



DIVISION OF
CORPORATION FINANCE

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

November 29, 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. 5 to Registration Statement on Form S-1
Filed November 22, 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.

Our Company, page 1

1. We note that you received 510(k) clearance from the FDA in November 2010 for a manual version of your BGM Galectin-3 test. We also note that you believe that automated instrument versions of your test will be required for you to achieve broad customer acceptance and clinical adoption. Please revise your prospectus here and wherever appropriate to clarify the expected timeline for FDA clearance of the automated instrument versions of your test.

If we or our third-party manufacturer fail to comply with the FDA's quality system regulation . . . , page 23

2. Please revise this risk factor to specify:

- why the in-use stability study is being re-performed;
- what type of modification would be required if you are required to “modify the product labeling for our galectin-3 test for heart failure”;
- whether the observations were made regarding your own facilities or the facilities of Corgenix or another entity; and
- whether the FDA has told you to cease manufacturing or if you have otherwise been forced to cease.

Also, please tell us why the subheading does not reflect the existence of the findings and related delay, or revise the subheading accordingly.

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