AtheroNova Inc.
Form 424B3
September 29, 2010

ATHERONOVA INC.

Filed Pursuant to Rule 424(b)(3)
Registration No. 333-167866

PROSPECTUS SUPPLEMENT NO. 1
(To Prospectus dated September 28, 2010)

This is a prospectus supplement to our prospectus dated September 28, 2010 relating to the resale from time to time by selling stockholders of up to 1,805,825 shares of our Common Stock. On September 21, 2010, we announced the results of our initial pre-clinical study. The text of the press release is attached to and made a part of this prospectus supplement.

This prospectus supplement should be read in conjunction with the prospectus and is qualified by reference to the prospectus except to the extent that the information provided by this prospectus supplement supersedes the information contained in the prospectus.

The securities offered by the prospectus involve a high degree of risk. You should carefully consider the “Risk Factors” referenced on page 4 of the prospectus in determining whether to purchase the Common Stock.

The date of this prospectus supplement is September 28, 2010.

AtheroNova Inc. Announces Results of Initial Pre-Clinical Study

Press Release Source: AtheroNova Inc. On Tuesday September 21, 2010, 9:15 am EDT

IRVINE, CA--(Marketwire - 09/21/10) - AtheroNova Inc. (OTC.BB:AHRO - News) ("AtheroNova"), a biotech company focused on the research and development of compounds to regress atherosclerotic plaque, announced results of the Company's initial animal study conducted at a major university demonstrating the study group having a 95% less occurrence of arterial plaque compared to the control group.

"The results of our initial animal study were extremely encouraging," stated Thomas W. Gardner, CEO of AtheroNova. "Based on the results of our initial study, we are preparing to commence a second pre-clinical study at the Cedars-Sinai Division of Cardiology in conjunction with a major university to validate our initial results and then proceed with an Investigative New Drug application and planning for Phase I human trials."

About AtheroNova

AtheroNova, through its wholly-owned subsidiary, AtheroNova Operations, Inc., is a development stage company currently researching novel patents-pending applications of certain natural compounds to regress atherosclerotic plaque deposits, a process called delipidization. The company is currently developing protocols for its second animal study at the Cedars-Sinai Division of Cardiology in conjunction with a major university to validate the findings of its initial study and prepare for human trials. The Company plans to develop multiple applications for its compounds, to be used in pharmaceutical grade products for the treatment of atherosclerosis.

Prior to May 13, 2010, AtheroNova was a public "shell" company with nominal assets whose sole business was to identify, evaluate and investigate various companies to acquire or with which to merge.

Additional information about AtheroNova and AtheroNova Operations (formerly Z&Z Medical Holdings, Inc.) can be found in AtheroNova's Current Report on Form 8-K filed with the Securities and Exchange Commission on May 20, 2010.

Forward-Looking Statements

Except for historical information contained herein, the statements in this release are forward-looking and made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are inherently unreliable and actual results may differ materially. Examples of forward-looking statements in this news release include statements regarding commencement of the second animal trial, an Investigative New Drug Application and Phase I human trials, and the development of applications for AtheroNova's compounds. Factors which could cause actual results to differ materially from these forward-looking statements include such factors as significant fluctuations in expenses associated with clinical trials, failure to secure additional financing, the inability to complete regulatory filings with the Food and Drug Administration, the introduction of competing products, or management's ability to attract and maintain qualified personnel necessary for the development and commercialization of its planned products, and other information that may be detailed from time to time in AtheroNova's filings with the United States Securities and Exchange Commission. AtheroNova undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Contact:

Company contact:
Thomas Gardner

Chief Executive Officer
Or
Mark Selawski
Chief Financial Officer
(949) 476-1100

Investor Contact:
Leon Hamerling
Investor Media Group
877-725-2500