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

DIVISION OF
CORPORATION FINANCE

June 13, 2012

Via E-Mail
Steven C. Quay, M.D., Ph.D.
Chairman, Chief Executive Officer and President
Atossa Genetics Inc.
4105 E. Madison Street, Suite 320
Seattle, Washington 98112

Re: Atossa Genetics Inc.
Amendment no. 3 to Registration Statement on Form S-1
Filed June 11, 2012
File No. 333-179500

Dear Dr. Quay:

We have reviewed your 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Cover Page

1. Please revise your disclosure throughout to fully reflect the type of underwriting. If this is an "all or nothing" type of best efforts underwriting, please indicate this on the cover page. If the underwriting is a "best efforts" no minimum offering, revise throughout to reflect this by indicating various scenarios, based upon various possible levels of proceeds, such as 25%, 50% and 100%. Your revisions should also give investors a clear picture of the risks associated with the type of underwriting, if any. For example, if the underwriting type is a no minimum best efforts offering, your disclosure must make clear that the company may receive minimal proceeds, and the stock may be illiquid. This impacts your disclosure on the cover page, use of proceeds, dilution, capitalization and plan of distribution.

2. Please remove the name of the placement agent from the cover page.

The Company, page 1

3. We note your response to prior comment 3. Please revise throughout the prospectus to clarify the extent to which the technologies underlying your products are patented and the extent to which these technologies are not patented. For example, we note that the text of Exhibit 10.25 implies that the technologies underlying your NextCYTE Test are not patented.

Our Diagnostic tests, page 2

4. We note that you have revised your disclosure in response to prior comment 4 to state that your FullCYTE Breast Health Test analyzes "the samples by molecular and cellular biomarkers, in a fashion similar to the ForeCYTE test." Please revise to clarify specifically how your FullCYTE Breast Health Test differs from your ForeCYTE test, clarify what your FullCYTE laboratory tests detect and identify the molecular and biomarkers that are analyzed and how they are analyzed to ascertain the individual duct that contains the pre-malignant or malignant changes. Please also clarify how your various tests differ from traditional biopsies and may allow a physician to better target treatment.

5. We note your response to prior comment 3. Please revise to clarify how you are developing the NextCYTE technology given that it appears that the University of Oslo owns this technology. Please also revise to describe the research you are conducting to verify the superiority of the technology regarding the NextCYTE Breast Cancer Test and describe any results of this research, including any negative results. For example, please revise to clarify if you or anyone involved with the NextCYTE Breast Cancer Test are conducting clinical trials and the results of any such clinical trials.

Management's Discussion and Analysis…, page 27
Critical Accounting Policies and Estimates, page 29

6. Please revise to provide a critical accounting policy for inventory that includes a discussion of significant judgments required in recording the lower of cost or market adjustments and how you determine market value for purposes of applying lower of cost or market accounting to inventory. We see that the sales price of your MASCT System is substantially lower than its cost. Please refer to FRR-72.

Results of Operations, page 34
Comparison of the Three Months Ended March 31, 2012 and 2011…, page 35

7. We reference the disclosure that revenue for the three months ended March 31, 2012 consisted of sales of your MASCT System and ForeCYTE test. Please revise to disclose the amount of revenue associated with product sales and services from the MASCT and

ForeCYTE test. Please also clarify whether the revenue generated from ForeCYTE is entirely related to testing services rather than sales of the ForeCYTE kit.

8. As a related matter, you disclose that cost of goods sold consisted of $7,760 in *direct costs* related to the production of the MASCT systems. Since you wrote off inventory to zero in the prior period, please tell us the nature of these direct costs.

9. Since you record inventory at net realizable value, which you have determined to be zero, please revise to disclose the impact on gross margin of the sales of inventory written down with no corresponding cost of goods sold in each period presented.

The FullCYTE Breast Health Test, page 47

10. We note your response to prior comment 2 and your statement that you have studied the use of the FullCYTE microcatheter in six patients. Please revise to describe this study and its results, including any negative results.

Plan of Distribution, page 87

11. We note the placement agent agreement filed as Exhibit 1.1 to your most recent amendment. Please revise to ensure that this section describes the material terms of the offering process, including without limitation the length of the offering period, the materials to be provided to investors and any right to reject subscriptions. To the extent that you intend to use a subscription agreement in this offering, please file the agreement as an exhibit with your next amendment.

Consolidated Financial Statements for the three months ended March 31, 2012
Consolidated Statements of Operations, page F-2

12. Please revise to separately present sales and cost of goods sold of products and services to provide transparent disclosure and enhance an investor's understanding of the nature of the revenues recorded each period.

13. We reference your response to comment 11 and our telephone conversation on June 12, 2012. We understand that you write down inventory to zero in the period purchased and the cost of goods sold related to the MASCT System in the statements of operations is an allocation of the lower of cost or market adjustment for inventory purchased during the period rather than the direct costs of MASCT Systems sold during the period. Please revise to reclassify the allocated cost of goods sold to loss on reduction of inventory to lower of cost or market.

14. As a related matter, please revise to reclassify the cost of the ForeCYTE kits that you provide to customers at no cost to selling or general and administration expenses.

Note 3. Inventories, pages F-6 and F-28

15. Consistent with your response to comment 11, please revise your accounting policy for inventory to accurately reflect your accounting for the MASCT inventory, including how you determine the lower of cost or market adjustment each period. Your revised disclosure should also include a discussion of your accounting for the ForeCYTE kits, including how you account for the cost of the kits that you provide to customers free of charge.

Exhibit 10.27

16. We note the disclosure in Section 7.1 that the AdnaTest kits and supplies are not approved by the FDA and must not be used for diagnostic purposes. Given that it appears that these kits and suppliers are used for the ArgusCYTE test, please tell us and clarify throughout your disclosure whether these kits and supplies have received FDA approval.

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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and

- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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 Kristin Lochhead at (202) 551-3664 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 Allicia Lam at (202) 551-3316 or Daniel Morris, Special Counsel, at (202) 551-3314 with any other questions.

Sincerely,

/s/ Daniel Morris for

Amanda Ravitz
Assistant Director

cc (by e-mail): Ryan Murr
Ropes & Gray LLP