October 3, 2012

Via EDGAR and Overnight Delivery

Amanda Ravitz
U.S. Securities and Exchange Commission
100 F Street, N.E.
Mail Stop 3030
Washington, D.C. 20549

Re: Atossa Genetics Inc.
Amendment No. 9 to Registration Statement on Form S-1
File No. 333-179500

Dear Ms. Ravitz:

On behalf of Atossa Genetics Inc. ("***Atossa***" or the "***Company***"), we are responding to the Staff's oral comments made on September 14, 2012 relating to the above-referenced Registration Statement on Form S-1 (the "***Registration Statement***"). For your convenience, we have repeated the Staff's oral comments below in bold face type before our response.

1. Please consider the need to file a pre-effective amendment to your Registration Statement to describe in the Registration Statement the agreement with MultiPlan, Inc. that was disclosed in your free writing prospectus filed with the Securities and Exchange Commission on September 13, 2012. Please also consider the need to file the agreement with MultiPlan, Inc. as an exhibit to the Registration Statement.

In response to the Staff's comment, the Company has filed pre-effective Amendment No. 9 to the Registration Statement, wherein the Company describes its agreement with MultiPlan, Inc. ("***MultiPlan***") in the "Prospectus Summary" and "Business" sections of the Registration Statement. In such description, the Company notes that the rate of reimbursement under the MultiPlan agreement is in the range of reimbursement that the Company has historically received. The historical rates of reimbursement are disclosed on pages 5, 50, 54 and 58 of the Registration Statement.

The Company also advises the Staff that it has not filed a copy of the agreement with MultiPlan as an exhibit to the Registration Statement because filing the agreement is not required per the terms of Item 601 of Regulation S-K. Item 601 of Regulation S-K provides that a registrant must file:

"**Every contract not made in the ordinary course of business** which is material to the registrant and is to be performed in whole or in part at or after the filing of the registration statement or report or was entered into not more than two years before such filing. Only contracts need be filed as to which the registrant or subsidiary of the registrant is a party or has succeeded to a party by assumption or assignment or in which the registrant or such subsidiary has a beneficial interest.

If the contract is such as ordinarily accompanies the kind of business conducted by the registrant and its subsidiaries, **it will be deemed to have been made in the ordinary course of business and need not be filed unless it falls within one or more of the following categories, in which case it shall be filed except where immaterial in amount or significance**:

(A) Any contract to which directors, officers, promoters, voting trustees, security holders named in the registration statement or report, or underwriters are parties other than contracts involving only the purchase or sale of current assets having a determinable market price, at such market price;

(B) **Any contract upon which the registrant's business is substantially dependent, as in the case of continuing contracts to sell the major part of registrant's products or services or to purchase the major part of registrant's requirements of goods, services or raw materials or any franchise or license or other agreement to use a patent, formula, trade secret, process or trade name upon which registrant's business depends to a material extent**;

(C) Any contract calling for the acquisition or sale of any property, plant or equipment for a consideration exceeding 15 percent of such fixed assets of the registrant on a consolidated basis; or

(D) Any material lease under which a part of the property described in the registration statement or report is held by the registrant." (emphasis added)

Per the language of Item 601 of Regulation S-K, contracts that ordinarily accompany the kind of business conducted by a registrant are deemed to have been made in the ordinary course of business and need not be filed, subject to a few select exceptions. In the case of the Company, a company in the diagnostic testing industry, contracts relating to reimbursement by third parties for tests performed are contracts that ordinarily accompany the kind of business conducted by companies in such industry. Therefore, the Company's agreement with MultiPlan is deemed to have been made in the ordinary course of business and need not be filed unless the Company is substantially dependent upon the agreement to carry on its business.

The Company's business is not substantially dependent upon the agreement with MultiPlan because, to date, the Company has not received any revenue per the agreement. Furthermore, the agreement with MultiPlan provides that reimbursement will be provided at a prescribed rate when insurers agree to reimburse for the ForeCYTE and ArgusCYTE Breast Health Tests, but the agreement with MultiPlan does not ensure that each test performed will be deemed medically necessary and ultimately reimbursed by insurers because the insurers may still determine the medical necessity of each test on a case-by-case basis. For illustrative purposes only, if an insurer is billed $1,000 when a ForeCYTE test is performed, the agreement with MultiPlan merely provides that, when the ForeCYTE test is deemed medically necessary and worthy of reimbursement, participating insurers will reimburse $950 of the $1,000; the agreement with MultiPlan does not guarantee that the cost of each and every ForeCYTE or ArgusCYTE test performed will be reimbursed.

Additionally, because approximately 80% of Americans are covered by insurance companies that are not covered by MultiPlan, the Company intends to enter into agreements with approximately 200 different entities where such agreements would be similar to the agreement that has been entered into with MultiPlan. Moreover, the agreement with MultiPlan is merely one formal agreement currently in existence pursuant to which the Company may receive reimbursement. As disclosed in the Registration Statement, the Company has received reimbursement from Medicare and certain insurance carriers for the ForeCYTE test and has received reimbursement from certain insurance carriers for the ArgusCYTE test. The Company currently receives reimbursement for these tests on a case-by-case basis.

2. Please consider the need to file a pre-effective amendment to your Registration Statement to include in the Registration Statement the unaudited balance sheet data as of August 31, 2012 that was presented in your free writing prospectus filed with the Securities and Exchange Commission on September 13, 2012.

In response to the Staff's comment, the Company advises the Staff that the Company does not view the unaudited balance sheet data as material and the sole reason such data was disclosed in the free writing prospectus filed with the Securities and Exchange Commission on September 13, 2012 was to satisfy a request from NASDAQ relating to the Company's stockholders' equity as of August 31, 2012. Accordingly, the Company has not included the unaudited balance sheet data as of August 31, 2012 in the Registration Statement.

Although the balance sheet data as of August 31, 2012 is not included in the Registration Statement, the Company advises the Staff that there were no significant transactions, write downs, impairments, etc. during the period from July 1, 2012 through August 31, 2012 that are reflected in the balance sheet data and that there are no items in the August 31, 2012 income statement that are out of the ordinary or that would affect the August 31, 2012 balance sheet data. The Company notes that net loss from July 1, 2012 through August 31, 2012 is lower than net loss through June 30, 2012; this decrease is due to an increase in revenue resulting from additional testing services being performed between July 1, 2012 and August 31, 2012, as well as decreased spending on research and development pending receipt of proceeds from this offering. Proceeds received from this offering will be utilized to advance the Company's operations as set forth in the "Use of Proceeds" section of the Registration Statement.

* * *

In addition to the foregoing edits to the Registration Statement in response to the Staff's comments, the Company has also described two new business developments in the Registration Statement.

First, the Company describes entering into a Supply and Distribution Agreement with Diagnostics Test Group LLC in the "Prospectus Summary" and "Business" sections of the Registration Statement and also filed the Supply and Distribution Agreement, subject to the confidential treatment request submitted of even date herewith, as an exhibit to the Registration Statement.

Second, the Registration Statement also describes the Company's acquisition of substantially all of the assets of Acueity Healthcare, Inc. ("***Acueity***") on September 30, 2012. The Company has analyzed the accounting treatment of the asset purchase for SEC reporting purposes and for purposes of GAAP and has determined that the acquisition of substantially all of the assets of Acueity does not constitute the acquisition of a "business." Accordingly, no financial statements of Acueity are presented in the Registration Statement.

In determining that the purchase of substantially all the assets of Acueity did not constitute the acquisition of a "business," the Company undertook the following analysis:

Facts

On September 30, 2012, the Company acquired substantially all of the assets of Acueity in an asset purchase transaction. At closing, Acueity's assets consisted primarily of cash of $400,000, 18 issued U.S. patents, 17 issued foreign patents, 32 pending U.S. patent applications, 9 pending foreign patent applications, and six 510(k) FDA marketing authorizations related to the manufacturing, use, and sale of the Viaduct Miniscope and accessories, the Manoa Breast Biopsy system, the Excisor Bioptome, the Acueity Medical Light Source, and the Viaduct Microendoscope and accessories; no liabilities were assumed in the transaction. In consideration for the assets, the Company issued a total of 862,500 shares of common stock and warrants to purchase up to 325,000 shares of common stock at an exercise price of $5.00 per share. The Company did not take control of Acueity's equity interests. There are no future financial obligations from the Company to Acueity, whether from the commercialization of the purchased assets or otherwise.

The unaudited financial statements of Acueity for the period January 2009 to March 31, 2012 show essentially no revenue, expenses, or operations since January 1, 2009. There was a small amount of revenue in 2010 with none again in 2011 or 2012.

The acquired patents and patent applications relate to intraductal diagnostic and therapeutic devices and methods of use. The microendoscopes are less than 0.9 mm outside diameter and can be inserted into a milk duct. This permits a physician to pass a microendoscope into the milk duct system of the breast and view the duct system via fiberoptic video images. Abnormalities that are visualized can then be biopsied from inside the duct with the biopsy tools that are inserted adjacent to the microendoscope.

The financial statements of Acueity will be provided supplementally to the Staff at your request.

The Acueity ViaDuct Miniscope and accessories, cleared by the FDA in 2004, are intended for use by a physician for viewing an interior cavity of the human body through either a natural opening (i.e., milk duct) or an incision. The accessory device is capable of grasping soft tissue for biopsy for diagnostic purposes only. It comprises a semi-rigid fiberscope with an irrigating outer sheath or introducer capable of passing a biopsy needle. There is also an inner grasping sheath or tube that can be placed within the outer introducer which together act as forceps capable of grasping soft tissue for biopsy. The combination of these devices allows access to very finite spaces.

The Manoa Breast Biopsy System, cleared by the FDA in 2004, is intended for diagnostic sampling of breast tissue during a breast biopsy procedure for diagnostic purposes only. It comprises a sheath introducer, a tissue cutter, a specimen retriever and an electrosurgical cable. It is a minimally invasive biopsy device designed to penetrate, cut and collect an intact tissue specimen during a biopsy procedure.

The Acueity Excisor Bioptome, cleared by the FDA in 2003, is a multiple action biopsy system intended for obtaining a soft tissue breast biopsy for diagnostic purposes only. It is a percutaneous, mechanical coring device utilizing imaging guidance such as ultrasound and X-ray for breast biopsy. The basic structure of the device includes a motorized cutter and detachable stainless steel introducer with aluminum handle or finger piece and aspiration port and a stainless steel trocar.

The Acueity Medical Light Source, cleared by the FDA in 2003, illuminates the operative site and provides video images that can be displayed on a monitor. It is designed for attachment to endoscopes and laparoscopes that are used in medical procedures.

The Acueity ViaDuct MicroEndoscope, cleared by the FDA in 2001, is a semi-rigid fiberscope with a single use sheath and a re-usable (resposable) microendoscope for use by a physician for viewing an interior cavity of the human body through either a natural opening or an incision.

The Company intends to re-establish manufacturing of these medical devices and launch these products by the end of 2013.

Analysis

The question arises as to the accounting treatment of the asset purchase for SEC reporting purposes and for purposes of GAAP.

Rule 3-05(a)(2) of the SEC's Regulation S-X refers to the definition of a business in Rule 11-01(d), which states, in part: "[T]he term business should be evaluated in light of the facts and circumstances involved and whether there is sufficient continuity of the acquired entity's operations prior to and after the transactions so that disclosure of prior financial information is material to an understanding of future operations. A presumption exists that a separate entity, a subsidiary, or a division is a business".

Rule 11-01(d) also provides several attributes that should be considered in this determination, including:

• Whether the nature of the revenue-producing activity will generally remain the same after the asset purchase; and

• Whether any of the following attributes will remain after the asset purchase: the facilities, employee base, market distribution system, sales force, customer base, operating rights, production techniques, or trade names.

Acueity has had no revenue from the sale of the purchased medical devices since 2008. Acueity has also had no expenses related to these medical devices since 2009. There were no employees in 2011 and 2012 and there was only one employee in 2010.

In addition, in the acquisition of substantially all the assets of Acueity, the Company did not acquire any facilities and there are no employees of Acueity who beceme employees of the Company. Further, when Acueity sold product four years ago, it used an independent sales organization, which the Company did not purchase. Moreover, Acueity never had a sales force of its own, it does not have a customer base, and the Company did not purchase any operating rights of Acueity. The Company acquired rights to production know-how, but it is expected that substantial further work will be needed to be able to produce the devices at a commercial scale.

Another required analysis is the development-stage enterprise, which may also meet the definition of a business. Statement 7 [ASC 915] defines a development stage enterprise as one that:

[I]s devoting substantially all of its efforts to establishing a new business and either of the following conditions exists:

a. Planned principal operations have not commenced.

b. Planned principal operations have commenced, but there has been no significant revenue therefrom.

An evaluation must be made to determine if there will be sufficient continuity of operations after the asset purchase has been consummated. While all of the factors in Rule 11-01(d) should be considered, it is important to assess the nature of the revenue-producing activity and whether this activity will generally remain the same after the asset purchase. However, in most instances, a development stage enterprise has not yet generated significant revenues. In such cases, it may be appropriate to consider the consistency of expenditures and the nature of the revenue-producing activity that is expected to occur.

As stated above, Acueity has not had revenue from operations in 2012, 2011 or 2009, and only had revenue of $10,917 in 2010. Therefore, no continuity of revenue exists. Likewise, total expenses from operations were $1,330 in 2012 and $577 in 2011. There are no expenses classified as research and development for the financial periods beginning in January 1, 2009. Thus, there is no history of a “consistency of expenditures” (except that they have been de minimis consistently) and therefore no need to provide past expenses as a prediction of the future.

In addition, the “continuity of operations” test fails as well. The current ductoscope is steered manually and requires manual dexterity. The Company intends to develop a second generation ductoscope that can be steered by computer and will be much easier to use.

Conclusion

The Company’s acquisition of substantially all the assets of Acueity does not meet either the GAAP or the SEC definition of a “business” and therefore audited financial statements for Acueity need not be presented in the Registration Statement.

An analysis is currently being performed to determine the value of the assets acquired and any residual goodwill following the asset purchase.

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If you have any questions or comments regarding the foregoing, please do not hesitate to contact me.

Sincerely,

/s/ Lisa M. Kahle

Lisa M. Kahle