



DIVISION OF
CORPORATION FINANCE

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

April 9, 2013

Via E-mail

Mr. Mark Selawski
Chief Financial Officer and Secretary
AtheroNova, Inc.
2301 Dupont Drive, Suite 525
Irvine, CA 92612

**Re: AtheroNova, Inc.
Item 4.02 Form 8-K
Filed March 29, 2013
File No. 000-52315**

Dear Mr. Selawski:

We have reviewed your filing and have the following comments. In our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within five business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe a comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments.

After reviewing any amendment to your filing and any information you provide in response to the comments, we may have additional comments.

1. Please amend your filing to state whether you have considered the impact of the material errors that you have described on your prior assertions regarding disclosure controls and procedures, made pursuant to Item 307 of Regulation S-K.
2. Please amend your filing to elaborate on any internal control deficiencies that allowed the error to prevail and explain to us why you were able to conclude that it did not amount to a material weakness. Also explain to us how you considered the error in your assessment of your internal control over financial reporting in your December 31, 2012 Form 10-K.

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

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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.

In responding to our comments, please provide a written statement from the company acknowledging that:

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

You may contact Frank Wyman, Staff Accountant, at (202) 551-3660, if you have questions regarding the comments.

Sincerely,

/s/ Joel Parker

Joel Parker
Accounting Branch Chief