

Mail Stop 4720

April 22, 2010

Stephen B. Thompson  
Chief Financial Officer  
Access Pharmaceuticals, Inc.  
2600 Stemmons Freeway, Suite 176  
Dallas, Texas 75207

**Re: Access Pharmaceuticals, Inc.  
Post-effective Amendment No. 1 to Form S-1  
Filed April 14, 2010  
File No. 333-149633**

Dear Mr. Thompson:

We have limited our review of your registration statement to the issues we have addressed in the following comment. Where indicated, we think you should revise your document in response to this comment. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Post-effective Amendment No. 1 to Form S-1

1. We note that the underlying registration statement taken effective on November 13, 2008 included various tabular disclosures which were provided in response to our comments. We also note that your post-effective amendment to this registration statement has omitted each of these tabular disclosures from the prospectus. Please revise your post-effective amendment to provide tabular disclosure which includes the following information with respect to the offering:
  - Details of the issuance of the Series A Preferred Stock that is being registered for resale, including the form of consideration paid, the dates of acquisition, the number of underlying shares of common stock, the conversion price per share, the market price, and the total profit received upon conversion;
  - Details of the gross proceeds received by the registrant in each private placement transaction, and comparison of this number to the placement agent fees paid to selling stockholders;
  - Discussion of all payments to be made to selling shareholders in connection with the private placement transactions, including placement agent fees, liquidated damages, and dividends;
  - Details of the total possible profit that the selling shareholders and their affiliates could realize as a result of the conversion discount for the securities underlying the warrants and options that they held prior to the registrant's issuance of Series A Preferred Stock; and
  - Description of the other securities transactions to which the registrant has been a party along with the selling stockholders and their affiliates. (This table should provide information regarding the date of the prior securities transaction, the principal amount of the convertible securities, the amount of common stock underlying the convertible securities, the market price per share immediately prior to the transaction, any placement agent fees paid, the number of shares in each transaction that had been previously registered, and the number of shares that had not been previously registered.)

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As appropriate, please amend your registration statement in response to this comment. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your response to our comment and provides any requested information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comment.

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 all information required under the Securities Exchange Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 comment, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

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We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Bryan Pitko at (202) 551-3203 or Suzanne Hayes at (202) 551-3675 with any questions. In this regard, please feel free to contact me at (202) 551-3715.

Sincerely,

Jeffrey Riedler  
Assistant Director

cc: John J. Concannon III, Esq.  
Bingham McCutchen LLP  
One Federal Street  
Boston, MA 02110