



DIVISION OF
CORPORATION FINANCE

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

March 4, 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
Amendment No. 2 to Draft Registration Statement on Form S-1
Submitted February 14, 2014
CIK No. 0001590750**

Dear Mr. Riccitelli:

We have reviewed your amended draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Fee Table

1. Please explain how you calculated the maximum aggregate offering price in the fee table. We note the registration statement reflects common stock of 2,272,000 and the underwriters overallotment of 340,800 shares of common stock. That would appear to indicate \$31,353,600 as the maximum aggregate offering price. Provide a similar analysis for the calculation of the representatives warrants.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 52

Critical Accounting Policies, page 54

2. We note your revised disclosure in response to comment 3 of our letter dated January 14, 2013, indicating that while you have not, to date, delayed the adoption of any accounting standards (as permitted by the JOBS Act), you may in the future avail yourself of the extended transition period for complying with new or revised accounting standards. Emerging Growth Company must make such a choice at the time the Company is first required to file a registration statement. Please indicate your choice in your next amendment to comply with Section 107(b)(1) of the JOBS Act.
3. We note your response to prior comment 2 on the estimates used in recording contractual allowance from non-contracted insurance companies. Please provide the following information to explain your estimate:
 - discuss the number of years of limited history you have and provide a schedule of gross revenue, contractual allowance and amounts collected for each of the last three years, as available;
 - explain how using a third party service's collection history is relevant and reliable information in estimating your collection history; and
 - explain why it may take up to 12-14 months and what types of information is needed to receive payment on the balances greater than 90 days.

Executive Compensation, page 93

4. Please provide summary compensation disclosure for the last two years, as required by Item 402(n) of Regulation S-K. We note that the information for the 2012 fiscal year end was included in the prior draft registration statement. In addition, please provide the 2013 compensation information. To the extent such salary or bonus information is not calculable as of the latest practicable date, we direct your attention to Instruction 1 to Item 402(n)(2)(iii) and (iv) of Regulation S-K. In addition, please provide the complete information in the Outstanding Equity Awards Table.

Certain Relationships and Related Transactions, page 101

5. We note your revised disclosure in response to comment 9 to our letter dated January 14, 2014 and we reissue the comment. Please revise to provide the disclosure required by Items 404(a)(1), (3) and (5) of Regulation S-K.

Financial Statements

6. Please update the financial statements, as applicable, pursuant to Rule 8-08 of Regulation S-X. A current consent of the independent accountant is also required.

Notes to Consolidated Financial Statements, page F-7

Summary of Significant Accounting Policies, page F-7

7. We note your response to prior comment 10 on revenue recognition and zero allowance for doubtful accounts for the non-contracted insurance companies. We note that you continually evaluate collections and adjust accounts receivable by adjusting net revenues, if necessary. You also state that once all appeals are exhausted you would write off any remaining accounts by adjusting net revenues. Please explain to us why the adjustments based on uncollectibility of receivables are recorded in revenues and provide your basis in the accounting literature that supports your position. Please revise disclosures as appropriate.

General

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at <http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm>.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (<http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm>). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

Samuel D. Riccitelli
Signal Genetics LLC
March 4, 2014
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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