



DIVISION OF
CORPORATION FINANCE

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

March 31, 2011

Leonard Bell, M.D.
Chief Executive Officer
Alexion Pharmaceuticals, Inc.
352 Knotter Drive
Cheshire, Connecticut 06410

Re: Alexion Pharmaceuticals, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2010
Filed February 17, 2011
File No. 000-27756

Dear Dr. Bell:

We have reviewed your filing 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 within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended December 31, 2010

General

1. We note that you have not yet filed the Part III information that is incorporated by reference into your Form 10-K. We may have further comments after reviewing that information and we will not be able to clear our review of your filing until we have the opportunity to resolve any resulting comments.

Patents and Proprietary Rights, page 9

2. Please provide proposed disclosure to be included in your next Form 10-K which includes a more robust discussion of your material patents, including the expiration dates for each and the jurisdictions in which they were granted. See Item 101(c)(1)(iv) of Regulation S-K for guidance.

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 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 Laura Crotty at (202) 551-3563, Daniel Greenspan, Special Counsel, at (202) 551-3623 or myself at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler
Assistant Director