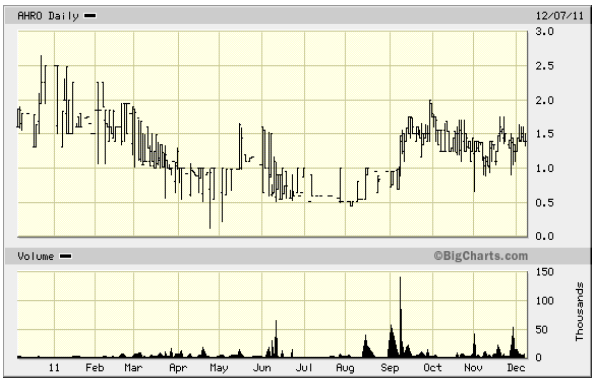
Prime Equity Research

Initiation of Coverage: AtheroNova Inc. (OTCBB: AHRO)

Rating: **BUY**
Price Target: **$2.27**
Date: December 7, 2011
Analyst: Kipley J. Lytel, CFA

Current Market Data	
Recent Share Price	$1.50
52 Week Low - High	$0.12-$2.65
Average Daily Volume	10,552
Shares Outstanding	27.8 mil
Market Capitalization	$41.7 million
Cash	$686k



Analyst summary

We Initiate Coverage of AtheroNova Inc. ("AHRO," "AtheroNova" or "the Company") with a ***Buy*** rating and assign a **$2.27 per share price target**. The Company has developed intellectual property for a class of compounds that has the potential to significantly reduce the incidence and severity of atherosclerosis; a disease in which the building up of cholesterol, fats or other fatty substances occurs along the walls of the arteries causing thickness, blockage and hardening.

Key Investment Catalyst Highlights:

- Potential blockbuster therapy drug (AHRO-001) for coronary artery disease (CAD) could serve one of the most lucrative healthcare segments, specifically a commercial compound that can potentially **regress** the cause of heart attacks and strokes.
- Landmark UCLA study demonstrated AtheroNova's AHRO-001 drug treatment resulted in a remarkable 95% reduction in arterial plaque formation at the innominate artery with no morbidity or mortality in pre-clinical studies. Current standards of care for the $20+ billion peer drug statins (Lipitor, Crestor) were determined ineffective at reducing plaque.
- Regression of plaque will become the new 'gold standard' and AtheroNova is positioned to potentially lead the way with many applications directed at treating atherosclerosis with emulsifiers, such as bile salts, terpenes and saponins.
- Completion of pre-IND (Investigational New Drug) meeting with FDA for AHRO-001.
- *Astounding Market Potential*: All told, atherosclerosis and related pharmaceutical costs run more than $41 billion annually - 335 million prescriptions' worth - in the U.S. alone. AHRO-001 has the potential to reduce the greatest cause of death: heart disease.
- Market Barrier to Entry: AtheroNova currently has 22 patent pending applications and is anticipating a *freedom to operate opinion* from McDermott Will & Emery LLP, one of the leading Intellectual Property firms in the world.
- Diverse Product Pipeline beyond Lead product, AHRO-001: other patents pending treatments include hypertension, obesity, diabetes, and peripheral artery disease.
- AtheroNova entered into an equity agreement with Maxwell Biotech Group for up to $4.1 million investment in exchange for funding clinical Phase I and Phase II studies.
- Seasoned management with a shrewd low cost structure: The Company maintains low overhead with a consultant approach.

Company Background

AtheroNova Inc. is a Delaware corporation (1997), with principal offices in Irvine, California. On May 13, 2010, pursuant to an Agreement and Plan of Merger dated March 26, 2010, (i) subsidiary, Z&Z Merger Corporation, merged with and into Z&Z Delaware (the "Merger") and the surviving subsidiary corporation changed its name to AtheroNova Operations, Inc.

Company Historical Timeline

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 plans to develop multiple applications for its compounds to be used in pharmaceutical grade products for the treatment of atherosclerosis. Atherosclerosis -- or plaque buildup in the arteries -- is the leading cause of heart attacks, stroke, and peripheral vascular disease.

The current Company has developed intellectual property ("IP"), covered by pending patent applications for a class of naturally occurring compounds, which use certain pharmacological compounds uniquely for the treatment of atherosclerosis; the primary cause of various cardiovascular diseases. Atherosclerosis occurs when cholesterol or fats are deposited on arterial walls and form as plaques. Such deposits are theorized as occurring due to weaknesses or imperfections in the arterial walls. Another theory is that these plaques develop at the site of arterial inflammations.

Current treatment is led by statin drugs in the varying acceptable dose levels, which can be introduced with an expectation that once a patient was started on a statin drug, they would be a patient for life. Such prescription characteristics have made statin drugs the most successful drug family in the history of medicine. AHRO-001 is slated to compete with statins that largely lower cholesterol and stabilize plaque, whereas pre-clinical results for AHRO-001 have demonstrated sharply more treatment results than just cholesterol reduction, such as lowering risk of heart attack and stroke.

AtheroNova is conducting studies and trials to demonstrate the efficacy of its IP as demonstrated in pilot studies conducted in 2009. The IP uses naturally occurring bile salts normally found in the digestive tract to dissolve, or delipidize, the portions of the soft, vulnerable plaque that are accessible through the fibrous cap. This delipization process breaks down plaque deposits into molecules small enough to pass safely through the fibrous cap without causing harm to the fibrous cap itself.

The research currently being conducted is testing the ability of bile salts to dissolve, or regress, a statistically significant portion of the atheromas induced in test subjects in a safe and effective manner.

The AHRO delipidization process came about by co-inventors Dr. Giorgio Zadini and Dr. Filiberto Zadini, whose research, covered by AHRO patent applications, dissolves plaques in artery walls so they are removed through normal body processes. AHRO-001 travels through the atherosclerotic fibrous cap and, through delipidization, causes rapid reduction in the size of the deposits of soft vulnerable plaque in an artery's walls. Once the artery walls are delipidized, they undergo a marked reduction in inflammation and ultimately undergo a significant restoration of their integrity, reversing the effects of existing atherosclerosis by widening the area in an artery through which the blood flows and avoids the rupturing and dislodging of chunks of the accumulated plaque. The compounds can also be used in a preventative sense to stop significant plaque buildup in arteries from occurring.

It is believed that regression and stabilization of plaque will become the new gold standard in the treatment and prevention of cardiovascular disease. If the Company"s premise is confirmed, this would introduce the first clinically proven method to regress soft, vulnerable plaque.

Recently, AtheroNova also filed a patent application for potentially revolutionary obesity treatment. There are multiple other applications directed to treating atherosclerosis with various methods of administration and compounds. Additional patents are pending, including applications for obesity, lipomas and adiposities

Management

Thomas W. Gardner has been the Chief Executive Officer, the President and a director of AtheroNova since the May 2010 reverse merger. He held the same positions with Z&Z Medical Holdings, Inc., a Nevada corporation and the predecessor in interest to AtheroNova Operations ("Z&Z Nevada") from December 2006 until its merger into AtheroNova Operations in March 2010. Since September 2008, he also has been the President of PhyGen LLC, which designs, manufactures and sells instruments and implants for spine surgery. He has extensive experience with successful start-up ventures, having helped found six healthcare companies, of which three were publicly traded.

Chief Financial Officer Mark Selawski joined AtheroNova in January 2010. He became the Secretary of AtheroNova Operations in March 2010. From 2004 to 2009 he served as Chief Financial Officer of a $250 million privately held petrochemical distribution company. From 1988 to 2004, he held several positions at Medstone International, during the last 9 years being the Vice President-Finance, Chief Financial Officer and Corporate Secretary. Medstone was a NASDAQ-listed capital medical device manufacturer of lithotripters, urology tables and x-ray equipment, as well as, fee-for-service equipment programs.

SVP of Drug Development Dr. Balbir Brar has over 25 years of experience in drug and device development and worldwide registration of eight major drugs, including Botox. His experience includes working with major pharmaceutical companies, including: Lederle/Wyeth (NYSE: WYE), where he developed Azmacort for asthma and topical Aristocort, both multimillion dollar products currently on the market; and SmithKline Beckman (NSYE: GSK) as a Senior Director of Drug Safety, where he participated in the development of Tarzotene for psoriasis and acne. At Allergan Inc., (NYSE: AGN) Dr. Brar served as Vice President Drug Safety (R&D) and was responsible for the regulatory submission of 50 INDs/510Ks and worldwide approval of six New Drug Applications, which became very successful drugs currently on the market, including Botox (Medical and Cosmetic), Alphagan, Lumigan, Restasis, Ofloxacin, Azelex, Avage (Retinoid), Latisse and Viscoelastic intraocular.

Scientific Advisory Board

The Scientific Advisory Board is largely internationally recognized as atherosclerosis research experts and/or leaders in clinical trials, including cholesterol and lipids.

Giorgio Zadini, MD
Company Founder/Emergency Medicine, California Hospital Medical Center

Ephraim Sehayek, MD
Assistant Staff - Genomic Medicine Institute, Lerner Research Institute, Cleveland Clinic

Stephen Nicholls, PhD
Medical Director - Intravascular Ultrasound & Angiography Core Laboratories, Cleveland Clinic

Burt Liebross, MD
Nephrologist - Internal Medicine and Nephrology

Ben McFarland, PhD
Associate Professor - Department of Chemistry & Biochemistry, Seattle Pacific University

John Nachazel, MD
Anatomic & Clinical Pathologist, California Hospital Medical Center

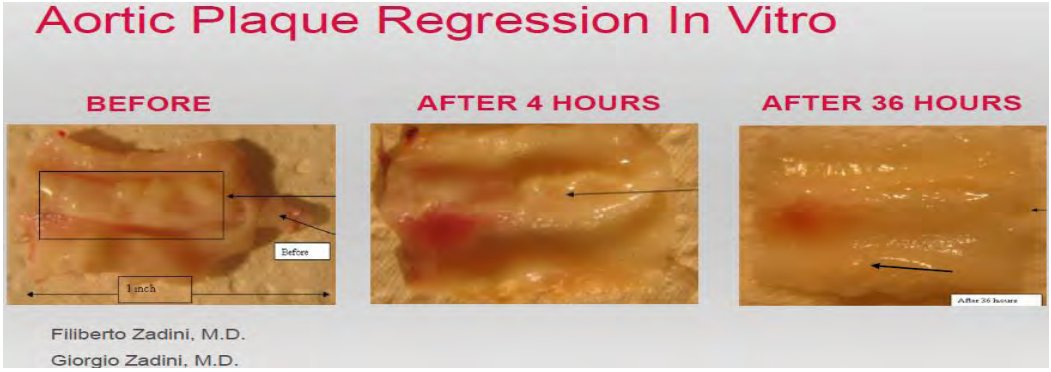
Jian-Hua Qiao, MD
Anatomic & Clinical Pathologist, California Hospital Medical Center

Investment Merits

Compelling Initial Academic Research Results:
The AHRO-001 Pre-Clinical Mechanism of Action Study by Jake Lusis, PhD with the UCLA David Geffen School of Medicine determined that the study group receiving AHRO-001 had 95% less innominate arterial plaque compared to the control group. The approach used a high fat diet in LDLR knockout mice and the AtheroNova compounds showed no morbidity or mortality in pre-clinical studies. AtheroNova is positioning AHRO-001 within the atherosclerosis market as a breakthrough regression retreatment of atherosclerotic plaque; a clear market breakout approach from existing stabilization to new regression therapy. The Company recognizes the difference between the ability of AHRO-001 to potentially regress atherosclerosis versus other therapies that merely stabilize the disease. It is this potential for plaque regression, which distinguishes AHRO-001 from other HDL drugs and candidates in development.

Diana Shih, Ph.D., Associate Professor of Medicine, Division of Cardiology at the David Geffen School of Medicine at UCLA, presented the findings at the 2011 American Heart Association (AHA) Scientific Sessions in Orlando, Florida. The study results also revealed significant reduction in plasma cholesterol and dietary cholesterol absorption in the test subjects that received HDCA. HDCA supplementation also improved HDL function as measured by cholesterol efflux assay. These factors indicate multiple methods of action for an anti-atherogenic effect, suggesting a clear potential for new anti-atherosclerotic therapy.

The second experiment of aortic plaque regression in vitro also demonstrated remarkable results.



Although additional R&D is required, early pre-clinical results suggest that AtheroNova has the potential to produce atherosclerosis drugs that will regress or eliminate atherosclerotic fatty plaques. The company is currently conducting two additional animal studies to validate the findings of its initial study and prepare for Phase I human trials.

AtheroNova completed its pre-IND meeting goal of obtaining clarification on the nonclinical, clinical, and chemical, manufacturing and control (CMC) requirements that need to be met in order to submit an acceptable IND. With that in place, the Company is in position to apply the guidance offered by the FDA for the proper testing of AHRO-001 and begin Phase I testing.

Current Standard of Care is Ineffective for Atherosclerosis
Current standard of care for statins is ineffective at reducing plaque. The ASTEROID study tested the maximum 40mg dosage of rouvastatin (Crestor) administered to subjects for two years and only demonstrated a 6.7% reduction in plaque. Existing medications may well partially lower levels of LDL ("bad") cholesterol, but they still fail to prevent the heart risks associated with the low levels of HDL ("good") cholesterol. In fact, for a man or a woman over 69 years old with high cholesterol, there is no actual clinical proof that taking statins reduces the risk of heart attack or death.

The SATURN study conducted by the Cleveland Clinic, pitted two of the best-selling statin medications (Lipitor and Crestor) against one another in a large double-blind, multi-centered, randomized trial. The trial confirmed that while Crestor did significantly lower LDL levels (a cholesterol indicator) when compared to Lipitor, it was not superior in decreasing atherosclerosis as measured by intravascular ultrasonography, the primary end point. The study also illustrated no significant difference between the two drugs in clinical events (MI, stroke, cardiovascular related death).

However, the statin drug industry continues to rake in over $20 billion annually in revenue and is driven by big Pharma behemoths the likes of Pfizer (Lipitor) and AstraZeneca (Crestor). Statins were developed, approved, and prescribed under the assumption that reducing the amount of cholesterol circulating in the bloodstream would slow or prevent the formation of atherosclerotic plaques of which cholesterol is a major component.

Meanwhile, statins have side effects for some such as muscle aches, joint pains, abdominal discomfort, memory and cognitive impairment. Nerve injuries have now been documented in people taking statins over long periods. Liver injury, liver toxicity, and even death are also concerns with statins. Some research has even indicated that for every life that is saved, statins cause an equal number of adverse deaths due to accidents, infection, suicide and cancer.

Finally, drug eluting stents, catheterization and balloon angioplasty do not reduce plaque volume.

Early AHRO-001 Studies Show Excellent Safety and Tolerability Data
AtheroNova‟s AHRO-001 compound has shown no morbidity or mortality in pre-clinical studies. Further, there were no visible toxicological effects in pre-clinical studies and the compound was well tolerated at high doses. In fact, other compounds in the same family as AHRO-001‟s, such as ursodeoxycholic acid (UDCA), have been shown to be well tolerated in humans. UDCA is one compound developed and used for the treatment of gallstones and primary biliary cirrhosis. These are all bile salts with specific chain molecules in various positions creating the differences.

The family of compounds used in AtheroNova‟s technology have approvals for use in humans by regulatory agencies in many developed countries throughout the world, including Germany, England, France and Italy. Further, the compounds are naturally present in the liver and cause no damage to blood vessels at significantly higher concentrations than those contemplated for use in treating atherosclerosis.

Market Competition Barriers: *Distinct & Differential Product Results*

AtheroNova‟s compound is one of the first novel applications for the treatment, regression and prevention of atherosclerosis. AtheroNova has acquired the intellectual property for a class of naturally occurring compounds that have the potential to significantly reduce the incidence and severity of atherosclerosis by preventing the formation of atherosclerotic plaques and dissolving existing plaques. AtheroNova currently has patents pending applications in nine (9) families and is anticipating a freedom to operate opinion from McDermott Will & Emery LLP, one of the leading Intellectual Property firms in the world.

Additionally, the comparative mechanisms of action for AHRO-001 demonstrate unique breadth in treatment results. Indeed, as highlighted in the chart below, the AHRO-001 compound delivers results under eight criteria, while four other competing treatments only deliver positive results in the range of 2-4 categories.

Comparative Mechanisms of Actions

AtheroNova is Positioned to Lead the Way

	AHRO-001	Statins	CETP Inhibitors	Ezetimibe (Zetia)	Niaspan
Emulsification of plaque	✓	-	-	-	-
Upregulate ABCA1/ABCG1 gene expression	✓	-	-	-	-
Decrease cholesterol absorption	✓	-	-	✓	-
Potential plaque reversibility	✓	✓*	-	-	-
Decrease plasma LDL cholesterol levels	✓	✓	✓	✓	✓
Increases efficiency of HDL	✓	-	✓	-	-
Stimulate reverse cholesterol transport	✓	-	✓	✓	-
Atheroprotective effect	✓	✓	-	✓	✓

Market Potential[1]

The American Stroke Association (ASA) conference found a dramatic statistically significant increase in ischemic stroke hospitalizations among males and females in all age groups from 5 to 44 years old.

According to the healthcare information firm IMS Health, it is estimated that 355 million lipid-regulating drug prescriptions were dispensed in 2010. Currently, the leading drug for cholesterol

[1] Refer to Industry & Market Potential in this Report for extensive analysis.

reduction is statins, which is considered largely ineffective for the treatment of heart failure and strokes. Statins are cholesterol-lowering drugs, making them a leading prescription drug for the prevention of coronary heart disease. Consequently, statins constitute one of the most important sectors of the pharmaceutical industry, with total revenues exceeding $20 billion in 2010.

Potential market sectors served by AHRO-001 (if FDA approved) include: Cardiovascular Disease, Stroke, Peripheral Artery Disease, Dementia and Alzheimer's and Erectile Dysfunction, all of which have been linked to atherosclerosis.

- ✓ Cardiovascular Disease
  81 million patients
- ✓ Stroke
  7 million patients
- ✓ Peripheral Artery Disease
  8 million patients (33% are diabetics)
- ✓ Dementia and Alzheimer's
  6 million patients
- ✓ Erectile Dysfunction
  18 million patients

The money in heart disease diagnostics and therapies is staggering: Serum Screening ($3 Billion), Imaging ($12 Billion), Diagnostic Catheterizations ($12 Billion), Statin Drug Therapies ($16 Billion) and Drug Eluting Stents ($6 Billion).

AHRO-001 & FDA: Fast Track Expected

Although it can take an average of 15 years from the moment a company approaches the Food and Drug Administration (FDA) with a new drug proposal to its final approval for manufacturing[2], AtheroNova expects to „Fast Track" this process and be completed by late 2015 (should all FDA Phases receive approval).

Steps in the development and approval of a drug or biologic (e.g., a vaccine or drug) involve actions by both the sponsor (AtheroNova) and FDA. The first step of submitting to FDA an Investigational New Drug (IND) application for permission to conduct clinical studies in humans will be completed in Q2 2012. Second, AtheroNova must complete Phase I, II, and III clinical trials to establish that a product is safe and effective for a specific purpose and population. Third, the Company must submit to FDA a New Drug Application (NDA) for permission to market the product. Fourth, FDA reviews the NDA for evidence of safety and effectiveness, a process that sometimes includes requests to the sponsor for additional information, the sponsor"s response, and further FDA review. Finally, FDA decides whether to approve the application.

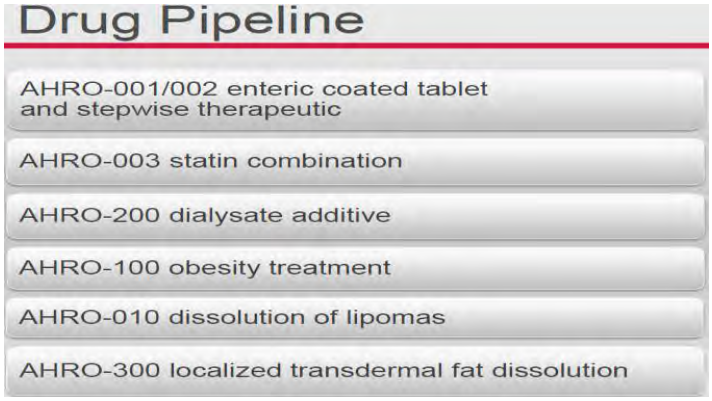
Fortunately, AtheroNova believes that the FDA will review any applications that are submitted for eligibility under the "Fast Track" designation due to the critical nature of atherosclerosis and its status as one of the leading causes of morbidity and mortality in the United States. Designation as a "Fast Track" product means that the FDA has determined that the drug is intended for the treatment of a serious or life-threatening condition and demonstrates the potential to address unmet medical needs, and that the FDA will facilitate and expedite the development

[2] Pharmaceutical Research and Manufacturers of America (PhRMA), at [http://www.phrma.org]

and review of the application for the approval of the product. The FDA generally will review a new drug application ("NDA") for a drug granted Fast Track designation within six months.

The process could be eased by the fact that the family of compounds used in AtheroNova‟s technology has a history of approval for use in humans by regulatory government agencies in a large number of developed countries throughout the world, including Germany, England, France, and Italy. Other positive considerations includes the existing human safety record for this class of compounds, at higher concentrations than AtheroNova used in their initial research, is well established; used in humans throughout the world, including in the USA, for their medical indications.

Diverse Pipeline *& Other Uses of the Delipidization Process*
Besides applications in atherosclerosis, delipidization has significant applications in other medical fields. The delipidization of subcutaneous fat has been scientifically demonstrated by researchers at a leading U.S. academic institution.



- Localized reduction of subcutaneous fat deposits through transdermal application
- Obesity
- Hypertension
- Diabetes
- Peripheral Artery Disease (PAD)

Strategic Partner: Funding Clinical Phase I/II Trials & Licensing
Maxwell Biotech Venture Fund, Russia‟s premier biotech venture capital firm will become equity investors (via subsidiary OOO CardioNova) in AtheroNova and commit $4.1 million to fund Phase I and Phase II human clinical studies in Russia. Maxwell‟s subsidiary OOC CardioNova also has an exclusive license to develop and commercialize AHRO-001 in the territory encompassing the Russian Federation, Belorussia, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Moldova, Azerbaijan and Armenia. The availability of a world-class network of clinical trial sites in Russia provides AtheroNova the opportunity to rapidly and cost-effectively generate clinical proof of concept for the drug and contribute to its development for the global market.

Investment Risks

Biotechnology is High Cost and High Risk Venture

Evidence shows that the cost of capital for venture backed early stage companies in life sciences is high, with estimates suggesting 20% or higher.[3] Biotechnology has several challenging features for venture investors, including very long time to market (typically 10 or more years), very high levels of risk with few products making it to market (some estimates range at 9% for Phase I), and large amounts of capital continually needed to move most new treatment approaches forward.

According to a recent Biotechnology Industry Organization presentation (BioMed Tracker)[4], the Likelihood of Acceptance (LOA) by the FDA for Phase I application is only 9% using applied compounded probabilities. Further, the LOA for specifically cardiovascular disease and treatments for the presented study was 7% for Phase I to completion/approval by FDA.

Phase Transition	Phase Success	Phase LOA
P1 to P2	63%	9%
P2 to P3	33%	15%
P3 to NDA/BLA	55%	44%
NDA/BLA to Approval	80%	80%

.63 x .33 x .55 x .80 = .09

However, AtheroNova has research agreements signed in 2010 with two research facilities and is carrying out the second round of pre-clinical studies. The first agreement is with a major Southern California public university and their atherosclerosis lab. The contract calls for payment of all research and clinical costs relating to the study of the pharmacodynamics of certain bile salts and terpenes on the atherosclerotic plaque in a non-human model. The total cost of the project of $156, 667 has been paid in full with the completion of the laboratory phase of the project.

The second agreement is with the cardiology research department of a major hospital institution in Southern California. The agreement calls for payment of all research and clinical costs relating to the study of dosage and efficacy of bile salts on the atherosclerotic plaque in a non-human model. The total cost of the project is $312,583, to be paid in installments over the length of the study and associated manuscript based on the study data $175,000 has been paid to date on the project.

Liquidity Constraints & Additional Funding Requirements

While the Maxwell partnership may cover the FDA clinical Phase I & II study arms, AtheroNova currently has limited financial sources of liquidity and has aggressive new treatment product compound development goals. The divergence requires ample and visible funding initiatives. The Company has accumulated losses (deficit) since inception during the development stage of $15,842,797, of which $13,626,084 was non-cash expenditures related to stock-based compensation and derivative liability accounting. The Maxwell funding offers an intermediate

[3] The Cost of Capital for Early-Stage Biotechnology Ventures, lain Cockburn (Boston University) and Josh Lerner (Harvard University).

[4] 13th ANNUAL BIO CEO INVESTOR CONFERENCE, February 15th, 2011, Trial and Error: Breaking Down Clinical Trial Success Rates

pathway for R&D, yet substantially greater financial resources will be required to complete the potential of FDA III Phase and to meet other operational costs.

Highly Competitive Market

AtheroNova will continually face competition from pharmaceutical, biopharmaceutical, medical device and biotechnology companies developing heart failure and cholesterol reducing treatments both in the United States and abroad, as well as numerous academic and research institutions, governmental agencies and private organizations engaged in drug funding or discovery activities both in the United States and abroad. Most of the larger pharmaceutical companies have substantially greater research and development, manufacturing, marketing, financial, technological personnel and managerial resources than we do. Acquisitions of competing companies by large pharmaceutical or health care companies could further enhance such competitors‟ financial, marketing and other resources. The Company will also face competition from entities and healthcare providers using more traditional methods, such as surgery and medical device regimens, to treat heart failure. The Company believes there are a substantial number of heart failure products under development by numerous pharmaceutical, biopharmaceutical, medical device and biotechnology companies, and it is likely that other competitors will emerge.

Audit Firm '*Substantial Doubt*' Opinion

AtheroNova has an accumulated deficit of $15,842,797 at December 31, 2010, has incurred recurring losses from operations since inception, and utilized cash flow from operating activities of $1,551,990 during the year ended December 31, 2010. Inasmuch as the Company is reportedly engaged in fundraising efforts, it is paramount that AtheroNova raise significant additional funds. Accordingly, as is common with many early stage biotechnology companies, the independent registered public accounting firm issued its report dated March 30, 2011 in connection with the audit of AtheroNova‟s financial statements as of December 31, 2010, which included an explanatory paragraph describing the existence of conditions that raise substantial doubt about the AtheroNova‟s ability to continue as a going concern. If the Company is not able to continue as a going concern, it is likely that holders of the Company‟s common stock will lose all of their investment. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Regulation & FDA

The research and development, preclinical studies and clinical trials, and ultimately, the culturing, manufacturing, marketing and labeling of AtheroNova‟s compounds are subject to extensive regulation by the FDA and other regulatory authorities in the United States and other countries. Atherosclerosis drug compounds are subject to regulation under the Federal Food, Drug, and Cosmetic Act, or the FD&C Act, the Public Health Service Act, or the PHS Act and their respective regulations as well as other federal, state, and local statutes and regulations.

Potential Further Dilution

Growth is often funded with equity, debt or convertible debentures. However, with biotech companies, the financial resources and assets are typically not in place to with debt funding initiative and we would expect equity to be the currency of choice for funding. The cost of equity for biotech enterprises are high since the Company‟s stock valuation often remain substantially lower than future prices, assuming the business model is successful over time.

Penny Stock Status and Limited Stock Liquidity

AHRO"s shares trade at under $2 and thus are subject to Penny Stock rules, which may limit its market liquidity. In addition, trading in Company"s stock is quite thin, with 50-day average volume at just 0.003% of the total number of outstanding shares[5].

Valuation & Financial Projections

Valuing development stage biotechnology (biotech) companies is challenging. Biotech companies often offer promising treatments that are revolutionary and radically innovative. But, putting a value on something that is years away (or may even never be realized) remains a complicated and inexact endeavour. The standard valuation ratios, like P/E, P/B, P/S etc. can"t be applied because the key parameters typically are negative, as companies have no revenues and consequently report losses; which accumulate into equity deficits like for AtheroNova. Companies also differ in the number of their projects, stages of each project (pre-clinical, clinical trials, final approval etc.), indication (cardiovascular, oncological, neurological), technology employed, resources and many other factors, which make each company unique.

Given the pre-clinical stage of AHRO-001, we did not impute the immense value potential for the successes of the best selling drugs in the space, which also happen to be the best selling drugs overall for pharmaceuticals. The current CAD/plaque treatment market using statins is presently dominated by Pfizer (PFE) and AstraZeneca (AZN) and their cholesterol-reducing pills that inhibit the enzyme HMG-CoA reductase, which indices the production of cholesterol in the liver. In 2010, the world's best-selling drug was Pfizer's Lipitor, for the treatment of cholesterol with the ultimate aim of staving off atherosclerosis, delivered an approximate whopping $10.7 billion in revenue for 2010. And last year, the drug that saw the largest increase in sales was AstraZeneca's Crestor, also for the treatment of artery plaque, with revenue that grew by 26% in 2010 to $5.7 billion. And, both of these blockbuster drugs are deemed ineffective at reducing plaque and achieving regression like the hopes for AHRO-001.

Typically in the biotech industry, as a company successfully advances through the drug development milestone pathway, valuations increase with each successfully completed successful step. With a potentially huge market and indications of safety and efficacy, the potential for AtheroNova to achieve successively higher valuations with each step in the development pathway is considerable. Over the past few years, several key events have and can continue to increase the value potential of AtheroNova.

Initially, AtheroNova spent years developing the AHRO-001 drug for testing. Then, the Company completed the Pre-IND Meeting with FDA and also has released remarkably positive results in the pre-clinical UCLA study. Third, the results for the second 2010 pre-clinical study should be released in early 2012, followed by potential publications of both studies. Finally, the funding by Maxwell for both Phase I and Phase II has been secured, with Phase I anticipated to commence in the second quarter of 2012.

To assess the fair value of AtheroNova, we used a bandwidth of three differing approaches: comparative peer biotech stage value, potential intrinsic value (net present value) and takeout terminal value (of cardiovascular biotech companies), along with some deep „haircut" adjustments

[5] Source: http://www.bigcharts.com.

to account for the pre-clinical nature of the business. With regard to terminal value, we view this to be the likely scenario where a strategic acquisition by a large Pharma would take place prior to FDA Phase III completion. For example, Pfizer˝s loss of patent protection of Lipitor will occur in many developed countries in 2011 and AstraZeneca will only have patent protection until 2016 on Crestor.

The integrated valuation projection based on several methods and the applied estimated 9% success FDA approval rate for FDA Phase I trials is **$2.27** per share for AtheraNova. Other valuation risk discounting mechanisms was the purposeful omission of the other potential drugs in the Company˝s pipeline.

COMPARABLE PEER COMPANY VALUATION MATRIX

Ticker	Company Name	Mkt Cap	SALES(ttm), $mn	CT stage	Disease	Overall Success factor	"Unadjusted" value
AMRN	Amarin Corporation	950.0	28.00	Phase III	Cardio, Diverse	46%	$ 2,065.2
ACTC.OB	Advanced Cell Technology Inc.	178.0	0.44	Phase I/II	Cardio, Diverse	15%	$ 1,186.7
ASTM	Aastrom Biosciences, Inc.	83.5	0.26	Phase 2, Phase 2b, Phase I/II	Cardio	28%	$ 298.2
BCLI.OB	Brainstorm Cell Therapeutics Inc.	33.2	0.00	Phase I/II	Neurological	32%	$ 103.8
CUR	Neuralstem, Inc.	52.8	0.73	Phase I	Neurological	20%	$ 261.9
NVIV.OB	InVivo Therapeutics Holdings Corp.	124.5	0.00	Investigational Device Exemption	Trauma	80%	$ 155.6
	Median	**83.5**					**$ 280.1**
	Adjusted haircut for Phase 2 Success Rate						**$ 78.4**

Potential Diluted shares	40.5
Value per share	**$ 1.94**

Cardiovascular Terminal Valuation - Acquisitions	$Mn Takeout Value		
Reliant Pharmaceuticals (the developer of Lovaza) bought by GlaxoSmithKline in 2009 for US$1.65billion	$ 1,073	Est 65% was Lovaza	
Esperion snapped up by Pfizer in 2004 for $1.3 billion in Phase II trials	$ 1,300		
FoxHollow Technologies Inc. was purchased by Ev3 Inc. $780M	$ 780		
Heart Technology Inc. of Redmond, Washington, was acquired for $450M	$ 450		
Hoechst Marion Rousell Sells Altrace Drug to King Pharmaceuticals for Est $200M+ ($362M 3 drug purchase	$ 200	Est 55% was Altrace	
Average Takeout	$ 683		
Probability of early-stage Success Takeout	*15%*		
Discounted Risk-Adjusted Value	$ 102	**$ 2.53**	**Per Share**

Assumptions NPV - Discounted Cash Flow	
Current share price	**$ 1.35**
Annual Revenue Per Patient	**$1,825**
Net margin	**14%**
Discount rate	**20%**
Success rate at Phase 2 in CV sector	**28%**
Success rate at Phase 3 in CV sector	**46%**
Success rate at Phase 2/3	**37%**
Overall Biotech Phase I Success Rate	**9%**
Peak market share	**22.5%**

Cholesterol medications	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
U.S. prescriptions worldwide, Millions (Mn)	255	260	265	270	275	280	285	290	295	300
Annual growth, mn	5	5	5	5	5	5	5	5	5	5
Market share		**0.0%**	0.0%	0.0%	0.0%	7.5%	15.0%	17.5%	20.0%	22.5%
Cumulative revenue, $mn		0.0	0.0	0.0	0.0	$ 38,325.0	$ 78,018.8	$ 92,618.8	$107,675.0	$123,187.5
Incremental (annual) revenue, $mn			0.0	0.0	0.0	$ 38,325.0	$ 39,693.8	$ 14,600.0	$ 15,056.3	$ 15,512.5
Net income	-10	-10	0	0	0	$ 5,365.50	$ 5,557.13	$ 2,044.00	$ 2,107.88	$ 2,171.75
Probability-weighted net income	-10	-10	0	0	0	$ 1,985.24	$ 2,056.14	$ 756.28	$ 779.91	$ 803.55
Discount factor	*1*	*0.833*	*0.694*	*0.579*	*0.482*	*0.402*	*0.335*	*0.279*	*0.233*	*0.194*
Years for discounting	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Discounted Net income	-10	-8	0	0	0	$ 797.8	$ 688.6	$ 211.1	$ 181.4	$ 155.7

Net Present Value (NPV), mn	**$2,016.26**
Diluted Shares out, mn	27.8
Further Potential Dilution, mn	40.5
New dilution required for drug release	37.5
Est. Dilution at Commercialization Phase	78.0
Potential NPV per share	**$ 25.87**
Probability of Success at Pre-Clinic Stage	*9%*
Discounted Risk-Adjusted Value	**$ 2.33**

FINAL VALUATION

Bandwidth Valuation Methodologies	**Per Share**
Comp Peers (28% Success Probability Haircut)	$ 1.94
Terminal Value (15% Success Probability Haircut)	$ 2.53
NPV (9% Success Probability Haircut)	$ 2.33
Implied 'Mean' Projected Valuation	**$ 2.27**

Historical Financial Overview

INCOME STATEMENT

AtheroNova is in development stage and reports no meaningful revenues. The company does not expect to generate any significant revenue for a number of years, if at all. Since inception AtheroNova has incurred an accumulated loss of $13.5 million.

For the three and nine month periods ended September 30, 2011 and 2010,
And for the period from December 13, 2006 (Inception) through September 30, 2011

	Three months ended September 30,		Nine months ended September 30,		Cumulative From
	2011	2010	2011	2010	Inception
Revenue, net	$ 0	$ 0	$ 0	$ 0	$ 0
Operating expenses:					
Research and development	88,270	--	271,645	110,450	763,180
General and administrative expenses	797,078	594,028	1,571,334	987,915	3,474,001
Impairment charge-intellectual property	--	572,868	--	572,868	572,868
Total operating expenses	885,348	1,166,896	1,842,979	1,671,233	4,810,049
Loss from operations	(885,348)	(1,166,896)	(1,842,979)	(1,671,233)	(4,810,049)
Other income / (expenses):					
Other income (expense)	36	676	165	(46,708)	3,281
Merger-related expenses	--	--	--	(323,294)	(323,294)
Cancellation of related-party debt	--	--	--	--	100,000
Interest expense	(401,446)	(196,810)	(594,922)	(233,060)	(944,830)
Private Placement Costs	--	--	--	(2,042,348)	(2,148,307)
Gain on extinguishment of derivative liability	811,393	--	811,393	--	811,393
Change in fair value of derivative liabilities	(3,469,451)	(412,361)	3,934,420	(412,361)	(6,221,155)
Net income (loss) before income taxes	(3,944,816)	(1,775,391)	2,308,077	(4,729,004)	(13,532,961)
Provision for income taxes	--	--	4,840	1,759	6,599
Net income (loss)	$ (3,944,816)	$ (1,775,391)	$ 2,303,237	$ (4,730,763)	$(13,539,560)
Diluted income (loss) per share	$ (0.15)	$ (0.08)	$ 0.08	$ (0.21)	
Diluted weighted average shares outstanding	26,503,747	22,785,012	27,665,915	22,243,571	

For the nine months ended September 30, 2011, research and development expenses increased to $271,645 from $110,450 for the same period in 2010. This increase is primarily the result of the 2nd pre-clinical trials currently in process as well as expenses for patent and intellectual property work during the current year with only final report expenses in the prior year.

General and administrative costs increased to $1,571,334 for the first nine months of 2011 compared to $987,915 for the first nine months of 2010. The increase of $583,419 pertained to costs associated with corporate offices, payroll expenses as well as the cost of stock based compensation expense.

For the period ended September 30, 2011, interest expense was $594,922 compared to $233,060 in the same period in 2010. This change is due to interest expense and increased discount amortization of $242,518 on the portion of the convertible notes

BALANCE SHEET

Condensed Consolidated Balance Sheets

	9/30/2011	12/31/2011
Assets		
Current Assets		
Cash	$ 686,783	$ 177,802
Other Current Assets	14,139	14,039
Total Current Assets	700,922	191,841
Equipment, net	4,676	5,521
Total Assets	$ 705,598	$ 197,362
Liabilities and Stockholders' Deficiency		
Current Liabilities:		
Accounts payable and accrued expenses	$ 288,691	$ 157,665
Interest payable	33,613	22,596
Derivative Liability	8,952,110	13,697,923
Total Current Liabilities	9,274,414	13,878,184
2.5% Senior secured convertible notes, net of discount	338,505	228,298
Commitments and Contingencies		
Stockholders' Deficiency		
Preferred stock $0.0001 par value, 10,000,000 shares authorized, none outstanding at September 30, 2011 and December 31, 2010	--	--
Common stock $0.0001 par value, 100,000,000 shares authorized, 27,547,211 and 23,420,899 outstanding at September 30, 2011 and December 31, 2010, respectively	2,748	2,337
Additional paid in capital	4,629,491	1,931,340
Deficit accumulated during the development stage	(13,539,560)	(15,842,797)
Total stockholders" deficiency	(8,907,321)	(13,909,120)
Total Liabilities and Stockholders" Deficiency	$ 705,598	$ 197,362

For the period ended September 30, 2011, AtheroNova‟s balance sheet showed $700,922 in current assets with $686,783 in cash, a current asset increase of 356% from the period ending 12/31/10. Current liabilities declined 33% from $13,878,184 for 12/31/10 to $9,274,414 for the period ended September 30, 2011. The Deficit accumulated during the development stage and total stockholders‟ deficiency also sharply declined from 12/31/10, to $(13,539,560) and $(8,907,321), respectively, the period ended September 30, 2011.

STATEMENTS OF CASH FLOWS

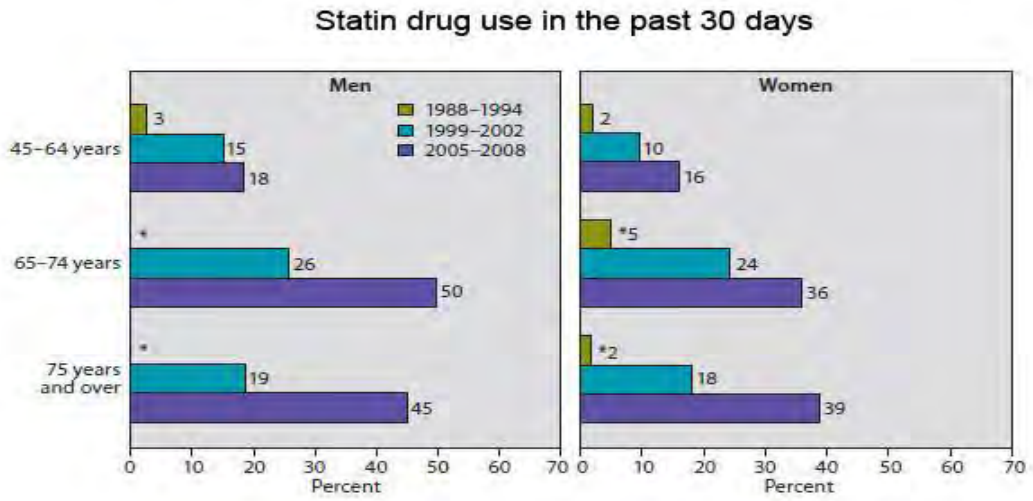
	Nine months ended September 30,		Cumulative From
	2011	**2010**	**Inception**
Operating Activities:			
Net income (loss)	$ 2,303,237	$ (4,730,763)	$ (13,539,560)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Loss on settlement of payables	36,113	--	36,113
Amortization of debt discount	570,808	218,470	897,155
Depreciation	1,882	12,009	3,430
Stock based compensation	791,111	473,628	1,786,965
Impairment charge-intellectual property	--	572,867	572,867
Cost of private placement	--	2,042,348	2,148,307
Gain on extinguishment of debt	(811,393)	--	(811,393)
Change in fair value of derivative liabilities	(3,934,420)	412,361	6,221,155
Cancellation of debt	--	--	(100,000)
Changes in operating assets and liabilities:			
Other current assets	(100)	(81,022)	(14,139)
Accounts payable and accrued expenses	167,649	(33,697)	447,910
Net cash used in operating activities	(875,113)	(1,113,799)	(2,351,190)
Investing Activities			
Purchase of equipment	(1,037)	(7,069)	(8,106)
Investment in intellectual property	--	--	(372,867)
Cash received from reverse merger	--	--	1,281
Net cash used in investing activities	(1,037)	(7,069)	(379,692)
Financing Activities			
Proceeds from issuance of common stock	1,385,131	225,000	2,022,659
Proceeds from sale of 2.5% senior secured convertible notes, net	--	1,395,601	1,395,006
Net cash provided by financing activities	1,385,131	1,620,601	3,417,665
Net change in cash	508,981	499,733	686,783
Cash - beginning balance	177,802	28,047	--
Cash - ending balance	**$ 686,783**	$ **527,780**	**$ 686,783**

Industry Trends & Market Potential

In the United States, one person will die every 30 seconds from cardiovascular disease (CVD). CVD remains the leading cause of death in industrialized countries and is the largest cost driver of health systems. Cardiovascular disease (CVD) is the number one cause of death globally. An estimated 17.1 million people die from CVD every year and without the intervention of new therapies, by 2030, almost 23.6 million people will die from CVD.[6] Atherosclerosis is the main underlying cause of CVD.

In the late 1980s, the pharmaceutical companies introduced a new type of cholesterol lowering drug called 'statins'. These drugs inhibit the body's production of many important substances, one of which is cholesterol. Sold as Zocor (Zocord in the US), Crestor, Mevacor, Pravachol, Lescol and Lipitor, these drugs have received wide acclaim because of the cholesterol reduction they achieve. In 2009, the world statins market generated over $27 billion in revenues and raked in over a quarter of a trillion dollars since they were introduced two decades ago.

About half of men ages 65-74, and 39% of women ages 75+ take statin drugs. Combined with the 45+ age groups from both genders, then it comes out that one in four Americans ages 45+ are taking a statin. There are roughly 127 million Americans over age 45.



Source: http://www.health.harvard.edu

The American Heart Association estimates the direct and indirect costs of cardiovascular disease (CVD) in the United States alone for 2010 are $503.2 billion.[7] CVD can be generally defined as any abnormal condition characterized by dysfunction of the heart and blood vessels – caused by the gradual buildup of fat and cholesterol in the arteries that supply blood to the heart, brain and other vital organs.

Plaque Regression is the new paradigm and future of atherosclerosis treatment. Therapies that decrease plaque burden have yet to reach the market. This paradigm shift in atherosclerosis

[6] World Health Organization. http://www.myheart.org.sg/heart-facts/statistics
[7] Reuters, Heart disease to cost U.S $503 billion in 2010: JoAnne Allen, Dec 17, 2009

products that regress coronary plaque represents an unprecedented opportunity for the life sciences industry.

Methods of Atherosclerosis Treatment in Detail-

- **Use of medications**- today a large number of medication are available in the market for Atherosclerosis Treatment that are grouped into different categories including angiotensin receptor blockers, angiotensin-converting enzyme inhibitors, anticoagulants, beta blockers, antiplatelets, calcium channel blockers, digitalis, cholesterol medications, nitrates, and diuretics.
- **Lifestyle changes** helpful in Atherosclerosis Treatment include eating well, proper exercising, weight maintenance, reducing stress and restraining alcohol consumption and smoking.
- **Bypass surgery of the leg arteries**- flow of blood is redirected by a healthy blood vessel to bypass blocked or narrowed blood vessels to improve blood flow.
- **Open heart surgery**- veins and arteries of other parts of the body are utilized for flow of blood in and out of the heart to bypass the damaged arteries and thus relieve chest pain.
- **Coronary angioplasty-** this procedure is carried out to keep narrowed and blocked arteries wide open to relieve chest pain and to improve the flow of blood.
- **Stent placement-** a small wire mesh tube called stent is placed to support arteries in staying open. Stent is placed with the help of a balloon catheter.
- **Carotid artery surgery-** plaque accumulated around the carotid artery in the neck is removed using this procedure.
- **Plaque removal-** plaque is removed from arteries with the help of catheter that cuts away the plaque with a rotating shaver.

Expansive list of the Drugs Referred for Atherosclerosis-

- Altoprev (Generic name Lovastatin)
- Atorvastatin (trade name lipitor)
- Crestor
- Fluvastatin
- Lescol (genric name Fluvastatin)
- Lescol XL(genric name Fluvastatin)
- Lipitor
- Lovastatin
- Mevacor (Generic name Lovastatin)
- Pravachol (Generic Name Pravastin)
- Pravastatin
- Rosuvastatin
- Simvastatin
- Zocor (Generic Name Simvastatin)

BIOTECHNOLOGY TRENDS:

Though the mega-merger boom of 2009 may have receded some, pharma and biotech companies‟ appetite for M&A remained active last year. The pharma sector saw 548 deals valued at $51.5

billion USD in 2010, representing a sharp decline of 68 percent ($161.2 billion USD during the previous period with 563 deals).[8]

	US	Europe	Japan	China	Latin America	RoW	Total
Undisclosed Deals	47	79	16	26	7	64	239
Up to 20 Million USD	21	24	6	58	2	55	166
20 to 50 Million USD	13	10	2	13	5	17	60
50 to 100 Million USD	11	7	2	3	2	4	29
100 to 250 Million USD	10	3	0	2	1	4	20
250 to 500 Million USD	4	5	1	2	1	0	13
Above 500 Million USD	8	6	0	1	1	5	21
Total	**114**	**134**	**27**	**105**	**19**	**149**	**548**

Source: Thomson M&A Database, IMAP

According to the 2011 IMAP Health Report, "consolidation and alliances will continue to transform the market as companies adapt to changing conditions within the industry. Pharma companies will turn to M&A to consolidate their core businesses, and to get access to new areas of growth. With continued low interest rates and lots of cash on hand of the Big Players, M&A and licensing activity is bound to grow further in the future."

M&A Activities at a Glance

2010 vs. 2009	2009	2010
Transaction value (USD billion)	161.2	51.6
Top 5 transactions	78.4%	38.3%
Top 5 Countries in 2010	**No. of transactions**	**Value (USD mn)**
United States	114	25.6
Germany	18	5.4
India	48	4.9
China	105	3.4
Brazil	13	1.9

Source: Thomson M&A Database, IMAP

Clearly Big Pharma companies are striving hard to stave off the R&D crisis through mergers and acquisitions, geographic expansion and diversification into new areas such as consumer health.

[8] An IMAP Health Report, Pharmaceuticals & Biotech Industry Global Report - 2001

Price Chart: AHRO (OTCBB), year-to-date

Source: http://bigcharts.marketwatch.com/

CONCLUSION

Although we typically consider early-stage biotechnology stocks as speculative for ratings, we assigned AtheroNova a Buy rating given the very encouraging pre-clinical results in reducing a remarkable 95% less innominate arterial plaque compared to the control group, together with the superb initial safety and tolerability data. With funding in place for the Phase I and Phase II trials, there are significant future value points in the pipeline for a $20+ billion market where the current standard of care of statins is at best, minimally effective at reducing plaque. We look for further studies and the commencement of Phase I studies to keep AHRO-001"s value milestones on a positive course.

However, we also took great consideration of the recent biotechnology industry association BIO data showing that the success rates of new drugs from Phase I to FDA approval is a low 9%.
A Key finding from the BIO study is that this number is comprised of lead and secondary indications. When separated, lead indications have close to a one in seven rate of approval and secondary indications have a rate of one in 30. The study also shows that large molecule drugs are twice as successful in gaining approval as small molecule drugs.[9]

Disclaimer

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[9] http://insidebioia.com/

compensated in advance to ensure independent and unbiased opinions are rendered without conflict. The Company paid Prime Equity Research $5,500 and another $5,000 was paid by a third-party for independent equity coverage.

The following is from the Final Report of the SEC Advisory Committee on Smaller Public Companies, adopted February 21, 2006: *www.**sec**.gov/info/**small**bus/acspc/acspc-**finalreport**.pdf* "In order to address the need for more independent research for smaller public companies, [the U.S. Securities and Exchange Advisory Committee on Smaller Public Companies recommends] that the Commission: "Maintain policies that allow company-sponsored research to occur with full disclosure by the research provider as to the nature of the relationship with the company being covered. "Entities providing such research should disclose and adhere to a set of ethical standards that ensure quality and transparency and minimize conflicts of interest."

Analyst:

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