



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

May 24, 2010

Jon Faiz Kayyem, Ph.D.
President and Chief Executive Officer
GenMark Diagnostics, Inc.
757 S. Raymond Avenue
Pasadena, California 91105

**Re: GenMark Diagnostics, Inc.
Registration Statement on Form S-1
Amended on May 13, 2010 and May 21, 2010
File No. 333-165562**

Dear Dr. Kayyem:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Amendment No. 2 filed May 13, 2010

Prospectus Summary, page 1

1. We note your response to prior comment 2.
 - Regarding the disclosure that you have added on page ii, please tell us what other "certain market research information" that appears in the prospectus has been paid for by the company.

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- With respect to your response to the third bullet point, while we note that the row entitled “Number of U.S. orgs” aggregates to approximately 5,000 laboratories and hospitals, it remains unclear how you have determined that your target user base will increase to that number. For example, will all “government-run hospitals” have a need for your products? It also is unclear why your disclosure does not limit your addressable market to the aggregate of the “Number of U.S. orgs performing molecular diagnostics.” Please expand your response to advise.
- We note your revised disclosure on page 57 in response to the fourth bullet point and reissue that portion of the comment. Please quantify what portion or percentage of the \$1.1 billion market that you cite is represented by the “small and emerging multiplex diagnostic segment.”

Principal Stockholders, page 98

2. We refer to prior comment 7 and note that you have not identified the *natural persons* who have or share voting and/or dispositive power with respect to shares held by Gartmore Investment Limited and Schroders Investment Management Ltd. We note further that you have not disclosed the natural persons with voting power with respect to the shares held by FMR, LLC. Please note in this regard that Rule 13d-3 includes as a beneficial owner any person who shares voting or investment power. Accordingly, we reissue comment 36 from our letter dated April 15, 2010.

Amendment No. 3 filed May 21, 2010

Exhibit 5.1

3. Please ensure that the opinion provided in Exhibit 5.1 is dated. Further, given the second sentence of the final paragraph, please provide an opinion as of the effective date of the registration statement.

* * *

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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
- 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

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You may contact Kevin Kuhar at (202) 551-3662 or Jay Webb, Accounting Reviewer, at (202) 551-3603 if you have questions regarding comments on the financial statements and related matters. Please contact Celia Soehner at (202) 551-3463 or me at (202) 551-3625 with any other questions.

Sincerely,

Mary Beth Breslin
Senior Attorney

cc (via facsimile): Michael S. Kagnoff, Esq. — DLA Piper LLP