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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4628

June 29, 2018

William J. Newell
Chief Executive Officer
Sutro Biopharma, Inc.
310 Utah Avenue, Suite 150
South San Francisco, CA 94080

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

Dear Mr. Newell:

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

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.

2. We note your statements in this section and throughout your filing that your product candidates will be first-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.

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.

Corporate Information, page 5

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

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.

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.

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.

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.

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 Calgene 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.

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.

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 Plaform 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.

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.

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.

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.

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.

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.

You may contact Wei Lu, Staff Accountant, at (202) 551-3725 or Ethan Horowitz, Accounting Branch Chief, at 202-551-3311 if you have questions regarding comments on the financial statements and related matters. Please contact Irene Barberena-Meissner, Staff Attorney, at (202) 551-6548 or Kevin Dougherty, Staff Attorney, at (202) 551-3271 with any other questions.

Sincerely,

/s/ John Reynolds

John Reynolds
Assistant Director
Office of Natural Resources

cc: Rob Freedman, Esq.
Fenwick & West LLP