



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4720

March 28, 2016

Joshua R. Disbrow
Chief Executive Officer
Aytu Bioscience, Inc.
373 Inverness Parkway, Suite 206
Englewood, Colorado 80112

**Re: Aytu Bioscience, Inc.
Preliminary Proxy Statement on Schedule 14A
Filed March 15, 2016
File No. 000-53121**

Dear Mr. Disbrow:

We have limited our review of your filing to those issues we have addressed in the following comment.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comment applies 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 our comment, we may have additional comments.

Proposal No. 3, page 8

1. We note that your board of directors will be given discretion to set the exchange ratio for your reverse stock split at a point between 1-for-4 shares and 1-for-12 shares. We also note your disclosure on page 10 that you currently have 389 record holders. Please tell us what consideration you gave to the application of Exchange Act Rule 13e-3 and address whether the transaction will result in one of the going-private effects listed in Rule 13e-3(a)(3)(ii). Also revise the proxy statement to disclose whether the transaction will result in fewer than 300 holders of record, which would cause you to be eligible to terminate reporting obligations under Section 12(g) or Section 15(d). Alternatively, please comply with the requirements as set forth in paragraphs (d), (e), and (f) of Rule 13e-3.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are

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in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please contact Irene Paik at (202) 551-6553 or Mary Beth Breslin at (202) 551-3625 with any questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Alexander M. Donaldson, Esq.
Wyrick Robbins Yates & Ponton LLP