



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

DIVISION OF  
CORPORATION FINANCE

Mail Stop 4720

August 26, 2015

Via E-Mail

Kenneth T. Mills  
Chief Executive Officer  
REGENXBIO Inc.  
9712 Medical Center Drive, Suite 100  
Rockville, MD 20850

**Re: REGENXBIO Inc.  
Registration Statement on Form S-1  
Filed August 17, 2015  
File No. 333-206430**

**Amendment No. 1 to Draft Registration Statement on Form S-1  
Submitted August 10, 2015  
CIK No. 0001590877**

Dear Mr. Mills:

We have reviewed your registration statement 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 by amending your registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

8. Stock-based Compensation, page F-33

1. With regard to your response to comment 24 please tell us how you considered the following in determining expected volatility for stock-based compensation in accordance with ASC 718:

- Using BioMarin and Regeneron as similar when they have significantly greater market capitalizations, revenues, and research and development expense than your company,
- Using the volatility of companies with less than six years of trading data (like Spark from only February 2015 to May 2015) to estimate expected volatility over the six year expected term of the options, and
- Tell us how you intend to estimate expected volatility for future stock option grants.

11. Related Party Transactions, page F-40

2. Refer to our prior comment 25. You disclose on page 166 that certain of your directors and officers purchased an aggregate of 6.95 million shares of Dimension common stock for an aggregate price of \$695.45. Please explain why the use of the OPM method based on a preferred stock issuance was appropriate to value Dimension's common stock when there was a contemporaneous issuance of its common stock.
3. Please confirm for us whether you received 10,000 shares of Dimension's common stock or 10 million shares and how you determined the amount of revenue to recognize. You recognized \$2.7 million of revenue which would represent 10 million shares at \$0.27 per share. However, Exhibit 10.18 states that the consideration was 10,000 shares which would be \$2,700 at \$0.27 per share.

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 Act of 1933 and all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and

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- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Rolf Sundwall at (202) 551-3105 or Lisa Vanjoske at (202) 551-3614 if you have questions regarding comments on the financial statements and related matters. Please contact Preston Brewer at (202) 551-3969, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler  
Assistant Director  
Office of Healthcare and Insurance

cc: Via E-Mail  
Jay K. Hachigian, Esq.  
Keith J. Scherer, Esq.  
Gunderson Dettmer LLP