



DIVISION OF  
CORPORATION FINANCE

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

September 27, 2010

Pieter Muntendam, M.D.  
President and Chief Executive Officer  
BG Medicine, Inc.  
610 Lincoln Street North  
Waltham, MA 02451

**Re: BG Medicine, Inc.  
Amendment No. 3 to Registration Statement on Form S-1  
Filed August 31, 2010  
File No. 333-164574**

Dear Mr. Muntendam:

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.

General

1. We understand that you have submitted an amended confidential treatment request application for portions of certain of the exhibits to your registration statement. You will receive any comments we issue regarding your application under separate cover.
2. We note your revised disclosure and response to comment three of our letter dated March 25, 2010. Please revise the first risk factor on page 11 to quantify the "estimated timeframes" and cross reference to the more detailed discussion of the milestones. We also note the statement on page 56 that you have "commenced discussions with several potential providers." Please confirm that you will file the agreements with certified clinical laboratories, as they would appear to be material.

3. We note your response to prior comment four and we partially reissue the comment. Please revise page 75 to identify the principal methods of competition. Also please explain why you believe you have a competitive advantage in providing tests “through established manufacturers,” and clarify why your effort to commercialize your research on biomarkers is different from “the prevailing paradigm of attempting to find or establish a market after making an academic discovery.”

Risk Factors, page 9

4. We note the added risk factor on page 13, “We rely on third-party suppliers...” Please revise to identify the “certain of our products,” “certain suppliers,” and “certain of our third-parties.”

Management’s Discussion and Analysis, page 37

5. We note your updated and revised disclosure on pages 47-50. Please revise to provide further quantitative and qualitative disclosure of your ability to fund your operations, especially given what appears to be the known uncertainty of commercially launching the galectin-3 test in the U.S. For example, it is unclear to what extent you are able to fund operations from “the sale of marketable securities,” and it is unclear what impact would result from a failure to commercially launch the galectin-3 test in the timeframe you anticipate, which appears to be three months. See Item 303(a)(1) of Regulation S-K.

Management, page 82

6. We note the statement on page 83 that Mr. Adourian “served in various other scientific capacities.” Please revise to identify his principal occupations and employment during the past five years.
7. With respect to the statement on page 97 that you “did not have any other executive officers during fiscal 2009” other than the four identified, please advise on what basis you determined that none of the key employees identified on page 82 is an executive officer.

Unaudited Interim Consolidated Financial Statements, page F-1

8. Please present an unaudited Statement of Redeemable Convertible Preferred Stock and Stockholders’ Deficit for the period from the latest fiscal year-end of December 31, 2009 to the interim balance sheet date of June 30, 2010.

Notes to Unaudited Consolidated Financial Statements, page F-29

9. Please disclose subsequent events, if any, in a footnote and disclose the date through which you have evaluated subsequent events. State whether such date is either the date the financial statements were issued or the date the financial statements were available to be issued. Refer to FASB ASC 855-10-50-1.

Item 15. Recent Sales of Unregistered Securities

10. We note the Form D filed April 14, 2010 identifies 14 purchasers. Page II-2 of the registration statement, however, identifies seven. Please tell us the number and names of the purchasers and revise as appropriate.

Item 16. Exhibits and Financial Statement Schedules

11. Please file your collaboration agreements with Alere and bioMérieux.
12. Advise us why you have not filed the bridge note financing.

You may contact Steve Lo at (202) 551-3394 or David Walz at (202) 551-3358 if you have questions regarding comments on the financial statements and related matters. Please contact Damon Colbert at (202) 551-3581 or James Lopez at (202) 551-3536 with any other questions.

Sincerely,

John Reynolds  
Assistant Director

cc: William T. Whelan, Esq.  
Scott A. Samuels, Esq.  
Fax: (617) 542-2241