



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

DIVISION OF  
CORPORATION FINANCE

September 22, 2014

Via E-mail

Jeffrey S. Hatfield  
Chief Executive Officer  
Vitae Pharmaceuticals, Inc.  
502 West Office Center Drive  
Fort Washington, PA 19034

**Re: Vitae Pharmaceuticals, Inc.  
Amendment No. 5 to Registration Statement on Form S-1  
Filed September 22, 2014  
File No. 333-198090**

Dear Mr. Hatfield:

We have reviewed your 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

BACE, page 108

1. We note your response to prior comment 1. Please tell us where you have disclosed the payment of \$2 million mentioned in section 4 of exhibit 10.12 and the reason, if applicable, for the change in the amount of the payment per exhibit 10.13.

Principal Stockholders, page 146

2. We note your response to prior comment 4. Please tell us with specificity where you have disclosed the reason for the entire increase in the number of share beneficially owned by Mr. Hatfield and Dr. Gregg as reflected in the post-offering column of the table.

Description of Capital Stock, page 150

3. We note your response to prior comment 5. Please ensure that your disclosure addresses the full extent of the provisions regarding a 66 2/3% vote according to exhibit 3.2, including the provision in the twelfth article of exhibit 3.2. Also, please restore the disclosure you removed from the bullet points on page 152.

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 Act of 1933 and all applicable Securities Act rules require. Since the company and its management are 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide us with a letter, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Jeffrey S. Hatfield  
Vitae Pharmaceuticals, Inc.  
September 22, 2014  
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You may contact Tara Harkins, Staff Accountant, at (202) 551-3639 or Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Tom Jones at (202) 551-3602 or me at (202) 551-3617 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso  
Branch Chief

cc (via e-mail): Timothy H. Ehrlich, Esq.