

# AtheroNova Inc. AHRO-OTC.BB

# Fiscal Year 2012 Business Update

**April 5, 2013** 

## **Company Description**

AtheroNova Inc. ("AtheroNova" or "the Company") is a biotechnology company focused on research and development of bile salt therapeutic compounds to safely dissolve or regress atherosclerotic plaque and improve patients' lipid profiles. Atherosclerotic plaque is a buildup of fat, cholesterol, and other substances in the wall of arteries. These plaque deposits, which progressively narrow and block the arteries, are the main underlying cause of cardiovascular disease, including heart attack, stroke, and peripheral artery disease (PAD). The Company's most advanced candidate, AHRO-001, works to reduce the incidence and severity of plaque by employing a bile salt to dissolve existing plaque deposits as well as prevent new deposits from forming. Bile salts are an FDA-approved natural compound used to dissolve gallstones, and have shown to be well tolerated with no history of safety concerns. AtheroNova believes that its therapeutic compounds' ability to potentially regress atherosclerosis, coupled with a favorable safety and tolerance profile, provides a competitive advantage versus current therapies, which merely stabilize the disease. AHRO-001 is progressing toward Phase I human clinical trials in Russia with the support of AtheroNova's research and development partner, Russia-based OOO CardioNova, Ltd. AtheroNova is also conducting preclinical studies to expand the use of its patent-pending technology to additional forms of cardiovascular disease that have been linked to atherosclerosis, including obesity, hypertension, diabetes, stroke, PAD, localized transdermal fat dissolution, and the dissolution of lipomas.

## **Key Points**

- In late January 2013, AtheroNova's CEO, Thomas W. Gardner, detailed the Company's development for investors, noting that AtheroNova expects to initiate and complete a Phase I trial for AHRO-001 in Russia by the third quarter 2013. The Company's partner, OOO CardioNova, has already filed an Investigational New Drug (IND) application for AHRO-001 with Russia's Ministry of Healthcare, and OOO CardioNova's parent company, the Maxwell Biotech Group, has agreed to fund Phase I and Phase II clinical trials in Russia. As announced by AtheroNova in January, Phase II trials could commence in the fourth quarter 2013.
- AtheroNova has further announced that it intends to file a U.S. IND application in 2013. Preclinical U.S. studies for AHRO-001 at UCLA and Cedars-Sinai were successful at verifying plaque and cholesterol reduction as well as safety. The use of AHRO-001 has been found to lead to a 95% reduction in innominate arterial plaque formation versus a control group.
- Also in the first quarter 2013, AtheroNova launched a new website designed to keep the public updated on its clinical programs and milestones as it transitions from a preclinical to a clinical-stage company.
- The global lipid regulator market was valued at \$38.7 billion in revenues in 2011, driven by high prevalence of cardiovascular disease and limited therapeutic options (Source: IMS Health). Today, statins are considered the most effective available method for reducing cholesterol levels despite concerns over long-term tolerability, safety, and efficacy. Moreover, new research has found that the use of statins may actually result in an increase of certain types of coronary plaque.
- As of December 31, 2012, AtheroNova's cash position was over \$2.7 million.

# **AtheroNova**

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Ticker (Exchange)	AHRO (OTC.BB)	
Recent Price (04/04/2013)	\$0.60	
52-week Range	\$0.35 - \$1.07	
Shares Outstanding*	~38.1 million	
Market Capitalization	~\$22.9 million	
Average 3-month Volume	31,149	
Insider Owners + >5%	32%	
Institutional Owners	5%	
EPS (Yr. ended 12/31/2012)	(\$0.09)	
Employees/Consultants	8	



<sup>\*</sup> As of March 18, 2013.



#### **Recent Events and Financial Results**

#### **Recent Events**

An overview of the Company's recent news announcements is provided below, referring the reader to AtheroNova's website for complete press releases (<a href="https://www.atheronova.com">www.atheronova.com</a>).

- On March 21, 2013, AtheroNova filed a Form 8-K with the U.S. Securities and Exchange Commission (SEC) announcing that the Company's financial statements for the fiscal quarters ended June 30, 2012, and September 30, 2012, needed to be restated, due to an amendment of certain notes and warrants issued in 2010. AtheroNova filed the restated financial statements on March 29, 2013.
- On March 14, 2013, AtheroNova announced that Dr. Giorgio Zadini, one of the Company's co-founders, transferred certain of his holdings in connection with his retirement from all business activities. The transactions were concluded with investors from the Company's recent private placement offering as well as other long-term investors of AtheroNova. The Company expected to announce the appointment of a new head to the Scientific Advisory Board within a few weeks to fulfill the role previously held by Dr. Zadini.
- On January 29, 2013, AtheroNova announced the launch of its new website, designed to allow investors and interested parties to follow the coming developments in the Company as it transitions from a preclinical to a clinical-stage company. The website, which went live January 18, 2013, has augmented content and graphics to enhance the user experience. Concurrently, the Company developed a mobile application (available at <a href="https://itunes.apple.com/us/app/atheronova/id603256015">https://itunes.apple.com/us/app/atheronova/id603256015</a>) that allows users and investors to receive alerts on AtheroNova's news as well as access public documents of the Company.
- On January 17, 2013, AtheroNova announced that its chief executive officer (CEO), Thomas W. Gardner, was scheduled to present at "NINE": Noble Financial Capital Markets' Ninth Annual Equity Conference in Hollywood, Florida, on January 23, 2013. Mr. Gardner discussed milestones for 2013 for the Company's lead compound, AHRO-001, as well as the Company's pipeline and clinical plans.

#### **Financial Results**

On April 1, 2013, AtheroNova reported financial results for its full fiscal year ended December 31, 2012.

As a development-stage company, AtheroNova reported no revenues for the year ended December 31, 2012.

The Company's research and development (R&D) expenses were \$986,261 for the 12 months ended December 31, 2012, up from \$381,540 in the same period in 2011. AtheroNova attributed the increase to development and formulation of the Phase I clinical trials compound, commencement of an additional preclinical trial, and purchase of active pharmaceutical product needed for preparations for preclinical and clinical trials.

AtheroNova's general and administrative (G&A) expenses rose to nearly \$2.7 million in 2012, up from roughly \$2.2 million for the year-ago period. The increase was mainly the result of higher administrative costs for consultants, increased professional fees for additional accounting and legal work, and payroll costs associated with financing goals achieved in 2012.

For the year ended December 31, 2012, interest expense rose to \$871,431, up from \$658,175 in the equivalent 2011 timeframe.

For the 12 months ended December 31, 2012, cost to induce conversion of 12% notes was \$866,083 compared to \$0 for the comparable period of 2011. In addition, the Company reported a gain on the change in fair value of derivative liabilities of only roughly \$2.6 million, compared to a gain of approximately \$6.7 million for the same



period in the prior year. For the year ended December 31, 2012, gain on extinguishment of derivative liability was \$97,975 compared to \$811,393 for the year ended December 31, 2011.

AtheroNova reported a net loss of over \$2.6 million, or (\$0.09) per diluted share, for the year ended December 31, 2012, versus a net income of approximately \$4.3 million, or \$0.15 per diluted share, for the same 2011 timeframe. The change was due to lower income derived from changes in the fair value of derivative liabilities, increased operating expenses, increased interest expense, and losses from conversion of various debt instruments.

As of December 31, 2012, the Company's cash position was over \$2.7 million.



#### **Company Background**

AtheroNova Inc. ("AtheroNova" or "the Company") is a biotechnology company focused on researching, developing, and licensing pharmaceuticals to modulate lipid profiles and reduce or eliminate atherosclerosis—a thickening of the arteries that occurs when fat, cholesterol, and other substances build up in the walls of the arteries and form plaque deposits. AtheroNova is researching patent-pending applications of bile salts (natural compounds that have been used previously to dissolve gallstones) to regress atherosclerotic plaques (atheromas) via a process called delipidization, which dissolves plague in artery walls and removes it by natural body processes. These plaque deposits are believed to come from weaknesses or imperfections in the arterial walls or may develop at the site of arterial inflammations. Atherosclerosis is the main cause of many cardiovascular diseases, including heart attack, stroke, and peripheral artery disease (PAD). More money is spent attempting to treat cardiovascular disease than any other disease. The condition is so prevalent that cardiovascular disease is the leading cause of morbidity and mortality in industrialized countries, with atherosclerosis being the primary fundamental pathology.

The Company's most advanced compound, AHRO-001, is being developed as a novel regression treatment of atherosclerotic plaque. AHRO-001 is intended to dissolve existing atherosclerotic plaques as well as prevent the formation of new ones. The Company seeks to market its product against currently approved therapies, which merely stabilize the disease. It is this potential for plaque regression that AtheroNova believes could distinguish AHRO-001 from other atherosclerosis treatments on the market and candidates in development.

#### Formation of Atherosclerosis

Cholesterol deposits or "plaque" accumulate in arteries over time and can be related to diet, heredity, and other blood chemistry factors. Plaque accumulations are the sum of the low-density lipoprotein (LDL) cholesterol that circulates within a person's blood. It is believed that a higher LDL reading translates into plaque accumulations in the arteries. High-density lipoprotein (HDL) cholesterol is considered the "good" cholesterol and can assist in transporting LDL out of the bloodstream to the digestive system for elimination by the body.

Atherosclerotic plaques usually form a protective barrier known as a "fibrous cap," which may result from inflammation of the arterial wall due to formation of the deposit. The fibrous cap is the body's attempt to stabilize the deposit and stop it from abruptly breaking loose. In certain situations, the plaque may rupture regardless and greatly restrict or altogether block blood flow, leading to a heart attack or stroke. If the plaque remains stable, it reduces the available space within the arteries, which restricts blood flow (as illustrated in Figure 1). This can result in conditions such as hypertension, kidney failure, macular degeneration, PAD, and erectile dysfunction. There is also evidence to suggest that cognitive impairment may be a sign of reduced blood supply to the brain.

ATHEROSCLEROSIS: HEALTHY ARTERY VERSUS AN ARTERY WITH PLAQUE Healthy Artery Artery With Plaque (Atherosclerosis) Atherosclerosis is a condition in which plaque builds up on the inner lining of arteries. Adventitia A fatty streak develops inside the Intima. The plague is formed from cholesterol, fat, calcium, and other substances in the blood.

Figure 1



#### **Current Standards of Care**

Current atherosclerosis and coronary artery disease (CAD) treatments consist of various therapeutic classes, the most widely prescribed being statins. To date, statins represent the most effective method of reducing serum cholesterol levels, though they are ineffective at reducing plaque. It has long been believed that a patient who exhibits the genetic, dietetic, or disease characteristics prone to plaque accumulations should initially be put on a course of lifestyle and diet changes in order to attempt to control blood cholesterol levels. If such measures prove unsuccessful, then the standard course for treatment is a statin, whereby a patient is directed to remain on the drug throughout his/her lifetime. The very nature of statins is to reduce the amount of cholesterol circulating in the bloodstream, which is largely believed to slow or prevent the formation of atherosclerotic plaques—of which cholesterol is a major component. If the statin proves to be ineffective, other measures must be taken, such as drug-eluting stents, catheterization, and balloon angioplasty—though none of these have proven entirely effective at stabilizing or reducing plaque in the arteries.

Significant drawbacks to statins have largely been related to their tolerability in the prescribed dosage as well as the potential complications that can result from long-term use, which may include muscle weakness and pain (which have shown to be the most common), dizziness, headaches, extreme fatigue and flu-like symptoms, diarrhea/constipation, swelling of the ankles, liver dysfunction with elevation of the liver enzymes, and neurological conditions. These side effects may recede as patients become accustomed to taking the medications.

#### **ASTEROID** and **SATURN** Studies

AtheroNova has developed its compounds under the premise that atherosclerosis is a story of largely unsuccessful drug therapies. This belief is validated by published data from the following the ASTEROID and SATURN studies. The ASTEROID study tested the maximum 40 mg dose of rosuvastatin (Crestor®) administered to patients for two years, ultimately demonstrating only a 6.7% reduction in plaque. The SATURN study compared the two best-selling statins (Lipitor® and Crestor®) to each other. In a large double-blind, multicenter, randomized trial, it was confirmed that while Crestor® significantly lowered LDL levels when compared to Lipitor®, it was not superior in decreasing atherosclerosis as measured by intravascular ultrasonography, which was the primary endpoint. The study did not show a significant difference between the two products in clinical events.

#### New Research on Statins

A 2012 study designed to assess the effect of statins on coronary artery plaque found that the use of statins was associated with a higher prevalence of risk factors and obstructive CAD. The study, which was conducted among 6,673 patients with no known CAD, indicated that those who were taking statins displayed an increased prevalence of coronary plaques containing calcium versus patients who were not taking statins. According to researchers, the effect of statins on coronary plaque warrants further investigation, as these results not only question the effectiveness of statin therapy but might also suggest a negative effect of the therapy (Source: *Atherosclerosis*, Vol. 225(1):148-153, November 2012).

#### Comparison of Available Treatments

The Company believes that its therapeutic compounds' ability to potentially regress atherosclerosis, as well as its multiple mechanisms of action, provides a competitive advantage over both available LDL therapies and candidates currently in development. Figure 2 (page 6) illustrates AtheroNova's analysis comparing mechanisms of action for AHRO-001 and statins as well as additional and potential treatment options for atherosclerosis and CAD: cholesteryl ester transfer protein (CETP) inhibitors, Ezetimibe, and Niaspan®. As illustrated in the Figure, AHRO-001 appears to demonstrate a novel range of mechanisms of action, as it is represented in eight different criteria measured by the Company. In contrast, to AtheroNova's knowledge, competing treatments address at best a maximum of four of these categories.



Figure 2
COMPARISON OF A SELECTION OF MECHANISMS OF ACTION

	AHRO-001	Statins	CETP Inhibitors	Ezetimibe (Zetia®)	Niaspan®
Emulsification of Plaque	٧				
Up-regulate ABCA1/ABCG1 Gene Expression	٧				
Decrease Cholesterol Absorption	٧			٧	
Potential Plaque Reversibility	٧	٧			
Decrease Plasma LDL Cholesterol Levels	٧	٧	٧	٧	٧
Increase Efficiency of HDL	٧		٧		
Stimulate Reverse Cholesterol Transport	٧		٧	٧	
Athero-protective Effect	٧	٧		٧	٧

Source: AtheroNova, Inc.

#### **Market Opportunities**

If successfully approved and marketed, AtheroNova's product candidate could be positioned to address one in three individuals—or greater than 83.6 million adults—who have one or more types of cardiovascular disease in the U.S. (Source: American Heart Association's *Heart Disease and Stroke Statistics—2013 Update*). As an ultimate goal of ridding the entire body of plaque, the Company conservatively believes that if it is able to achieve regression with minimal side effects, its product could become a significant disruptive technology.

In 2011, global lipid regulator spending reached \$38.7 billion, driven by a high prevalence of cardiovascular disease and limited therapeutic options (Source: IMS Health MIDAS, December 2011). However, the lipid regulator market is expected to decline following the patent protection expiration of several leading medicines, such as atorvastatin (Pfizer's Lipitor®) in 2011, which could lead to increased generic competition (Source: Visiongain's *Statins: World Market Outlook 2011-2021*, 2011). In addition, due to the recent regulatory failure of some next-generation therapies, very few new branded products are expected to enter the category in the near term. IMS Health expects the total market for lipid regulators to decline, with levels between \$31 and \$34 billion by 2016, due to lower-cost generics coming to the market. Despite this decline, lipid regulators would still represent the fifth largest therapeutic area behind oncology, diabetes, respiratory illnesses, and autoimmune diseases (Source: IMS Institute for Healthcare Informatics, *The Global Use of Medicines: Outlook Through 2016*, 2012).

#### AtheroNova's Lead Pipeline Candidate: AHRO-001

AtheroNova is developing a product that it believes could become a new standard of care for patients prone to plaque accumulations. The Company is preparing to enter human Phase I trials to explore the ability of bile salts to dissolve (regress) a statistically significant portion of atheromas in test subjects in a way that is both safe and effective. AtheroNova's most advanced compound in development, AHRO-001, is a bile salt administered via pill or tablet. Through a process called delipidization, the compound is designed to dissolve plaque within the walls of the arteries and, subsequently, safely remove it from the body through natural metabolic processes. The Company is initially targeting individuals with soft vulnerable plaque, as the volume of plaque that one accumulates over a lifetime can remain until death, with no truly effective way to reduce it. AHRO-001 works in a manner that some have likened to "nature's detergent."

AtheroNova is developing AHRO-001 to directly compete with statins that largely lower cholesterol and stabilize plaque. In preclinical studies, AHRO-001 did not show adverse effects, including morbidity or mortality. Also, it was well tolerated at high doses—something that has been confirmed by other compounds in this family, ursodeoxycholic acid (also known as UDCA or ursodiol). UDCA, a naturally occurring bile acid and a very close compound to AHRO-001, is used in a drug for gallstone dissolution and is the only U.S. Food and Drug



Administration (FDA)-approved drug to treat primary biliary cirrhosis (PBC), with millions of patients taking it without significant side effects.

The Company has completed studies at Cedars-Sinai and UCLA that were successful at verifying plaque and cholesterol reduction as well as safety. During the studies, use of AHRO-001 led to a 95% reduction in innominate arterial plaque formation versus the control group. In addition, the compound was well tolerated at high doses, and did not show morbidity, adverse effects, or mortality issues.

Should the Company prove successful in safely and effectively regressing soft, vulnerable plaque via delipidization, it would become the first entity with a proven method to do so and could represent a new treatment for the millions of patients currently seeking to manage their risk for atherosclerosis. As well, AtheroNova could provide new hope to patients who have genetic, dietetic, or disease predisposition to the potentially catastrophic "first event"—where a patient's first atherosclerotic event is a fatal heart attack or stroke. AtheroNova is also conducting additional academic research, including a study of the effects of AHRO-003 supplementation on atherosclerotic lesion development at UCLA's Lusis Laboratory.

AtheroNova plans to employ its intellectual property to develop additional applications for its compounds, potentially in the areas of obesity, hypertension, diabetes, peripheral artery disease (PAD), localized transdermal fat dissolution, and the dissolutions of lipomas. AtheroNova recently filed a patent application for a potential treatment for obesity, and in October 2012, the Company announced it was supporting an additional preclinical study at UCLA's David Geffen School of Medicine to assess the expansion of indications that could be treated by AtheroNova's compounds.

#### Progression to Commence Phase I Trials

In Russia, AtheroNova's licensing partner OOO CardioNova, Ltd. has filed an Investigational New Drug (IND) application with the Ministry of Healthcare of the Russian Federation (Minzdrav). The IND is the first step in the process of gaining approval to conduct Phase I human clinical trials in Russia. AtheroNova expected the application to be reviewed and potentially approved in 2013 (Source: AtheroNova press release, November 13, 2012).

The planned Phase I trial, expected to start by the second quarter 2013 and be completed by the third quarter 2013, is designed to be a randomized, placebo-controlled, double-blind study. The primary objective is to evaluate the safety, tolerability, and pharmacokinetics of a dose of orally administered AHRO-001, as well as of multiple ascending doses, in patients with mild to moderate hypercholesterolemia (excess cholesterol in the bloodstream). The secondary goal is to evaluate the safety, tolerability, and pharmacokinetics of any potential drug interactions between AHRO-001 and atorvastatin (the active ingredient in the blockbuster cholesterol drug Lipitor®). Pending positive results, AtheroNova may continue with a multicenter Phase II study to further evaluate the safety and efficacy of AHRO-001 in hypercholesterolemic patients.

In the U.S., AtheroNova completed a pre-IND meeting with the FDA in October 2011, where the FDA provided guidance on a clear development plan, including Phase I and Phase II protocol outlines. The Company is incorporating guidance from the FDA and is conducting U.S. toxicology studies. AtheroNova expects to file an IND with the FDA in the fourth guarter 2013.

Phase I and II human clinical studies in Russia are being sponsored by OOO CardioNova, a subsidiary of the Russian biotech venture capital firm Maxwell Biotech Group (<a href="http://maxwellbio.com">http://maxwellbio.com</a>). Initial funding of \$900,000 from a total allocation of \$3.8 million for the studies was provided by Maxwell to OOO CardioNova to start Phase I. Additionally, Maxwell has enlisted OCT (<a href="http://www.oct-clinicaltrials.com">http://www.oct-clinicaltrials.com</a>), a full-service clinical studies contract research organization (CRO) based in St. Petersburg, Russia, as a contract partner.

Supply of the active ingredient for AHRO-001 has been manufactured and delivered for the manufacture of clinical supplies for both Phase I and Phase II studies. AtheroNova is working with Pennsylvania-based Frontage Laboratories, Inc. (<a href="http://www.frontagelab.com">http://www.frontagelab.com</a>) for the formulation, compounding, and tabletization of AHRO-001. The enteric coated tablet formulation development as well as the excipient compatibility is complete, while



excipient stability R&D is in progress. As well, the delivery of the clinical supply remains on schedule (Source: AtheroNova's Investor Presentation, January 24, 2013).

Managerial Additions to Support Becoming a Clinical-Stage Enterprise

The Company has also added key leadership in recent months as it prepares to enter clinical trials, including Dr. Mark K. Wedel as its senior vice president of clinical affairs and chief medical officer and Joan E. Shaw as senior director of clinical operations. Dr. Wedel has expertise in the development and clinical affairs of lipid-modulating drugs, and Ms. Shaw brings extensive clinical operations experience, including for AstraZeneca's ASTEROID trial for the statin Crestor®. AtheroNova also expanded its Board of Directors with the addition of Mr. Fred Knoll, the principal and portfolio manager of Knoll Capital Management.

#### **Establishing an Intellectual Property Portfolio for Lipid Modulation and Reduction**

AtheroNova is focused on developing a comprehensive intellectual property portfolio to protect its lipid modulation and reduction technologies going forward, including for various compounds and administration techniques for treating atherosclerosis. In November 2012, AtheroNova achieved its first major step toward this goal with the receipt of a Notice of Issuance for its patent application #12/024,908, entitled "Dissolution of Arterial Plaque" (now U.S. Patent No. 8,304,383). This patent protects the Company's lead candidate, AHRO-001, and aims to cover the use of hyodeoxycholic acid for atherosclerotic plaque lesions. AtheroNova's partner, OOO CardioNova, submitted a similar filing on the Company's behalf in the Eurasian markets.

As well, AtheroNova has filed additional patent applications across eleven product families since its inception, including for obesity, lipomas, and adiposities. To this end, in October 2012, the Company announced that it was supporting an additional preclinical study at UCLA's David Geffen School of Medicine to assess the expansion of indications that could be treated by its compounds.

#### **Headquarters and Employees**

AtheroNova is a Delaware corporation formed in 1997, with headquarters in Irvine, California. On May 13, 2010, pursuant to an Agreement and Plan of Merger dated March 26, 2010, a subsidiary, Z&Z Merger Corporation, merged with and into Z&Z Delaware and the surviving subsidiary corporation changed its name to AtheroNova Operations, Inc. The parent company is now AtheroNova Inc.

As of March 2013, AtheroNova had two full-time employees and six contract employees.



#### **Key Points to Consider**

- AtheroNova Inc. is focused on the development of a class of compounds with the potential to reduce the incidence and severity of atherosclerosis—a disease in which the buildup of cholesterol, fats, or other fatty substances in and along the walls of arteries causes thickening, hardening, and blockage. Atherosclerosis is the main cause of cardiovascular disease.
- The Company's most advanced product candidate, AHRO-001, employs bile salts to reduce the incidence and severity of plaque by dissolving existing atherosclerotic plaque deposits and removing them by natural body processes (via a method called delipidization) as well as preventing the formation of new plaque deposits. Bile salts are an FDA-approved natural compound used to dissolve gallstones, a type of treatment that has been well tolerated with no history of safety concerns. The established safe administration of bile salts could provide the Company's therapeutics with a favorable safety profile.
- Regression and stabilization of atherosclerotic plaque, in conjunction with lipid modulation, could become a new standard for treating patients with cardiovascular disease. Current standards of care, such as statins, represent the most effective method to date for preventing atherosclerosis. However, at commonly prescribed dosage levels, statins are ineffective at reducing plaque and carry significant drawbacks related to their safety and tolerability. Some researchers have found that statins may even worsen disease.
- In the U.S., there are roughly 83.6 million individuals presenting with some form of cardiovascular disease, supporting a \$38.7 billion U.S. market for lipid regulators (as of 2011). Cardiovascular disease is the leading cause of death in the U.S.
- AtheroNova is preparing to commence Phase I clinical trials for AHRO-001 in Russia with its partner, OOO CardioNova, Ltd., which are anticipated to start during the second quarter 2013 pending approval of an Investigational New Drug (IND) application by Russia's Ministry of Healthcare. The Company has arranged funding for Phase I and Phase II trials.
- Initial preclinical study data conducted at UCLA showed that the administration of AHRO-001 in test subjects with very high levels of plaque resulted in a 95% reduction in the amount of innominate arterial plaque versus the control group. On the safety side, use of AHRO-001 has shown no adverse effects on morbidity, mortality, or toxicity and has been well tolerated at high doses.
  - Only one marketed statin, rosuvastatin (Crestor®), has been able to show statistically significant measurable regression of atherosclerotic plaque in coronary arteries. According to AtheroNova, these results were achieved on patients taking the maximum approved dosage for two years.
- AtheroNova is conducting additional academic research, including a study of the effects of AHRO-003 supplementation on atherosclerotic lesion development at UCLA's Lusis Laboratory.
- In late 2012, the Company received a Notice of Issuance for its primary patent application for the dissolution of arterial plaque. AtheroNova plans to employ its intellectual property to expand the applications for its compounds, potentially in the areas of obesity, hypertension, diabetes, peripheral artery disease (PAD), localized transdermal fat dissolution, and the dissolution of lipomas.
- AtheroNova has recently expanded its leadership team as it prepares to enter the clinical stage. The Company selected Mark K. Wedel, M.D., J.D. as its senior vice president of clinical affairs and chief medical officer due to his expertise in the development of lipid-modulating drugs. As well, the Company appointed Joan E. Shaw, MT (ASCP) as senior director of clinical operations, who brings extensive clinical operations experience, including with AstraZeneca's ASTEROID trial for the statin Crestor®.
- As of December 31, 2012, the Company's cash position was over \$2.7 million.



#### **Risks**

This Quarterly Update has been prepared by AtheroNova Inc. ("AtheroNova" or "the Company") with the assistance of Crystal Research Associates, LLC ("CRA") based upon information provided by the Company. CRA has not independently verified such information. Some of the information in this Update relates to future events or future business and financial performance. Such statements constitute forward-looking information within the meaning of the Private Securities Litigation Act of 1995. Such statements can only be predictions and the actual events or results may differ from those discussed due to the risks described in AtheroNova's statements on Forms 10-K, 10-Q, and 8-K, as well as other forms filed from time to time.

The content of this report with respect to AtheroNova has been compiled primarily from information available to the public released by the Company through news releases, Annual Reports, and U.S. Securities and Exchange Commission (SEC) filings. AtheroNova is solely responsible for the accuracy of this information. Information as to other companies has been prepared from publicly available information and has not been independently verified by AtheroNova or CRA. Certain summaries of activities and outcomes have been condensed to aid the reader in gaining a general understanding. CRA assumes no responsibility to update the information contained in this report. In addition, CRA's compensation by the Company for its first year of service in creating the base Executive Informational Overview® and for updates is forty-two thousand U.S. dollars and fifty thousand restricted shares. For more complete information about AtheroNova as well as the risks involved in an investment in the Company, please refer to Crystal Research Associates' base report, the Executive Informational Overview® (EIO) dated June 6, 2012, and located on Crystal Research Associates' website at <a href="https://www.crystalra.com">www.crystalra.com</a>.

Investors should also carefully consider the risks and information about AtheroNova's business described in the Company's Form 10-K filed with the SEC on April 1, 2013: <a href="http://www.sec.gov/Archives/edgar/data/1377053/000143774913003788/ahro">http://www.sec.gov/Archives/edgar/data/1377053/000143774913003788/ahro</a> 10k-123112.htm.

Investors should not interpret the order in which considerations are presented in this or other filings as an indication of their relative importance. The risks and uncertainties overviewed in AtheroNova's Form 10-K are not the only risks that the Company faces. Additional risks and uncertainties not presently known to AtheroNova or that it currently believes to be immaterial may also adversely affect the Company's business. If any such risks and uncertainties develop into an actual event, AtheroNova's business, financial condition, and results of operations could be materially and adversely affected, and the trading price of the Company's shares could decline.

This report is published solely for information purposes and is not to be construed as an offer to sell or the solicitation of an offer to buy any security in any state. Past performance does not guarantee future performance. Additional information about AtheroNova and its public filings, as well as copies of this report, can be obtained in either a paper or electronic format by calling (949) 476-1100.



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# QUARTERLY UPDATE: April 5, 2013

About Our Firm: Crystal Research Associates, LLC is an independent research firm that has provided institutional-quality research on small- and mid-cap companies for the past decade. Our firm's unique and novel product, the Executive Informational Overview® (EIO), is free of investment ratings, target prices, and forward-looking financial models. The EIO presents a crystal clear, detailed report on a company (public or private) in a manner that is easily understood by the Wall Street financial community. The EIO details a company's product/technology/service offerings, market size(s), key intellectual property, leadership, growth strategy, competition, risks, financial statements, key events, and other such fundamental information.

Crystal Research Associates is led by veteran Wall Street sell-side analyst Jeffrey Kraws, who is well known by the international financial media for his years of work on Wall Street and for providing consistent award-winning analyses and developing long-term relationships on both the buy-side and sell-side. He has been consistently ranked on Wall Street among the Top Ten Analysts for pharmaceutical stock performance in the world for almost two decades as well as ranked as the Number One Stock Picker in the world for pharmaceuticals by Starmine and for estimates from Zacks. Additionally, Mr. Kraws has been 5-Star Ranked for top biotechnology stock performance by Starmine.

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