



DIVISION OF
CORPORATION FINANCE

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

May 11, 2010

Mr. John L. McManus
President and Chief Executive Officer
Aeolus Pharmaceuticals, Inc.
26361 Crown Valley Parkway, Ste. 150
Mission Viejo, CA 92691

Re: Aeolus Pharmaceuticals, Inc.
Form 10-K/A for the Fiscal Year Ended September 30, 2010
Definitive Information Statement filed January 26, 2011
Form 8-K filed on February 16, 2011
Form 8-K filed on February 25, 2011
File No. 000-50481

Dear Mr. McManus:

We have reviewed your April 4, 2011 response to our March 21, 2011 letter and have the following comments.

Please respond to this letter within ten business days by amending your filing, providing the requested information or by advising us when you will provide the requested response. If you do not believe a comment applies to your facts and circumstances, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments.

After reviewing any amendment to your filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K/A for the fiscal year ended September 30, 2010

Notes to the Consolidated Financial Statements, page 62

Note G. Stockholders' Equity (Deficit), page 67

1. We acknowledge your response to prior comment five that the use of the binomial-lattice model for the warrants issued would not necessarily result in a more accurate valuation. We continue to believe that a model other than Black-Scholes model would be more appropriate since the Black-Scholes model relies on static assumptions and would not capture the fair value of a warrant with anti-dilution protection provided in your warrant agreements.

Item 9A Controls and procedures, page 77

2. We acknowledge your response to comment eight. Consistent with your response to prior comment three, please revise your disclosure to explain why the amendment on

Mr. John L. McManus
Aeolus Pharmaceuticals, Inc.
May 11, 2011
Page 2

December 30, 2010 was filed and the facts and circumstances surrounding it. Also, please revise your disclosures to explain each material weakness identified, how the material weakness impacted your operations, including your financial statements, and management's proposed resolution for the material weakness. Disclose the nature of the mitigating controls established and discuss any anticipated changes to disclosure controls and procedures and/or internal controls over financial reporting to correct your material weaknesses.

You may contact Christine Allen, Staff Accountant, at (202) 551-3652 or Donald Abbott, Senior Staff Accountant, at (202) 551-3608 if you have questions if you have any questions regarding the comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant