



DIVISION OF
CORPORATION FINANCE

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

March 26, 2013

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 March 22, 2013
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.

Cover Page

1. We note statements on pages 36, 127 and elsewhere that your shares "will be listed" on the OTCQX. We also note the statement on your cover page that you have applied to have your shares approved for trading on the OTCQX. Please revise the cover page and where appropriate to state, if true, that there is no certainty that market makers will apply to quote your securities on the OTCQX or that a trading market will develop. Additionally, please revise where appropriate to briefly clarify the procedures for trading on the OTCQX and address the actions you have taken and plan to take with the goal of having an authorized OTCQX market maker sponsor your securities.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 57

2. We note the disclosure on page 17 that you "expect that approximately \$9.5 million in indebtedness ... shall remain outstanding after this offering." It appears based on your anticipated use of proceeds and outstanding indebtedness of approximately \$19.2 million that you will have significantly more than \$9.5 million of indebtedness after the offering. Please revise risk factors and Liquidity and Capital Resources to clearly and succinctly describe and quantify your outstanding indebtedness now and after the offering. Your revised disclosure on page 81 should clarify the approximate amount of capital you need after the offering to maintain current operations, as distinguished from expanding your business to meet long-term objectives, for the next 12 months.

Exhibits

3. We note that exhibit 10.72 refers to a \$5 million offering. Given the current maximum estimated proceeds, please revise risk factors or where appropriate to clarify the risk that you will be in default on your lease even assuming the over-allotment option is exercised.

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.

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 Erin Wilson, Legal Examiner, at (202) 551-6047 or Jim Lopez, Legal Branch Chief, at (202) 551-3536 with any other questions.

Sincerely,

/s/ James Lopez (for)

John Reynolds
Assistant Director