



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4720

March 29, 2016

Christoph Westphal, M.D., Ph.D.
President and Chief Executive Officer
Flex Pharma, Inc.
800 Boylston Street, 24th Floor
Boston, MA 02199

**Re: Flex Pharma, Inc.
Registration Statement on Form S-3
Filed March 18, 2016
File No. 333-210289**

Dear Dr. Westphal:

We have limited our review of your registration statement to those issues addressed in our comment. Please respond to this letter by amending your registration statement as requested. 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 any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

Incorporation of Certain Information by Reference, page 24

1. Please amend this disclosure to include the Current Report on Form 8-K filed on February 2, 2016 among the documents you are incorporating by reference.

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 comment, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company 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;

Christoph Westphal, M.D., Ph.D.
Flex Pharma, Inc.
March 29, 2016
Page 2

- 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.

You may contact Scot Foley at (202) 551-3383, Mary Beth Breslin at (202) 551-3625 or me at (202) 551-3675 with any questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Lester Fagen
Cooley LLP