



DIVISION OF  
CORPORATION FINANCE

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

April 18, 2012

Via E-mail

Vikas Sinha, M.B.A., C.A.  
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 Year Ended December 31, 2011  
Filed February 17, 2012  
File No. 000-27756**

Dear Mr. Sinha:

We have completed our review of your filing. We remind you that our comments or changes to disclosure in response to our comment do not foreclose the Commission from taking any action with respect to the company or 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. 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 rules require.

Sincerely,

/s/ Joel Parker

Joel Parker  
Accounting Branch Chief