



DIVISION OF  
CORPORATION FINANCE

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

August 9, 2010

Dr. Paul Goddard  
Chairman and Chief Executive Officer  
ARYx Therapeutics, Inc.  
6300 Dumbarton Circle  
Fremont, California 94555

**Re: ARYx Therapeutics, Inc.**  
**Form 10-K for the Fiscal Year Ended December 31, 2009**  
**Filed March 30, 2010**  
**File No. 001-33782**

Dear Dr. Goddard:

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 amending your filing, 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 or do not believe an amendment is appropriate, please tell us why in your response.

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

Item 1. Business

1. As disclosed on page 40, some of the registrant's intellectual property or technology and related patents were in-licensed rather than developed internally. As to each of the registrant's four pipeline products which are in the clinical phase, please disclose the extent to which these products were developed internally or by in-licensing intellectual property. Disclose the material terms of all in-licensing agreements related to these products and file the agreement as exhibits to the 10-K. Alternatively, provide us the company's analysis as to why any such agreements need not be filed as exhibits.

Definitive Proxy Statement on Schedule 14A

Compensation Committee Process, 15

2. Please identify the members of the peer group identified by Radford for use in benchmarking executive compensation.

Nominating and Corporate Governance Committee, page 15

3. We note your disclosure here that, “the Nominating and Corporate Governance Committee considers diversity...” Please describe how the Committee considers diversity, as required by Item 407(c)(2)(vi) of Regulation S-K.

\* \* \*

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 Michael Rosenthal at (202) 551-3674 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler  
Assistant Director