



DIVISION OF
CORPORATION FINANCE

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

October 19, 2010

Clifford A. Reid, Ph.D.
President and Chief Executive Officer
Complete Genomics, Inc.
2071 Stierlin Court
Mountain View, CA 94043

Re: Complete Genomics, Inc.
Registration Statement on Form S-1/A
Filed October 4, 2010
File No. 333-168439

Dear Mr. Reid:

We have reviewed your response letter and amended registration statement and have the following comments. 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.

Prospectus Summary, page 1

1. We have reviewed your response to prior comment 1. Please include a summary of the relevant information provided in your response, including your discussion of why you believe the quality, cost and scale of your technology is superior.

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You may contact James Peklenk at (202) 551-3661 if you have questions regarding comments on the financial statements and related matters. Please contact Johnny Gharib at (202) 551-3170 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Alan C. Mendelson
Gregory Chin
Latham & Watkins LLP
140 Scott Drive
Menlo Park, California 94025-1008