

Mail Stop 6010

May 24, 2007

Via Facsimile and U.S. Mail

Ms. Debra A. Schneider
Chief Financial Officer
Transgenomic, Inc.
12325 Emmet Street
Omaha, NE 68164

**RE: Transgenomic, Inc.
Item 4.01 Form 8-K
Filed May 22, 2007
File No. 0-30975**

Dear Ms. Schneider:

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 more 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 8-K dated May 16, 2007

Item 4-01. Changes in Registrant's Certifying Accountant

1. Please amend your Form 8-K to specifically state whether your former auditor resigned, declined to stand for re-election, or was dismissed as required by Item 304(a)(1)(i) of Regulation S-K. Although we note the reason for the change, it is not sufficient to state "the audit committee of the Registrant replaced Deloitte & Touche (the "Former Accountant")", as that wording may be unclear to a reader. Disclose the date your relationship ended for purposes of performing audit services. Also, indicate whether the decision to change auditors was recommended or approved by your board of directors.
2. State whether during your two most recent fiscal years and any subsequent interim period before your former auditor resigned, declined to stand for re-election, or was dismissed, you had any disagreements with your former auditor on any matter of accounting principle or practice, financial statement disclosure, or auditing scope or procedure.
3. To the extent that you amend the Form 8-K to comply with our comments, please obtain and file an updated Exhibit 16 letter from the former accountant stating whether the accountant agrees with your Item 304 disclosures, or the extent to which the accountant does not agree.

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As appropriate, please amend your filing and respond to these comments within five business days or tell us when you will provide us with a response. 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 urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

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In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

If you have any questions, please call David Burton at (202) 551-3626.

Sincerely,

David Burton
Staff Accountant