



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

DIVISION OF  
CORPORATION FINANCE

May 22, 2014

Via E-mail

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

**Re: Signal Genetics LLC  
Amendment No. 2 to Registration Statement on Form S-1  
Filed May 15, 2014  
File No. 333-194668**

Dear Mr. Riccitelli:

We have reviewed your amended registration statement and have the following comment. In our comment, 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 comment applies 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 this comment, we may have additional comments.

Amendment No. 2 to Form S-1 filed on May 15, 2014

1. We note that you included pro forma financial information to give effect to the conversion from a limited liability company into a corporation as well as converting debt, the new equity incentive plan and restricted stock unit awards that you will enter into upon completion of this offering for the interim period ended March 31, 2014. However, you have not provided pro forma information for the fiscal year ended December 31, 2013. Please include pro forma balance sheet and net loss per share data for fiscal year ended 2013 and present similar pro forma disclosures in your summary historical consolidated financial data section.

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.

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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