

Mail Stop 6010

June 26, 2007

Richard Gabriel  
Chief Executive Officer and President  
DNAPrint Genomics, Inc.  
1621 West University Parkway  
Sarasota, FL 34243

**Re: DNAPrint Genomics, Inc.  
Registration Statement on Form SB-2, Amendment 1  
Filed June 4, 2007  
File No. 333-141991**

Dear Mr. Gabriel:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

FORM SB-2

General

1. The page numbers within our comments below correspond to the page numbers in the courtesy copies you provided, which differ from the page numbers in the filing on EDGAR.
2. As you are using proceeds from equity line puts to Dutchess to repay your outstanding note to Dutchess, your outstanding note is part of this equity line.

This transaction is not consistent with our equity line guidance. Please withdraw your registration statement.

Dutchess Agreement, page 4

3. We note you state in response to comment 2 that your response is contained on pages 4-10 of the registration statement.
  - The first paragraph of comment 2 inquired about the amounts of each payment you have made or may be required to make to Dutchess, its affiliates, or any person with whom Dutchess has a contractual relationship regarding the transaction. We note the disclosure of your put rights, through which you will issue stock to Dutchess. However, we are unable to locate disclosure of any other payment obligations related to the equity line arrangement you have with Dutchess. Section 5(D) of the Investment Agreement mentions “amounts paid by the Company for fees as set forth in the Transaction Documents.” Also, section 12(M) mentions a placement agent fee payable to Athena Capital Partners for each drawdown. Please consider whether these and any other fees should be disclosed pursuant to the comment.
  - We are unable to locate your response to the second paragraph of the comment, which requested disclosure of the potential net proceeds to your company from exercises of the puts as well as the total possible payments to Dutchess and any of its affiliates.

We need immediate funds and may not be able to obtain . . . , page 12

4. Please quantify the amount of principal and interest outstanding under the La Jolla Cove convertible debentures.
5. Disclose the number of shares issuable upon conversion of the La Jolla Cover convertible debentures and exercise of warrants as of the most recent practicable date.

We have not paid our Dutchess note principal payments . . . , page 14

6. We note that in response to comment 34, you now state that the Dutchess notes that are in default totaled “\$5.4.” as of March 31, 2007. Please state, if true, that the total is \$5.4 million.

Existing stockholders may experience significant dilution . . . , page 15

7. Please revise to disclose what happened to the stock price during 2006 when you executed 49 puts.

Use of Proceeds, page 15

8. Please revise the column titled "Proceeds if 50% Sold." This Column depicts \$600,000 of net proceeds and uses total of \$725,000.

Our Pharmacogenomics Products, page 23

9. We note that in response to comment 49, you now state that for each of your theranostics products, you "are developing a test to help predict the patients' response to a drug." Please identify the specific drugs associated with each of your four theranostics products.
10. You state timeframes for submitting new drug applications or obtaining FDA approval for PT-401, PT-501, and Diabetes-CD59. Wherever you state these timeframes, please also state that these predictions assume you will be able to complete clinical trials and the results of those trials will be favorable. Also state that there is a high likelihood that those assumptions will prove to be incorrect, as only a small percentage of drug candidates that begin clinical trials are ultimately approved.
11. We note the information provided about your studies with Genomics Collaborative Division of SeraCare Life Sciences, Inc. in response to comment 51. Please disclose, in both the Ovanome discussion and the Statinome discussion, all payments made or to be made by either party. If neither party will make payments, state that fact in the filing.

Our Services for the Forensics Market, page 26

12. We note the information provided in response to comment 55. Please disclose whether or not any study has been conducted to assess the accuracy of your forensics products. If such a study has been done, describe the results.

The Consumer Services Market, page 27

13. We note your revised statements that there are no viable statistics or reports on the consumer genealogy market and that you used your limited knowledge of your competitors and service providers to estimate the market size and market growth. Please provide more information as to what information you have from competitors and service providers and how you used this information to develop these estimates. Alternatively, delete the estimates from your document.

Our Products for the Consumer Product Market, page 28

14. We note that in response to comment 57, you state you have a “basic service provider agreement” with Sorenson Genomics, LLC, and the agreement is terminable at will. Please state the services Sorenson is obligated to provide to you, and describe the agreement’s payment provisions.

Our Genotyping Services, page 29

15. We note your response and revisions pursuant to comment 58. Please identify the customer that accounted for \$311,742 of your revenues during 2006 since this amount is approximately 13 percent of your 2006 revenues. If you do not believe the identity of this customer is material to investors, please explain your reasoning in your response letter.

Dutchess Default, page 48

16. We note that in response to comment 63, you state the amount of liquidated damages you have accrued. Please also state the aggregate principal and interest amounts outstanding.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Greg Belliston at (202) 551-3861, Suzanne Hayes at (202) 551-3675 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey Riedler  
Assistant Director

Richard Gabriel  
DNAPrint Genomics, Inc.  
June 26, 2007  
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cc: Michael T. Cronin  
Johnson, Pope, Bokor, Ruppel & Burns, LLP  
911 Chestnut Street  
Clearwater, FL 33756