

Via Facsimile and U.S. Mail
Mail Stop 6010

February 7, 2006

Mr. Vikas Sinha
Senior Vice President and
Chief Financial Officer
Alexion Pharmaceuticals, Inc.
352 Knotter Drive
Cheshire, CT 06410

Re: Alexion Pharmaceuticals, Inc
Form 10-K for the Fiscal Period Ended July 31, 2005
File No. 000-27756

Dear Mr. Sinha:

We have reviewed your filing and have the following comment. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your document. In our comment, we ask you to provide us with information so we may better understand your disclosure. Please be as detailed as necessary in your explanation. 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 any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K - July 31, 2005

Financial Statements

2. Collaborations, page F-12

Procter & Gamble Pharmaceuticals Collaboration, page F-12

1. Your disclosure under "Research and Development Expenses" on page F-9 states that you net costs reimbursed under collaborator agreements against your research and development costs. Your Form 10-Q for the period ended October 31, 2005 indicates that you are currently reassessing the viability of the projects under development with P&G due to the failure to show statistical significance of one of your projects. The disclosure appears to suggest that you have major agreements where the costs incurred on each project may be material. Please provide to us in disclosure type format the disclosures required by paragraph 14 (b) of SFAS 68 related to these and the other collaborative projects disclosed in this note to better allow an investor to understand the impact that these agreements have on your financial statements. Also provide in disclosure type format a better discussion within your liquidity section of the impact of

these agreements on your operations.

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Please respond to this comment within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your response to our comment and provide the requested information. Detailed letters greatly facilitate our review. Please file your letter on EDGAR under the form type label CORRESP.

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 1934 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.

In connection with responding to our comments, please provide, in your letter, a 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.

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 our review of your filing or in response to our comments on your filing.

You may contact Tabatha Akins, Staff Accountant, at (202) 551-3658 or Jim Atkinson, Accounting Branch Chief, at (202) 551-3674 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3679 with any other questions.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant
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Mr. Vikas Sinha
Alexion Pharmaceuticals, Inc.
February 7, 2006
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