



DIVISION OF
CORPORATION FINANCE

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

December 21, 2012

Via E-mail

Panna L. Sharma
Chief Executive Officer
Cancer Genetics, Inc.
201 Route 17 North, 2nd Floor
Rutherford, NJ 07070

**Re: Cancer Genetics, Inc.
Amended Registration Statement on Form S-1
Filed December 14, 2012
File No. 333-178836**

Dear Mr. Sharma:

We have reviewed your amended 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.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 51

1. We note your revised disclosure on page 110 and response to comment 6 of our letter dated November 29, 2012. We also note discussion on pages 22 and 110 regarding the risk that Congress will not act on the scheduled cut prior to January 1, 2013. Please revise MD&A to address the status and anticipated effect of any scheduled cuts or failure to act on them where you discuss known trends, events and uncertainties.

Exhibits, page II-6

2. We note your response to comment 8 and the reference on page F-25 to changes "immediately prior to effectiveness." It appears that you filed your articles of incorporation currently in effect with your initial filing, and according to the description in the exhibit index for exhibits 3.2 and 3.4, you filed the form of articles and by laws

with the April 30, 2012 amendment. However, the articles filed on April 30, 2012 refer to automatic conversion of preferred shares upon “the closing of an underwritten public offering pursuant to an effective registration statement in connection with an initial public offering with gross proceeds of \$25,000,000.” Please advise us (1) where the charter documents to be in effect post-closing have been filed and (2) whether you will file the final, executed articles of incorporation with the state of Delaware prior to effectiveness.

3. We note your revised disclosure on page 74 and statement that the landlord “verbally agreed to extend the time to complete a capital raise of at least \$20.0 million.” Please provide a written description of the oral agreement. In this regard, we refer you to Regulation S-K Compliance and Disclosure Interpretation 146.04.

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
- 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.

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You may contact Joanna Lam, Staff Accountant, at (202) 551-3476 or John Archfield, Senior Staff Accountant, at (202) 551-3315 if you have questions regarding comments on the financial statements and related matters. Please contact Jim Lopez, Legal Branch Chief, at (202) 551-3536 with any other questions.

Sincerely,

/s/ James Lopez (for)

John Reynolds
Assistant Director