the Company will provide the Staff with copies of any such written communications.

16. Please provide us proofs of all graphics, visual, or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

The Company does not currently intend to include any additional graphic, visual or photographic information in the prospectus. However, if and to the extent that additional artwork or graphics are to be included, the Company will promptly provide such material to the Staff on a supplemental basis. The Company acknowledges that the Staff may have further comments on these materials once they are provided.

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Should the Staff have additional questions or comments regarding the foregoing, please do not hesitate to contact the undersigned at(650) 335-7292, or, in his absence, Amanda Rose at (206) 389-4553.

Sincerely,

FENWICK & WEST LLP

/s/ Robert A. Freedman

Robert A. Freedman
Partner

cc: William J. Newell, Chief Executive Officer
Edward Albini, Chief Financial Officer
Sutro Biopharma, Inc.

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