



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

DIVISION OF
CORPORATION FINANCE

March 25, 2014

Via E-mail

Mr. Samuel D. Riccitelli
President and Chief Executive Officer
Signal Genetics LLC
667 Madison Avenue, 14th Floor
New York, New York 10065

**Re: Signal Genetics LLC
Registration Statement on Form S-1
Filed March 19, 2014
File No. 333-194668**

Dear Mr. Riccitelli:

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.

Risk Factors, page 12

1. We note your revised disclosure in response to comment 2 of our letter dated March 4, 2014, indicating that you have elected to avail yourselves of the extended transition period for adopting new or revised accounting standards under Section 102(b)(1) of the JOBS Act. Please include a separate risk factor disclosure to explain that this election allows you to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. You should also disclose in the risk factor that, as a result of this election, your financial statements may not be comparable to companies that comply with public company effective dates. Please also include similar disclosures about the delay in adoption of new or revised accounting standards in your significant accounting policies footnotes and in your critical accounting policy disclosures in MD&A.

Use of Proceeds, page 45

2. The use of proceeds section refers to \$1 million borrowed from Mr. LeBow to pay offering expenses. Please disclose in the certain related transactions section.

Critical Accounting Policies, page 54

3. We note your response to prior comments 3 and 7. Please provide us with the following information, and add clarifying disclosure in your filing:
 - a. We note that the timing of collections may take up to 12-14 months from when you record the revenue and accounts receivable. Tell us how you considered the implications of this long collection cycle and why all accounts receivables are classified as current.
 - b. We note your table of gross revenues, contractual allowances and amounts collected for non-contracted companies for each year. For each period presented, quantify and disclose the amount of change in estimates of prior period contractual allowances adjustment that you recorded during the current period. For example, for 2013, this amount would represent the amount of the difference between estimates of these adjustments for services provided in 2012 and the amount of the new estimate or settlement amount that was recorded during 2013.
 - c. Quantify and tell us the amount you have written off on remaining accounts after appeals were exhausted by adjusting net revenues. Discuss when the revenue was initially recorded.
 - d. Quantify and disclose the reasonably possible effects that a change in estimate of unsettled amounts from third party payors as of the latest balance sheet date could have on financial position and results of operations.

Financial Statements, page F-3

4. Considering you will convert from a limited liability company into a corporation as well as converting debt to equity, the new equity incentive plan and restricted stock unit awards that you will enter into upon completion of this offering, tell us how you considered providing a pro forma financial information. Please clearly show how you arrive at the pro forma amount, including pro forma earnings per share amounts, with a discussion of any significant assumptions and estimates used to arrive at the adjustment amounts. Refer to SAB Topics 1:B.2 and 4:B and Article 11 of Regulation S-X.

Exhibits

5. Please file exhibit 10.11 in its entirety, including any exhibits, schedules and/or attachments.

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.

You may contact Joanna Lam, Staff Accountant, at (202) 551-3476 or Nasreen Mohammad, Assistant Chief Accountant, at (202) 551-3773 if you have questions regarding comments on the financial statements and related matters. Please contact Erin Wilson at (202) 551-6047 or Pamela Howell at (202) 551-3357 with any other questions.

Sincerely,

/s/ Pamela Howell
for

John Reynolds
Assistant Director