

Via Facsimile and U.S. Mail
Mail Stop 6010

November 5, 2008

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

Re: Alexion Pharmaceuticals, Inc.
Form 10-K for the Year Ended December 31, 2007
Filed February 29, 2008
Form 10-Q for the Quarterly Period Ended September 30, 2008
Filed October 30, 2008
Form DEF 14A
Filed on April 4, 2008
File No. 000-27756

Dear Mr. Sinha:

We have reviewed your filings and have the following comments. In our comments, we ask you to provide us with information to better understand your disclosure. Where a comment requests you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or quarterly filing, as applicable, in which you intend to first include it. If you do not believe that revised disclosure is necessary, explain the reason in your response. After reviewing the information provided, we may raise additional comments and/or request that you amend your filings.

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.

Form 10-K for the Year Ended December 31, 2007

Item 1. Business, page 2

1. We note your statement that you executed your latest amendment to the Lonza Agreement in June 2007 to provide for additional purchase commitments through 2013. Please include your amended supply agreement with Lonza Sales AG as an exhibit to the Form 10-K.

2. We note your statements throughout the Form 10-K regarding the importance of your patents and other proprietary rights and that you have licensed patents from other parties. We also refer to your contractual obligations table on page 64 in which you list contractual obligations from licenses. To the extent that these licenses are material to your business, please revise your Business section to summarize the material terms of the license agreements. Your summary should describe payment provisions, the existence of royalty provisions, aggregate milestones, usage restrictions, exclusivity provisions, obligations/rights to defend, other rights obtained and obligations that must be met to keep the license in place, duration and termination provisions. For example, we note you include as an exhibit to the Form 10-K a License Agreement dated March 27, 1996 with the Medical Research Council. The material terms of this license agreement should be included in the Business description of the Form 10-K. Please also include any other material license agreements as exhibits to the Form 10-K.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Critical Accounting Policies and the Use of Estimates

Revenue Recognition, page 52

3. Please revise your disclosures related to estimates of items that reduce gross revenue such as rebates payable and distribution and other fees paid to customers as follows:
 - Disclose the nature and amount of each accrual at the balance sheet date.
 - Disclose the factors that you consider in estimating each accrual
 - Disclose the major terms of material arrangements/agreements
 - Disclose a roll forward of the liability for each estimate for each period presented showing the following:
 - Beginning balance,
 - Current provision related to sales made in current period,
 - Current provision related to sales made in prior periods,
 - Actual returns or credits in current period related to sales made in current period,

- Actual returns or credits in current period related to sales made in prior periods, and
 - Ending balance.
4. Disclose your standard credit terms and explain why days' sales in accounts receivable exceed those terms, if true.

Research and Development Expenses, page 55

5. Please disclose the following information for each of your major active research and development project(s):
- The costs incurred during each period presented and to date on the project;
 - The nature and estimated costs of the efforts necessary to complete the project;
 - The anticipated completion dates;
 - The risks and uncertainties associated with completing development on schedule, and the consequences to operations, financial position and liquidity if the project is not completed timely; and finally
 - The period in which material net cash inflows from significant projects are expected to commence.

To the extent that information requested above is not known or estimable, disclose that fact and the reason why it is not known. Please refer to the Division of Corporation Finance "Current Issues and Rulemaking Projects Quarterly Update" under section VIII – Industry Specific Issues – Accounting and Disclosure by Companies Engaged in Research and Development Activities. You can find it at the following website address:
<http://www.sec.gov/divisions/corpfin/cfcrcq032001.htm>

Royalties, page 54

6. Please expand your disclosures to discuss the terms of the royalty payments the company is expected to pay to third parties, such as royalty rates and other significant terms as applicable. Please confirm that estimated royalty payments due in future periods have been included in the contractual obligations table on page 64 as appropriate.

Form 10-Q for the Quarterly period ended September 30, 2008

Condensed Consolidated Financial Statements

Notes to Condensed Consolidated Financial Statements, page 5

13. Fair Value Measurement, page 11

7. Please disclose the nature of your Level 2 assets classified in cash equivalents and describe the methods used to estimate their fair value.

DEF 14A

8. We note that annual incentive bonuses are linked to the achievement of corporate, department and individual goals. Please revise your discussion to describe the corporate, department and individual goals used to determine annual incentive bonuses for Dr. Bell, Mr. Keiser, Dr. Squinto, Mr. Sinha and Mr. Dubin.

* * * *

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please furnish 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.

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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 comment on your filing.

You may contact Ibolya Ignat, Staff Accountant at (202) 551-3656, or Gustavo Rodriguez, Accounting Branch Chief, at (202) 551-3752 if you have any questions regarding the processing of your response as well as any questions regarding comments on the financial statements and related matters. You may contact Michael Rosenthal, Staff Attorney, at (202) 551-3674 or Sonia Barros, Senior Staff Attorney at (202) 551-3655 regarding other comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant