



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

June 26, 2018

Via E-mail

R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
Bionano Genomics, Inc.
9640 Towne Centre Drive, Suite 100
San Diego, California 92121

**Re: Bionano Genomics, Inc.
Amendment No. 1 to
Draft Registration Statement on Form S-1
Submitted June 12, 2018
CIK No. 0001411690**

Dear Dr. Holmlin:

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.

Overview, page 1

1. It appears from your response to comment 3 that your beliefs regarding cost-effectiveness of your products are based on your expectations rather than existing facts. If so, please revise to disclose the basis of your beliefs. Also, tell us whether "small variations" and "large variations" are industry terms of art. In this regard, it is unclear whether sequencing systems could detect "large variations," given the number of base pairs you indicate in your response.
2. We note your response to comment 4. Please revise to disclose the significance to your business of each of the customers named in your disclosure.

3. Please expand your revisions in response to comment 5 to clarify how the market data in your submission reflects the research use only designation of your product. Also, we note the revisions regarding laboratory developed tests. Please tell us how regulatory approval of laboratory developed tests would impact your addressable market, and revise your disclosure to briefly describe any regulatory uncertainty regarding laboratory developed tests.

Market Opportunity, page 2

4. We note your response to comment 6. Please tell us whether any of the installed base of high throughput sequencers are marketed as other than research use only.

Use of Proceeds, page 46

5. We note your response to comment 10 regarding possible “more specific determinations” about the use of proceeds. Please expand to clarify whether you intend to quantify the amount of proceeds to be used for each of the purposes to which you refer.

Capitalization, page 48

6. We note your response to comment 11 but also note that the amounts presented in the capitalization table do not sum up to \$(20,522,150). Please correct the presentation in your next amendment.

Comparison of the Three Months Ended March 31, 2017 and 2018, page 56

7. Please revise to clarify and quantify how changes in volume of instruments and consumables sold affected your results for the three months ended March 31, 2018 compared to the same period in 2017.

Comparison of the Years Ended December 31, 2016 and 2017, page 57

8. Please revise your disclosure in response to comment 12 to provide quantifications of revenue increases in volume and price as well as the growth rate in revenue from sales of instruments versus consumables.

Principle Stockholders, page 109

9. While we note your revisions in note 1 in response to comment 19, those revisions appear to refer only to who disclaims beneficial ownership rather than who has beneficial ownership. Please revise to identify the natural persons who have or share voting and/or investment power over the referenced shares.

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Note 2. Summary of Significant Accounting Policies, page F-8

Revenue Recognition, page F-10

10. We note that your response to comment 22 appears to only address software upgrades and indicates that this is deemed incidental to the hardware. However, the disclosure on page 80 indicates that performance enhancements will be delivered on a regular basis through software and hardware upgrades. Please revise further to disclose your accounting for hardware upgrades.

You may contact Julie Sherman at (202) 551-3640 or Brian Cascio, Accounting Branch Chief, at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Heather Percival at (202) 551-3498 or Geoff Kruczek, Senior Attorney, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Geoff Kruczek for

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: James C. Pennington, Esq.
Cooley LLP