ARCA biopharma, Inc.
Form 424B3
April 30, 2010
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File No. 333-148288

ADDENDUM TO PROSPECTUS SUPPLEMENT DATED DECEMBER 8, 2009

(To Prospectus dated January 16, 2008)

$20,000,000

Common Stock

This addendum to the accompanying prospectus supplement and prospectus relates to the offer and sale from time to time of our common stock, par value $0.001 per share, through Wedbush Securities Inc. f/k/a Wedbush Morgan Securities, Inc. (Wedbush), as our sales agent, pursuant to an equity distribution agreement. Sales of our common stock through Wedbush, if any, will be made by means of ordinary brokers transactions on the NASDAQ Global Market or otherwise at market prices prevailing at the time of sale, in block transactions, or as otherwise agreed upon by us and Wedbush. We may also sell shares of common stock to Wedbush, as principal for its own account, at a price to be agreed upon at the time of sale. On April 30, 2010, we and Wedbush entered into an amendment to such equity distribution agreement to increase the maximum aggregate offering amount of our common stock that can be offered and sold pursuant to the equity distribution agreement from $10,000,000 to $20,000,000. As a result, all references to $10,000,000 in the prospectus supplement dated December 8, 2009 shall be deleted and $20,000,000 be substituted in lieu thereof. As of April 30, 2010, we have sold approximately $7.2 million of common stock under the equity distribution agreement. After giving effect to the amendment, approximately $12.8 million of common stock may be sold pursuant to such agreement.

See Plan of Distribution in the prospectus supplement on page S-33 for further information.

Our common stock is listed on the NASDAQ Global Market under the symbol ABIO. On April 29, 2010, the last reported sale price of our common stock was $5.45 per share.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page S-5 of the prospectus supplement and the risk factors contained in our filings with the Securities and Exchange Commission which have been incorporated herein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Wedbush PacGrow Life Sciences

The date of this prospectus supplement is April 30, 2010.

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PROSPECTUS SUPPLEMENT

(To Prospectus dated January 16, 2008)

$10,000,000

Common Stock

We have entered into an equity distribution agreement with Wedbush Morgan Securities, Inc. (Wedbush) relating to shares of our common stock, par value $0.001 per share.

Under the equity distribution agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to $10,000,000 from time to time through Wedbush as our sales agent. Sales of our common stock through Wedbush, if any, will be made by means of ordinary brokers transactions on the NASDAQ Global Market or otherwise at market prices prevailing at the time of sale, in block transactions, or as otherwise agreed upon by us and Wedbush.

We will pay Wedbush a commission, or allow a discount, as the case may be, in each case equal to 4.5% of the gross sales prices of the shares sold through it as agent under the equity distribution agreement.

Under the equity distribution agreement, we may also sell shares of common stock to Wedbush, as principal for its own account, at a price to be agreed upon at the time of sale.

Our common stock is listed on the NASDAQ Global Market under the symbol ABIO. On December 4, 2009, the last reported sale price of our common stock was $2.86 per share.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page S-5 of this prospectus supplement and the risk factors contained in our filings with the Securities and Exchange Commission which have been incorporated herein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Wedbush PacGrow Life Sciences

The date of this prospectus supplement is December 8, 2009.

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No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus supplement or the accompanying prospectus. You must not rely on any unauthorized information or representations. This prospectus supplement and the accompanying prospectus are an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus supplement and the accompanying prospectus is current only as of their respective dates.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

We have included or incorporated by reference into this prospectus supplement, the accompanying prospectus and the documents incorporated by reference statements that may constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements may be identified by words including believe, anticipate, should, intend, plan, will, expect, estimate, project, positio similar expressions. Such statements are based on our management s current expectations and involve risks and uncertainties. Our actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors discussed in this prospectus supplement and the accompanying prospectus. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. While we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus supplement and the accompanying prospectus, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain.

In addition, you should refer to the Risk Factors section of this prospectus supplement for a discussion of other important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus supplement and the accompanying prospectus or documents incorporated by reference will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. You should not place undue reliance on these forward-looking statements, which apply only as of the date of this prospectus supplement. You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference completely and with the understanding that our actual future results may be materially different from what we expect.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and our website.

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and certain other matters and may add, update or change information in the accompanying prospectus. The second part is the accompanying prospectus dated January 16, 2008, which provides you with general information about securities we may offer from time to time, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus, on the other hand, you should rely on the information in this prospectus supplement. These documents contain important information you should consider when making your investment decision. You should rely only on the information provided in this prospectus supplement, the accompanying prospectus or incorporated by reference in this prospectus supplement or the accompanying prospectus. We have not authorized anyone to provide you with any other information.

This prospectus supplement and the accompanying prospectus do not constitute an offer to sell or a solicitation of an offer to buy the shares offered hereby in any jurisdiction where, or to any person to whom, it is unlawful to make such offer or solicitation.

The information contained in the prospectus and this prospectus supplement is accurate only as of the date of the prospectus and this prospectus supplement, regardless of the time of delivery of the prospectus, this prospectus supplement or of any sale of the shares. We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary may not contain all the information that you should consider before investing in our common stock. You should read the entire prospectus supplement and the accompanying prospectus carefully, including the Risk Factors section contained in this prospectus supplement and the documents incorporated by reference in the accompanying prospectus, before making an investment decision. This prospectus supplement may add to, update or change information in the accompanying prospectus.

Unless we have indicated otherwise, or the context otherwise requires, references in this prospectus supplement to ARCA, Nuvelo, we, us and our refer to ARCA biopharma, Inc. and our subsidiaries.

Overview

We are a biopharmaceutical company whose principal focus is developing genetically-targeted therapies for heart failure and other cardiovascular diseases. Our lead product candidate is Gencaro™ (bucindolol hydrochloride), a pharmacologically unique beta-blocker and mild vasodilator being developed for the treatment of chronic heart failure. Gencaro is an oral tablet formulation, dosed twice daily. We currently hold worldwide rights to Gencaro.

Chronic heart failure, or HF, is one of the largest health care problems in the United States and the rest of the world. Beta-blockers are part of the current standard of care for HF, and are considered to be among the most effective drug classes for the disease. However, a significant percentage of eligible patients in the United States is not being treated with, or does not tolerate or respond well to, those beta-blockers currently approved for the treatment of HF. We believe that new therapies for which patient response can be predicted before a drug is prescribed can help improve the current standard of practice in the treatment of HF.

We have identified common genetic variations in the cardiac nervous system that we believe interact with Gencaro s pharmacology and may predict patient response. We have collaborated with Laboratory Corporation of America (LabCorp) to develop the Gencaro Test, a companion test for the genetic markers that may predict clinical response to Gencaro. LabCorp has developed the Gencaro Test to be run using a blood sample to provide prompt results to the treating physician. The Gencaro Test was submitted through the Premarket Approval, or PMA, process in January 2009.

Bucindolol was the subject of a major North America based heart failure Phase 3 trial, known as the BEST trial. In September 2008, the U.S. Food and Drug Administration (FDA) formally accepted for filing our New Drug Application (NDA) for Gencaro as a potential treatment for HF, based on the BEST trial. On May 29, 2009, the FDA issued a Complete Response Letter to us which stated that it could not approve the Gencaro NDA in its current form and specified additional actions and information required by the FDA for approval of the NDA. In the Complete Response Letter, the FDA raised clinical effectiveness issues, asserting that the BEST trial does not adequately demonstrate efficacy of Gencaro in reducing all-cause mortality in patients with heart failure. The Complete Response Letter states that in order to obtain approval of Gencaro, among other things, we must conduct an additional clinical efficacy trial of Gencaro in patients with heart failure.

We are in the process of reviewing the Complete Response Letter with the FDA, including the necessary actions required to address the issues identified in the Complete Response Letter. As a result of these discussions, we expect that we will be required to conduct a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population to address the efficacy concerns raised in the Complete Response Letter. We anticipate that the proposed trial protocol will be a superiority comparison to the beta-blocker metoprolol CR/XL, which is approved for heart failure and other indications. As a result, FDA approval of Gencaro, if it occurs, will be substantially delayed.

We intend to seek the use of the FDA s Special Protocol Assessment, or SPA, process to establish the design of the clinical trial, including trial size, clinical endpoints and/or data analyses that are acceptable to the FDA. We expect that we may be able to present additional clinical data to support the approval of Gencaro based on the achievement of a predefined result on an interim analysis in this clinical trial. We also expect that the SPA submission will propose that a composite of cardiovascular mortality and cardiovascular hospitalization serve as the primary endpoint of the trial. If agreed to by the

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FDA, we anticipate that the proposed trial could reach the specified number of endpoint events as soon as approximately two years after the trial begins. Any proposed trial protocol must be reviewed and agreed to by the FDA and the final trial protocol may be significantly different from our initial SPA submission. We anticipate that we will submit the study protocol for review under the SPA process in the fourth quarter of 2009. Subject to the timing and outcome of the FDA s review of the SPA submission, and subject to our ability to obtain sufficient funding, we currently expect that we could begin the proposed trial in late 2010 or the first half of 2011.

The FDA has designated the investigation of Gencaro as a Fast Track development program. This designation facilitates the development and expedites the review of new drugs that are intended to treat serious or life-threatening conditions and that demonstrate the potential to address unmet medical needs. Fast Track drug development designation is described in the FDA Modernization Act of 1997 as a formal process to enhance interactions with the FDA during drug development. A drug development program with Fast Track designation is eligible for consideration for some or all of the following programs for expediting development and review: scheduled meetings to seek FDA input into development plans, priority review of an NDA, the option of submitting portions of an NDA prior to submission of the complete application and potential accelerated approval. As a result of the Fast Track designation for the Gencaro development program, we will be eligible for consideration for such programs.

In addition to requiring an additional efficacy trial of Gencaro, the Complete Response Letter also required additional actions and raised additional issues. The Complete Response Letter states that we must conduct additional clinical pharmacology studies to address drug-drug interaction and pharmacokinetic issues, and additional non-clinical studies to further characterize Gencaro metabolites. The Complete Response Letter also raised concerns regarding the integrity of the BEST data based on the FDA s audit of certain clinical sites involved in the BEST trial. We are currently in discussions with the FDA regarding these additional actions and issues.

In light of the expected multi-year delay in obtaining FDA approval for Gencaro, if at all, the substantial additional costs associated with the development of Gencaro, including the costs associated with the expected additional clinical trial, the substantial cost of commercializing Gencaro if it is approved, and the need to raise a significant amount of capital on acceptable terms to finance the proposed clinical trial and our ongoing operations, we have reduced our operating expenses, suspended our development activities for programs other than Gencaro, and are evaluating strategic alternatives. We will need to complete a strategic transaction, such as a strategic combination or license of Gencaro commercialization rights, or raise substantial additional funding through public or private debt or equity markets to support the continued clinical development of Gencaro, including the expected additional clinical trial. Even if we are able to fund continued development and Gencaro is approved, we expect we will need to complete a strategic transaction or raise substantial additional funding through public or private debt or equity markets to successfully commercialize Gencaro.

If approved, we believe that Gencaro will have market exclusivity under federal law following commercial launch, and will also potentially have protection under patent applications, which we believe would substantially extend market exclusivity. We also believe there is potential to pursue several significant follow-on indications for Gencaro, including various forms of cardiac arrhythmias.

Other Information

We were originally incorporated as Hyseq, Inc. in Illinois in 1992 and reincorporated in Nevada in 1993. On January 31, 2003, we merged with Variagenics, Inc., a publicly traded Delaware corporation based in Massachusetts, and, in connection with the merger, changed our name to Nuvelo, Inc. On March 25, 2004, we reincorporated in Delaware. On January 27, 2009, our wholly owned subsidiary merged with ARCA biopharma, Inc., a privately held Delaware corporation based in Colorado, and, in connection with the merger, we changed our name to ARCA biopharma, Inc. Our principal offices are located at 8001 Arista Place, Suite 200, Broomfield, Colorado 80021. Our telephone number is (720) 940-2200. Our internet address is http://www.arcabiopharma.com. We do not incorporate the information on our website into this prospectus, and you should not consider it part of this prospectus. For further information regarding us and our financial information, you should refer to our recent filings with the Securities and Exchange Commission (SEC). See Where You Can Find More Information and Incorporation of Certain Documents by Reference.

Each of ARCA, ARCA biopharma, Gencaro and Gencaro Test is a registered trademark of ARCA biopharma, Inc. Each of the other trademarks, trade names or service marks appearing in this prospectus belongs to its respective holder.

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THE OFFERING

Common stock offered by us	Shares having an aggregate offering price of up to $10,000,000.
Use of proceeds	We intend to use the net proceeds from this offering for general corporate purposes, including clinical trials, research and development expenses and general and administrative expenses. See Use of Proceeds.
NASDAQ Global Market Symbol	ABIO
Risk Factors	See Risk Factors beginning on page S-5 as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should consider carefully before making an investment decision.

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RISK FACTORS

An investment in our common stock offered through this prospectus supplement and the accompanying prospectus involves risks. You should carefully consider the specific risks relating to this offering and our business set forth below before making an investment decision. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also affect our business operations.

Risks Related to Our Business and Financial Condition

In light of our capital needs and current resources, there is substantial doubt about our ability to continue as a going concern.

If we are unable to raise sufficient additional capital or complete a strategic transaction, we may be unable to continue to fund our operations, develop Gencaro or our other product candidates, or realize value from our assets and discharge our liabilities in the normal course of business. These uncertainties raise substantial doubt about our ability to continue as a going concern. The consolidated financial statements incorporated by reference into this prospectus supplement have been prepared with the assumption that we will continue as a going concern and will be able to realize our assets and discharge our liabilities in the normal course of business and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from our inability to continue as a going concern. If we become unable to continue as a going concern, we may have to liquidate our assets, and might realize significantly less than the values at which they are carried on our financial statements, and stockholders may lose all or part of their investment in our common stock.

In light of the substantial costs and risks of conducting the expected additional clinical trial, the substantial delay in obtaining FDA approval for Gencaro, if at all, and the need to raise a significant amount of capital on acceptable terms to finance the proposed clinical trial and our ongoing operations, we have reduced our operating expenses, suspended our development activities for programs other than Gencaro, and are evaluating strategic alternatives. We will need to raise substantial additional funds through the public or private debt and equity markets or, alternatively, complete one or more strategic transactions, to continue development of and, if it is approved, commercialize Gencaro. If we are unable to raise such financing or complete such a transaction, we may not be able to continue operations.

On May 29, 2009, the FDA issued a Complete Response Letter to us which stated that it could not approve the Gencaro NDA in its current form and specified additional actions and information required by the FDA for approval of the NDA. We are in the process of reviewing the Complete Response Letter with the FDA, including the necessary actions required to address the issues identified in the Complete Response Letter, which we expect will include conducting a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population, in addition to other actions. As a result of the issues identified in the Complete Response Letter and subsequent discussions, we believe that FDA approval of Gencaro, if it occurs, will be substantially delayed. Although the FDA has designated the investigation of Gencaro as a Fast Track development program, such designation does not provide any assurance that Gencaro will receive FDA approval, and such designation does not constrain the FDA s ability to deny approval for Gencaro.

In light of the expected multi-year delay in obtaining FDA approval for Gencaro, if at all, the substantial additional costs associated with the development of Gencaro, including the costs associated with the expected additional clinical trial, the substantial cost of commercializing Gencaro if it is approved, and the need to raise a significant amount of capital on acceptable terms to finance the proposed clinical trial and our ongoing operations, we have reduced our operating expenses, suspended our development activities for programs other than Gencaro, and are evaluating strategic alternatives. We will need to complete a strategic transaction, such as a strategic combination or license of Gencaro commercialization rights, or raise substantial additional funding through public or private debt or equity markets to support the continued development of Gencaro, including the expected additional clinical trial. Even if we are able to fund continued development and Gencaro is approved, we expect that we will need to complete a strategic transaction or raise substantial additional funding through public or private debt or equity markets to successfully commercialize Gencaro.

We believe that our cash and cash equivalents balance as of September 30, 2009 will be sufficient to fund our operations, at our current cost structure, through at least March 31, 2010. We are unable to assert that our current cash and cash equivalents are sufficient to fund operations significantly beyond that date, and as a result, there is substantial doubt about our ability to continue as a going concern. As a result of the significant additional required development of Gencaro,

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including the additional clinical trial, we may not be able to raise sufficient capital on acceptable terms, or at all, to continue development of Gencaro or to continue operations and may not be able to execute any strategic transaction.

Our liquidity, and our ability to raise additional capital or complete any strategic transaction, depends on a number of factors, including, but not limited to, the following:

- results of discussions with the FDA regarding the requirements for approval of the Gencaro NDA, particularly, the requirements for a new clinical trial and the costs and timing of such a trial;
- the market price of our stock and the availability and cost of additional equity capital from existing and potential new investors;
- general economic and industry conditions affecting the availability and cost of capital;
- our ability to control costs associated with our operations;
- the costs of filing, prosecuting, defending and enforcing patent claims and other intellectual property rights; and
- the terms and conditions of our existing collaborative and licensing agreements.

The sale of additional equity or convertible debt securities would likely result in substantial dilution to our stockholders. If we raise additional funds through the incurrence of indebtedness, the obligations related to such indebtedness would be senior to rights of holders of our capital stock and could contain covenants that would restrict our operations. We also cannot predict what consideration might be available, if any, to us or our stockholders, in connection with any strategic transaction. Should strategic alternatives or additional capital not be available to us in the near term, or not be available on acceptable terms, we may be unable to realize value from our assets and discharge our liabilities in the normal course of business which may, among other alternatives, cause us to further delay, substantially reduce or discontinue operational activities to conserve our cash resources.

If we are not able to successfully develop and obtain FDA approval and provide for the commercialization of Gencaro in a timely manner, we may not be able to continue our business operations.

We currently have no products that have received regulatory approval for commercial sale. The process to develop, obtain regulatory approval for and commercialize potential product candidates is long, complex and costly. Gencaro is our only product candidate at a late stage of clinical development. In September 2008, the FDA accepted for filing the Gencaro NDA. On May 29, 2009, the FDA issued a Complete Response Letter to us, which stated that the FDA could not approve the Gencaro NDA in its current form and specified additional actions and information required by the FDA for approval of the NDA. As a result of issues identified in the Complete Response Letter, FDA approval of Gencaro, if it occurs, is expected to require years of additional clinical development, including a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population. Clinical trials in heart failure are typically lengthy, complex and expensive and we do not currently have the resources to fund such a trial. Although the FDA has designated the investigation of Gencaro as a Fast Track development program, such designation does not provide any assurance that Gencaro will receive FDA approval, and such designation does not constrain the FDA s ability to deny approval for Gencaro.

Failure to demonstrate that a product candidate, particularly Gencaro, is safe and effective, or significant delays in demonstrating such safety and efficacy, would adversely affect our business. Failure to obtain marketing approval of Gencaro from appropriate regulatory authorities, or significant delays in obtaining such approval, would also adversely affect our business and could, among other things, preclude us from completing a strategic transaction or obtaining additional financing necessary to continue as a going concern.

Even if approved for sale, a product candidate must be successfully commercialized to generate value. We do not currently have the capital resources or management expertise to commercialize Gencaro and, as a result, will need to complete a strategic transaction, or, alternatively,

raise substantial additional funds to enable commercialization of Gencaro, if it is approved. Failure to successfully provide for the commercialization of Gencaro, if it is approved, would damage our business.

Fast Track designation does not guarantee approval, or expedited approval, of Gencaro and there is no guarantee that Gencaro will maintain Fast Track designation.

In November 2009, we announced that the FDA granted Fast Track designation to Gencaro for the treatment of chronic heart failure. However, such designation does not constrain the FDA s ability to deny approval for Gencaro. Furthermore, the FDA may revoke Fast Track designation from a product candidate at any time if it determines that the criteria for such designation are no longer met.

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We expect to seek agreement with the FDA as to the use of a special protocol assessment, or SPA, relating to our expected new active comparator superiority trial for Gencaro. We may not be able to obtain approval of an SPA, and even if we do obtain such approval, the use of an SPA does not guarantee any particular outcome from regulatory review of the clinical trial or Gencaro, including any regulatory approval.

FDA approval of Gencaro, if it occurs, is expected to require years of additional clinical development, including a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population. Prior to the commencement of this clinical trial, we intend to attempt to reach agreement with the FDA under the special protocol assessment, or SPA, process on the design of such clinical trial. The SPA process allows for FDA evaluation of a clinical trial protocol intended to form the primary basis of an efficacy claim in support of a new drug application, and provides a binding agreement that the design of the clinical trial, including trial size, clinical endpoints and/or data analyses, are acceptable to the FDA. We cannot assure you that we will be able to successfully negotiate an SPA with the FDA regarding this new clinical trial. In addition, an SPA agreement is not a guarantee of approval, and we cannot assure you that the design of, or data collected from, the new Gencaro trial will be adequate to address the concerns raised by the FDA in the Complete Response Letter or obtain the requisite regulatory approvals for Gencaro. Further, an SPA agreement is not binding on the FDA if public health concerns unrecognized at the time the SPA agreement is entered into become evident, other new scientific concerns regarding product safety or efficacy arise, or if we fail to comply with the agreed upon trial protocols. In addition, an SPA agreement may be changed by us or the FDA on written agreement of both parties, and the FDA retains significant latitude and discretion in interpreting the terms of an SPA agreement and the data and results from the new Gencaro trial. As a result, we do not know how the FDA will interpret the parties respective commitments under any SPA agreement, how it will interpret the data and results from the new Gencaro trial, or whether Gencaro will receive any regulatory approvals as a result of any SPA agreement we may enter into with the FDA or the new clinical trial.

Based on discussions with the FDA, we expect that an SPA agreement with respect to the new Gencaro trial, if it is reached, may provide for our presentation of additional clinical data to support the approval of Gencaro based on the achievement of a predefined result on an interim analysis in this clinical trial. We cannot assure you that any SPA agreement for the new Gencaro trial will provide for such interim analysis, or that any such data will be adequate to address the concerns raised by the FDA in the Complete Response Letter.

Our clinical trials for our product candidates may not yield results that will enable us to further develop our products and obtain the regulatory approvals necessary to sell them.

We, and our collaborators, will only receive regulatory approval for our product candidates if we can demonstrate in carefully designed and conducted clinical trials that the product candidate is safe and effective. We do not know whether our current, or any future clinical trials, including the anticipated additional clinical trial for Gencaro, will demonstrate sufficient safety and efficacy to obtain the requisite regulatory approvals or will result in marketable products. Clinical trials are lengthy, complex and expensive processes with uncertain results. We have spent, and expect to continue to spend, significant amounts of time and money in the clinical development of our product candidates. We have never conducted a clinical trial and do not currently have sufficient staff with the requisite experience to do so, and we expect therefore that we will have to rely on contract research organizations to conduct our clinical trials. While certain employees have experience in designing and administering clinical trials, these employees have no such experience since being with us.

The results we obtain in preclinical testing and early clinical trials may not be predictive of results that are obtained in later studies. We may suffer significant setbacks in advanced clinical trials, even after promising results in earlier studies. Based on results at any stage of clinical trials, we may decide to repeat or redesign a trial or discontinue development of one or more of our product candidates. If we fail to adequately demonstrate the safety and efficacy of our products under development, we will not be able to obtain the required regulatory approvals to commercialize our product candidates, and our business, results of operations and financial condition would be materially adversely affected.

Administering our product candidates to humans may produce undesirable side effects. These side effects could interrupt, delay or halt clinical trials of our product candidates and could result in the FDA or other regulatory authorities denying approval of our product candidates for any or all targeted indications.

If clinical trials for a product candidate are unsuccessful, we will be unable to commercialize the product candidate. If one or more of our clinical trials are delayed, we will be unable to meet our anticipated development timelines. Either circumstance could cause the market price of our common stock to decline.

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We expect to rely on contract research organizations to conduct clinical trials, and as a result, will be unable to directly control the timing, conduct and expense of clinical trials.

We expect that we, or any strategic partners, will rely primarily on third parties to conduct clinical trials, including the clinical trial that we expect will be necessary to respond to the FDA s requirements in the Complete Response Letter. As a result, we will have less control over the conduct of the clinical trials, the timing and completion of the trials, the required reporting of adverse events and the management of data developed through the trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may have staffing difficulties, may undergo changes in priorities or may become financially distressed, adversely affecting their willingness or ability to conduct our trials. We may experience unexpected cost increases that are beyond our control. Problems with the timeliness or quality of the work of a contract research organization may lead us or any strategic partner to seek to terminate the relationship and use an alternative service provider. However, making this change may be costly and may delay ongoing trials, and contractual restrictions may make such a change difficult or impossible. Additionally, it may be impossible to find a replacement organization that can conduct clinical trials in an acceptable manner and at an acceptable cost.

Even if we do use a contract research organization to conduct clinical trials, we will have to devote substantial resources and rely on the expertise of our employees to manage the work being done by the contract research organization. We have never conducted a clinical trial and do not currently have sufficient staff with the requisite experience to do so. The inability of our staff to adequately manage any contract research organization that we hire may exacerbate the risks associated with relying on a contract research organization.

If we encounter difficulties enrolling patients in our clinical trials, our trials could be delayed or otherwise adversely affected.

Clinical trials for our product candidates require that we identify and enroll a large number of patients with the disorder or condition under investigation. We may not be able to enroll a sufficient number of patients to complete our clinical trials in a timely manner.

Patient enrollment is affected by factors including:

- design of the protocol;
- the size of the patient population;
- eligibility criteria for the study in question;
- perceived risks and benefits of the drug under study;
- availability of competing therapies, including the off-label use of therapies approved for related indications;
- efforts to facilitate timely enrollment in clinical trials;
- the success of our personnel in making the arrangements with potential clinical trial sites necessary for those sites to begin enrolling patients;
- patient referral practices of physicians;

availability of clinical trial sites; and

other clinical trials seeking to enroll subjects with similar profiles.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay or terminate ongoing or planned clinical trials, either of which would have a negative effect on our business. Delays in enrolling patients in our clinical trials would also adversely affect our ability to generate any product, milestone and royalty revenues under collaboration agreements, if any, and could impose significant additional costs on us or on any future collaborators.

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We are currently pursuing a strategic transaction, such as a potential combination or license of Gencaro commercialization rights, which may divert attention from the development of Gencaro. The failure to enter into a strategic transaction may materially and adversely affect our business.

Unless we are able to raise substantial additional funding through other means, we will need to complete a strategic transaction to continue the development of Gencaro. The strategic transactions that we may consider include a potential combination or license of Gencaro commercialization rights. Our board of directors and management team has and will need to devote substantial time and resources to the consideration and implementation of any such strategic transaction. In addition, conditions in the financial markets may lead to an increased number of biotechnology companies that are also seeking to enter into strategic transactions, which may limit our ability to negotiate favorable terms for any such transaction. Further, our current employees do not have experience in the strategic transaction process, and our previous efforts to enter into a strategic transaction have not been successful. As a result of these and other factors, there is substantial risk that we may not be able to complete a strategic transaction on favorable terms, or at all. The failure to complete a strategic transaction may materially and adversely affect our business.

We may be limited in our ability to access sufficient funding through a private equity or convertible debt offering.

Nasdaq rules impose restrictions on our ability to raise funds through a private offering of our common stock, convertible debt or similar instruments without obtaining stockholder approval. Under Nasdaq rules, an offering of more than 20% of our total shares outstanding for less than the greater of book or market value requires stockholder approval unless the offering qualifies as a public offering for purposes of the Nasdaq rules. As of September 30, 2009, we had 7,604,976 shares of common stock outstanding, 20% of which is approximately 1,521,000 shares. To the extent we seek to raise funds through a private offering of stock, convertible debt or similar instruments, we may be limited in how much funding we could raise privately without requiring a stockholder vote.

Unless we are able to generate sufficient product revenue, we will continue to incur losses from operations and may not achieve or maintain profitability.

Our historical losses, among other things, have had and will continue to have an adverse effect on our stockholders equity and working capital. We expect to continue to incur significant operating losses for the foreseeable future. Even if we ultimately receive regulatory approval for Gencaro or our other product candidates, sales of such products may not generate sufficient revenue for it to achieve or maintain profitability. Because of the numerous risks and uncertainties associated with developing therapeutic drugs, we may experience larger than expected future losses and may never reach profitability.

We may not achieve our projected development goals in the time frames we announce and expect.

We set goals for, and makes public statements regarding, the timing of certain accomplishments, such as the submission of responses to the Complete Response Letter, the commencement and completion of clinical trials, the disclosure of trial results, the obtaining of regulatory approval and drug product sales, which we sometimes refer to as milestones. These milestones may not be achieved, and the actual timing of these events can vary dramatically due to a number of factors such as delays or failures in our clinical trials, disagreements with current or future collaborative partners, the uncertainties inherent in the regulatory approval process and manufacturing scale-up and delays in achieving manufacturing or marketing arrangements sufficient to commercialize our products. FDA approval of Gencaro, if it occurs, is expected to require years of additional clinical development, including the completion of a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population. There can be no assurance that our clinical trials will be completed, or that we will make regulatory submissions or receive regulatory approvals as planned. If we fail to achieve one or more of these milestones as planned, our business will be materially adversely affected.

Our product candidates are subject to extensive regulation, which can be costly and time-consuming, and unsuccessful or delayed regulatory approvals could increase our future development costs or impair our future revenue.

The preclinical and clinical development, testing, manufacture, safety, efficacy, labeling, storage, recordkeeping, and subsequent advertising, promotion, sale, marketing, and distribution, if approved, of our product candidates are subject to extensive regulation by the FDA and other regulatory authorities in the United States and elsewhere. These regulations also

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vary in important, meaningful ways from country to country. We are not permitted to market a potential drug in the United States until we receive approval of an NDA from the FDA. We have not received an NDA approval from the FDA for Gencaro or any of our other product candidates. There can be no guarantees with respect to our product candidates that clinical studies will adequately support an NDA, that the products will receive necessary regulatory approvals, or that they will prove to be commercially successful.

To receive regulatory approval for the commercial sale of any product candidates, we must demonstrate safety and efficacy in humans to the satisfaction of regulatory authorities through preclinical studies and adequate and well-controlled clinical trials of the product candidates. This process is expensive and can take many years, and failure can occur at any stage of the testing. Our failure to adequately demonstrate the safety and efficacy of our product candidates will prevent regulatory approval and commercialization of such products. On May 29, 2009, the FDA issued a Complete Response Letter to us which stated that the FDA could not approve the Gencaro NDA in its current form and specified additional actions and information required by the FDA for approval of the NDA. We are in the process of reviewing the Complete Response Letter with the FDA, including the necessary actions required to address the issues identified in the Complete Response Letter, which we expect will include, among other things, completion of a new multi-year active comparator superiority trial involving approximately 3,000 patients in a genotype-defined heart failure population. As a result of the issues identified in the Complete Response Letter, FDA approval of Gencaro, if it occurs, is expected to require years of additional clinical development. Even if we conduct additional studies and submit the attendant data requested in the Complete Response Letter, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval.

In the event that we or our collaborators conduct preclinical studies that did not comply with Good Laboratory Practices or incorrectly design or carry out human clinical trials or those clinical trials fail to demonstrate clinical significance, it is unlikely that we will be able to obtain FDA approval for product development candidates. Our inability to successfully and effectively complete clinical trials for any product candidates on schedule or at all will severely harm our business. Significant delays in clinical development could materially increase product development costs or allow our competitors to bring products to market before we do, impairing our ability to effectively commercialize any future product candidates. We do not know whether planned clinical trials will begin on time, will need to be redesigned or will be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including:

- delays or failures in obtaining regulatory authorization to commence a trial because of safety concerns of regulators relating to our product candidates or similar product candidates of our competitors or failure to follow regulatory guidelines;
- delays or failures in obtaining clinical materials and manufacturing sufficient quantities of the product candidate for use in trials;
- delays or failures in reaching agreement on acceptable terms with prospective study sites;
- delays or failures in obtaining approval of our clinical trial protocol from an institutional review board, or IRB, to conduct a clinical trial at a prospective study site;
- delays in recruiting patients to participate in a clinical trial, which may be due to the size of the patient population, eligibility criteria, protocol design, perceived risks and benefits of the drug, availability of other approved and standard of care therapies, availability of clinical trial sites;
- other clinical trials seeking to enroll subjects with similar profile;
- failure of our clinical trials and clinical investigators to be in compliance with the FDA s Good Clinical Practices;

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- unforeseen safety issues, including negative results from ongoing preclinical studies;
- inability to monitor patients adequately during or after treatment;
- difficulty monitoring multiple study sites; and
- failure of our third-party contract research organizations, clinical site organizations and other clinical trial managers, to satisfy their contractual duties, comply with regulations or meet expected deadlines.

In addition, any approvals we may obtain may not cover all of the clinical indications for which we seek approval or permit us to make claims of superiority over currently marketed competitive products. Also, an approval might contain significant limitations in the form of narrow indications, warnings, precautions or contraindications with respect to conditions of use. If the FDA determines that a risk evaluation and mitigation strategy, or REMS, is necessary to ensure that the benefits of the drug outweigh the risks, we may be required to include as part of the NDA a proposed REMS that may include a package insert directed to patients, a plan for communication with healthcare providers, restrictions on a drug s distribution, or a Medication Guide, to provide better information to consumers about the drug s risks and benefits. Finally, an approval could be conditioned on our commitment to conduct further clinical trials, which we may not have the resources to conduct or which may negatively impact our financial situation.

The manufacture and tableting of Gencaro is done by third party suppliers, who must also pass a pre-approval inspection of their facilities before we can obtain marketing approval.

All of our product candidates are prone to the risks of failure inherent in drug development. The results from preclinical animal testing and early human clinical trials may not be predictive of results obtained in later human clinical trials. Further, although a new product may show promising results in preclinical or early human clinical trials, it may subsequently prove unfeasible or impossible to generate sufficient safety and efficacy data to obtain necessary regulatory approvals. The data obtained from preclinical and clinical studies are susceptible to varying interpretations that may delay, limit or prevent regulatory approval, and the FDA and other regulatory authorities in the United States and elsewhere exercise substantial discretion in the drug approval process. The numbers, size and design of preclinical studies and clinical trials that will be required for FDA or other regulatory approval will vary depending on the product candidate, the disease or condition for which the product candidate is intended to be used and the regulations and guidance documents applicable to any particular product candidate. The FDA or other regulators can delay, limit or deny approval of any product candidate for many reasons, including, but not limited to:

- side effects;
- safety and efficacy;
- defects in the design of clinical trials;
- the fact that the FDA or other regulatory officials may not approve our or our third party manufacturer s processes or facilities; or
- the fact that new regulations may be enacted by the FDA or other regulators may change their approval policies or adopt new regulations requiring new or different evidence of safety and efficacy for the intended use of a product candidate.

In light of widely publicized events concerning the safety of certain drug products, regulatory authorities, members of Congress, the Government Accountability Office, medical professionals and the general public have raised concerns about potential drug safety issues. These events have resulted in the withdrawal of certain drug products, revisions to certain drug labeling that further limit use of the drug products and establishment of risk management programs that may, for instance,

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restrict distribution of drug products. The increased attention to drug safety issues may result in a more cautious approach by the FDA to clinical trials and approval. Data from clinical trials may receive greater scrutiny with respect to safety and the product s risk/benefit profile, which may make the FDA or other regulatory authorities more likely to terminate clinical trials before completion, or require longer or additional clinical trials that may result in substantial additional expense, and a delay or failure in obtaining approval or approval for a more limited indication than originally sought. Aside from issues concerning the quality and sufficiency of submitted preclinical and clinical data, the FDA may be constrained by limited resources from reviewing and determining the approvability of the Gencaro NDA in a timely manner. Indeed, in early 2008, the FDA announced that due to a lack of resources, NDAs may not be reviewed within the performance goals under PDUFA, and from time to time, the FDA has extended the review period for NDAs.

In our NDA, we have requested that the FDA approve Gencaro as a therapy that can be prescribed by physicians for patients with heart failure, and specifically for its effect on certain clinical outcomes for these heart failure patients. We have also requested that certain information be included in the prescribing information distributed with Gencaro that shows the effect of genetic differences in patients on the clinical results for Gencaro. The FDA could approve Gencaro, but without including some or all of the prescribing information that we have requested. For instance, FDA could approve Gencaro without some or all of the pharmacogenetic information in the labeling. This, in turn, could substantially and detrimentally impact our ability to successfully commercialize Gencaro and effectively protect our intellectual property rights in Gencaro.

If our product candidates receive regulatory approval, we would be subject to ongoing regulatory obligations and restrictions, which may result in significant expenses and limit our ability to develop and commercialize other potential products.

If a product candidate of ours is approved by the FDA or by another regulatory authority, we would be held to extensive regulatory requirements over product manufacturing, testing, distribution, labeling, packaging, adverse event reporting and other reporting to regulatory authorities, storage, advertising, marketing, promotion, distribution, and record keeping. Regulatory approvals may also be subject to significant limitations on the indicated uses or marketing of the product candidates. Potentially costly follow-up or post-marketing clinical studies may be required as a condition of approval to further substantiate safety or efficacy, or to investigate specific issues of interest to the regulatory authority. Previously unknown problems with the product candidate, including adverse events of unanticipated severity or frequency, may result in additional regulatory controls or restrictions on the marketing or use of the product or the need for post marketing studies, and could include suspension or withdrawal of the products from the market.

Furthermore, our third-party manufacturers and the manufacturing facilities that they use to make our product candidates are regulated by the FDA. Quality control and manufacturing procedures must continue to conform to cGMP after approval. Drug manufacturers and their subcontractors are required to register their facilities and products manufactured annually with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA, state and/or other foreign authorities. Any subsequent discovery of problems with a product, or a manufacturing or laboratory facility used by us or our collaborators, may result in restrictions on the product, or on the manufacturing or laboratory facility, including a withdrawal of the drug from the market or suspension of manufacturing. Any changes to an approved product, including the way it is manufactured or promoted, often require FDA approval before the product, as modified, can be marketed. We and our third-party manufacturers will also be subject to ongoing FDA requirements for submission of safety and other post-market information.

The marketing and advertising of our drug products by our collaborators or us will be regulated by the FDA, certain state agencies or foreign regulatory authorities. Violations of these laws and regulations, including promotion of our products for unapproved uses or failing to disclose risk information, are punishable by criminal and civil sanctions and may result in the issuance of enforcement letters or other enforcement action by the FDA, U.S. Department of Justice, state agencies, or foreign regulatory authorities that could jeopardize our ability to market the product.

In addition to the FDA, state or foreign regulations, the marketing of our drug products by us or our collaborators will be regulated by federal, state or foreign laws pertaining to health care fraud and abuse, such as the federal anti-kickback law prohibiting bribes, kickbacks or other remuneration for the order or recommendation of items or services reimbursed by federal health care programs. Many states have similar laws applicable to items or services reimbursed by commercial insurers. Violations of these laws are punishable by criminal and civil sanctions, including, in some instances, imprisonment and exclusion from participation in federal and state health care programs, including the Medicare, Medicaid and Veterans Affairs healthcare programs. Because of the far-reaching nature of these laws, we may be required to

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discontinue one or more of our practices to be in compliance with these laws. Health care fraud and abuse regulations are complex, and even minor irregularities can potentially give rise to claims that a statute or prohibition has been violated. Any violations of these laws, or any action against us for violations of these laws, even if we successfully defend against it, could have a material adverse effect on our business, financial condition and results of operations.

We could also become subject to false claims litigation under federal statutes, which can lead to civil money penalties, restitution, criminal fines and imprisonment, and exclusion from participation in Medicare, Medicaid and other federal and state health care programs. These false claims statutes include the False Claims Act, which allows any person to bring a suit on behalf of the federal government alleging submission of false or fraudulent claims, or causing to present such false or fraudulent claims, under federal programs or contracts claims or other violations of the statute and to share in any amounts paid by the entity to the government in fines or settlement. These suits against pharmaceutical companies have increased significantly in volume and breadth in recent years. Some of these suits have been brought on the basis of certain sales practices promoting drug products for unapproved uses. This new growth in litigation has increased the risk that a pharmaceutical company will have to defend a false claim action, pay fines or restitution, or be excluded from the Medicare, Medicaid, Veterans Affairs and other federal and state healthcare programs as a result of an investigation arising out of such action. We may become subject to such litigation and, if we are not successful in defending against such actions, those actions may have a material adverse effect on our business, financial condition and results of operations. We could also become subject to false claims litigation and consumer protection claims under state statutes, which also could lead to civil monetary penalties, restitution, criminal fines and imprisonment, and exclusion from participation in state health care programs.

Of note, over the past few years there has been an increased focus on the sales and marketing practices of the pharmaceutical industry at both the federal and state level. Additionally, the law or regulatory policies governing pharmaceuticals may change. New statutory requirements may be enacted or additional regulations may be adopted that could prevent or delay regulatory approval of our product candidates or limit our ability to commercialize our products. We cannot predict the likelihood, nature or extent of adverse government regulation that may arise from future legislation or administrative action, either in the U.S. or elsewhere.

If we, our collaborators or our third-party manufacturers fail to comply with applicable continuing regulatory requirements, our business could be seriously harmed because a regulatory agency may:

- issue untitled or warning letters;
- suspend or withdraw our regulatory approval for approved products;
- seize or detain products or recommend a product recall of a drug or medical device, or issue a mandatory recall of a medical device;
- refuse to approve pending applications or supplements to approved applications filed by us;
- suspend any of our ongoing clinical trials;
- restrict our operations, including costly new manufacturing requirements, or restrict the sale, marketing and/or distribution of our products;
- seek an injunction;
- pursue criminal prosecutions;

close the facilities of our contract manufacturers; or

impose civil or criminal penalties.

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We are relying upon LabCorp to obtain marketing clearance or approval of the companion Gencaro Test. There is no guarantee that the FDA will grant timely clearance or approval of the Gencaro Test, if at all, and failure to obtain such timely clearance or approval would adversely affect our ability to market Gencaro.

The drug label being sought for Gencaro would identify the patient receptor genotypes with a potential for enhanced efficacy, as well as those with a likelihood of a standard beta-blocker response and the smaller unfavorable subgroup with a low probability of benefit. Accordingly, we believe it will be critical to the successful commercialization of Gencaro to develop a companion genetic test, or the Gencaro Test, that is simple to administer and widely available.

The Gencaro Test is subject to regulation by the FDA and by comparable agencies in various foreign countries. The process of complying with the requirements of the FDA and comparable agencies is costly, time consuming and burdensome.

Under our agreement with LabCorp, LabCorp is responsible for determining the appropriate regulatory pathway for the Gencaro Test and obtaining market clearance or approval from the FDA. Based on FDA guidance, LabCorp has submitted a PMA regulatory submission, which the FDA formally accepted in January 2009. The FDA may decide that the Gencaro Test should be evaluated for clearance under the FDA s 510(k) notification process. We and LabCorp do not believe that any further clinical trials will be required for the Gencaro Test PMA, though there is no guarantee that the FDA will not require additional clinical data.

Despite the time and expense expended, regulatory clearance or approval is never guaranteed. If regulatory clearance or approval is delayed, or if LabCorp is unable to obtain FDA approval of the Gencaro Test at all or in parallel with the approval of Gencaro, or is unable to commercialize the test successfully and in a manner that effectively supports the commercial efforts for Gencaro, or if the information concerning the differential response to Gencaro resulting from certain genetic variation is not included in the approval label for Gencaro, the commercial launch of Gencaro may be significantly and adversely affected. If we believe it is necessary to identify a new third-party test provider, obtaining regulatory approval for that provider s genetic test could substantially delay and negatively affect the commercial prospects for Gencaro and our ability to continue as a going concern.

Reliance on third parties to commercialize Gencaro could negatively impact our business. If we are required to establish a direct sales force in the U.S. and are unable to do so, our business may be harmed.

Commercialization of Gencaro, particularly the establishment of a sales organization, will require substantial additional capital resources. We currently intend to pursue a strategic alternative for the commercialization of Gencaro, if it is approved, and have suspended our efforts to build internal sales, marketing and distribution capabilities. If we elect to rely on third parties to sell Gencaro and any other products, then we may receive less revenue than if we sold such products directly. In addition, we may have little or no control over the sales efforts of those third parties.

If we are unable to complete a strategic transaction, we would be unable to commercialize Gencaro or any other product candidate without substantial additional capital. Even if such capital were secured, we would be required to build internal sales, marketing and distribution capabilities to market Gencaro in the U.S. None of our current employees have experience in establishing and managing a sales force.

In the event we are unable to sell Gencaro and other selected product candidates, either directly or through third parties via a strategic transaction, the commercialization of Gencaro, if it is approved, may be delayed indefinitely and we may be unable to continue as a going concern.

Future sales of Gencaro may suffer if its marketplace acceptance is negatively affected by the Gencaro Test.

The Gencaro Test is an important component of the commercial strategy for Gencaro. We believe that the Gencaro Test helps predict patient response to Gencaro, and that this aspect of the drug is important to its ability to compete effectively with current therapies. The Gencaro Test adds an additional step in the prescribing process, an additional cost for the patient and payors, the risk that the test results may not be rapidly available and the possibility that it may not be available at all to hospitals and medical centers. Although we anticipate that Gencaro, if approved in a timely manner, would be the first genetically-targeted cardiovascular drug, Gencaro will be one of a number of successful drugs in the beta-blocker class currently on the market. Prescribers may be more familiar with these other beta-blockers, and may be resistant to prescribing Gencaro as an HF therapy. Any one of these factors could affect prescriber behavior, which in turn may substantially impede market acceptance of the Gencaro Test, which could cause significant harm to Gencaro s ability to compete, and in turn harm our business.

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We are dependent on our key personnel.

The success of our business is highly dependent on the principal members of our board of directors and executive management, including our Chairman of the Board, Richard B. Brewer, and our President and Chief Executive Officer, Michael R. Bristow. The loss of the services of any such individual might seriously harm our product development, partnering and financing efforts. Recruiting and training personnel with the requisite skills is challenging and we compete for talent with companies that are larger and have more financial resources.

We have no manufacturing capacity which puts us at risk of lengthy and costly delays of bringing our products to market.

We do not currently operate manufacturing facilities for clinical or commercial production of our product candidates, including their active pharmaceutical ingredients, or API. We have no experience in drug formulation or manufacturing, and we lack the resources and the capabilities to manufacture any of our product candidates on a clinical or commercial scale. We do not intend to develop facilities for the manufacture of product candidates for clinical trials or commercial purposes in the foreseeable future.

We have contracted with Groupe Novasep to manufacture commercial quantities of the API for Gencaro. For drug production, we have contracted with Patheon, Inc. to manufacture the Gencaro tablets. These contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to successfully produce, store and distribute our products. In addition, these manufacturers may have staffing difficulties, may not be able to manufacture our products on a timely basis or may become financially distressed. In the event of errors in forecasting production quantities required to meet demand, natural disaster, equipment malfunctions or failures, technology malfunctions, strikes, lock-outs or work stoppages, regional power outages, product tampering, war or terrorist activities, actions of regulatory authorities, business failure, strike or other difficulty, we may be unable to find an alternative third-party manufacturer in a timely manner and the production of our product candidates would be interrupted, resulting in delays and additional costs, which could impact our ability to commercialize and sell our product candidates.

We or our contract manufacturers may also fail to achieve and maintain required manufacturing standards, which could result in patient injury or death, product recalls or withdrawals, an order by governmental authorities to halt production, delays or failures in product testing or delivery, cost overruns or other problems that could seriously hurt our business. Contract manufacturers also often encounter difficulties involving production yields, quality control and quality assurance, as well as shortages of qualified personnel. In addition, our contract manufacturers are subject to ongoing inspections and regulation by the FDA, the U.S. Drug Enforcement Agency and corresponding foreign and state agencies and they may fail to meet these agencies acceptable standards of compliance. If our contract manufacturers fail to comply with applicable governmental regulations, such as quality control, quality assurance and the maintenance of records and documentation, we may not be able to continue production of the API or finished product. If the safety of any API or product supplied is compromised due to failure to adhere to applicable law or for other reasons, this may jeopardize our regulatory approval for Gencaro and other product candidates, and we may be held liable for any injuries sustained as a result.

Upon the occurrence of one of the aforementioned events, the ability to switch manufacturers may be difficult for a number of reasons, including:

- the number of potential manufacturers is limited and we may not be able to negotiate agreements with alternative manufacturers on commercially reasonable terms, if at all;
- long lead times are often needed to manufacture drugs;
- the manufacturing process is complex and may require a significant learning curve; and
- the FDA must approve any replacement prior to manufacturing, which requires new testing and compliance inspections.

If LabCorp or certain of its third-party suppliers fail to comply with ongoing FDA or other foreign regulatory authority requirements, or if there are unanticipated problems with the Gencaro Test, these products could be subject to restrictions or withdrawal from the market.

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Any medical device for which LabCorp obtains clearance or approval, and the manufacturing processes, reporting requirements, post-approval clinical data and promotional activities for such product, will be subject to continued regulatory review, oversight and periodic inspections by the FDA and other domestic and foreign regulatory bodies. With respect to the Gencaro Test, to the extent applicable, LabCorp and certain of its suppliers will be required to comply with the FDA s Quality System Regulation, or QSR, and International Standards Organization, or ISO, requirements which cover the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage and shipping of any product for which clearance or approval is obtained. Regulatory bodies, such as the FDA, enforce the QSR and other regulations through periodic inspections. The failure by LabCorp, or certain of its third-party manufacturers or suppliers, as the case may be, to comply with applicable statutes and regulations administered by the FDA and other regulatory bodies, or the failure to timely and adequately respond to any adverse inspectional observations or product safety issues, could result in, among other things, enforcement actions. If any of these actions were to occur, it could harm our reputation and cause product sales and profitability of Gencaro to suffer and may prevent us from generating revenue.

Even if regulatory clearance or approval is granted, such clearance or approval may be subject to limitations on the intended uses for which the product may be marketed and reduce our potential to successfully commercialize the product and generate revenue from the product.

If LabCorp or certain of its third party suppliers fail to supply the Gencaro Test, we may be unable to obtain FDA approval for Gencaro or the product sales and profitability of Gencaro may suffer.

LabCorp is our single-source supplier of the Gencaro Test and has the right to terminate its agreement with us for any reason. If LabCorp or its third party suppliers were to terminate their agreement with us or cease or interrupt production of or otherwise fail to supply the Gencaro Test, or the materials required to produce it, in a timely manner or at all, we could be unable to complete any additional clinical trials with Gencaro or to obtain a contract manufacturer of companion genetic test for Gencaro for an indeterminate period of time. This could adversely affect our ability to complete clinical development of Gencaro, including the expected additional clinical trial, or to commercialize Gencaro if it is ultimately approved, either of which could have an adverse effect on our financial condition and results of operations.

Medical devices related to Gencaro, such as the Gencaro Test, may in the future be subject to product recalls that could harm our reputation, business and financial results.

The FDA and similar foreign governmental authorities have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture. In the case of the FDA, the authority to require a mandatory recall must be based on an FDA finding that there is a reasonable probability that the device would cause serious adverse health consequences or death. In addition, foreign governmental bodies have the authority to require the recall of our products in the event of material deficiencies or defects in design or manufacture. Manufacturers may, under their own initiative, initiate a field correction or removal, known as a recall, for a product if any material deficiency in a device is found. A government-mandated or voluntary recall by our third-party suppliers, including LabCorp, could occur as a result of component failures, manufacturing errors, design or labeling defects or other deficiencies and issues. Any such recalls would divert managerial and financial resources and may have an adverse effect on our financial condition and results of operations.

If medical devices related to Gencaro, such as the Gencaro Test, cause or contribute to a death or a serious injury, or malfunction in certain ways, our third-party suppliers will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions.

Under the FDA s medical device reporting regulations, medical device manufacturers are required to report to the FDA information that a device has or may have caused or contributed to a death or serious injury or has malfunctioned in a way that would likely cause or contribute to death or serious injury if the malfunction of the device or one of our similar devices were to recur. If our third-party suppliers, including LabCorp, fail to report these events to the FDA within the required timeframes, or at all, the FDA could take enforcement action against our third-party suppliers, including LabCorp. Any such adverse event involving the Gencaro Test also could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection or enforcement action. Any corrective action, whether voluntary or involuntary, taken by our third-party suppliers, including LabCorp, may significantly affect our ability to market Gencaro. In such cases, we could be forced to identify a new third-party test provider for the Gencaro Test.

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LabCorp may need to conduct clinical trials to support current or future versions of the Gencaro Test. Delays or failures in any such clinical trials may prevent LabCorp from commercializing any modified or new versions of the Gencaro Test and will adversely affect our business, operating results and prospects.

Based on discussions with the FDA, we and LabCorp do not believe that clinical data are needed for the Gencaro Test submission. However, the FDA may require clinical data for the Gencaro Test submission and/or future products. Initiating and completing clinical trials necessary to support 510(k)s or PMAs, if required, for current or future products will be time consuming and expensive and the outcome uncertain. Moreover, the results of early clinical trials are not necessarily predictive of future results, and any product we or our third party suppliers, including LabCorp, advance into clinical trials may not have favorable results in later clinical trials.

Conducting successful clinical studies may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit. Patient enrollment in clinical trials and completion of patient participation and follow-up depends on many factors, including: the size of the patient population; the number of patients to be enrolled; the nature of the trial protocol; the attractiveness of, or the discomforts and risks associated with, the treatments received by enrolled subjects; the availability of appropriate clinical trial investigators, support staff, and proximity of patients to clinical sites; and the patients ability to meet the eligibility and exclusion criteria for participation in the clinical trial and patient compliance. For example, patients may be discouraged from enrolling in clinical trials if the trial protocol requires them to undergo extensive post-treatment procedures or follow-up to assess the safety and effectiveness of our products or if they determine that the treatments received under the trial protocols are not attractive or involve unacceptable risks or discomforts. In addition, patients participating in clinical trials may die before completion of the trial or suffer adverse medical events unrelated to investigational products.

Development of sufficient and appropriate clinical protocols to demonstrate safety and efficacy are required, and we or LabCorp may not adequately develop such protocols to support clearance and approval. Significant risk trials will require the submission and approval of an investigational device exemption, or IDE, from the FDA. There is no guarantee that the FDA will approve LabCorp s or our future IDE submissions. Further, the FDA may require LabCorp or us to submit data on a greater number of patients than originally anticipated and/or for a longer follow-up period or change the data collection requirements or data analysis applicable to our clinical trials. Delays in patient enrollment or failure of patients to continue to participate in a clinical trial may cause an increase in costs and delays in the approval and attempted commercialization of future products or result in the failure of the clinical trial. In addition, despite considerable time and expense invested in such clinical trials, the FDA may not consider the data to be adequate to demonstrate safety and efficacy. Such increased costs and delays or failures could adversely affect our or our third party suppliers business, operating results and prospects.

Transitioning from a developmental stage company will require successful completion of a number of steps, many of which are outside of our control and, consequently, we can provide no assurance of our successful and timely transition from a developmental stage company.

We are a development stage biopharmaceutical company with a limited operating history. To date we have not generated any product revenue and have historically funded our operations through investment capital. Our future growth depends on our ability to emerge from the developmental stage and successfully commercialize or provide for the commercialization of Gencaro and our other product candidates, which in turn, will depend, among other things, on our ability to:

- conduct an additional clinical trial and develop and obtain regulatory approval for Gencaro or other product candidates;
- successfully partner a companion genetic test with the commercial launch of Gencaro;
- enter into a strategic transaction enabling the continued development and commercialization of Gencaro, or alternatively, raise significant additional capital to enable these activities;
- pursue additional indications for Gencaro and develop other product candidates, including other cardiovascular therapies; and

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obtain commercial quantities of Gencaro or other product candidates at acceptable cost levels.

Any one of these factors or other factors discussed in this prospectus supplement could affect our ability to successfully commercialize Gencaro and other product candidates, which could impact our ability to earn sufficient revenues to transition from a developmental stage company and continue our business.

Federal regulatory reforms may adversely affect our or our suppliers ability to sell products profitably.

From time to time, legislation is drafted and introduced in the U.S. Congress that could significantly change the statutory provisions governing the clearance or approval, manufacture and marketing of a medical device. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect the way that medical devices are marketed and promoted. It is impossible to predict whether legislative changes will be enacted or FDA regulations, guidance or interpretations changed, and what the impact of such changes, if any, may be.

Without limiting the generality of the foregoing, in September 2007, the Food and Drug Administration Amendments Act of 2007, or the Amendments, were enacted. The Amendments require, among other things, that the FDA propose, and ultimately implement, regulations that will require manufacturers to label medical devices with unique identifiers unless a waiver is received from the FDA. Once implemented, compliance with those regulations may require manufacturers to take additional steps in the manufacture and labeling of medical devices. These steps may require additional resources and could be costly. In addition, the Amendments require medical device manufacturers to, among other things, comply with clinical trial registration requirements once clinical trials are initiated.

If approved by the FDA, Gencaro will be entering a competitive marketplace and may not succeed.

Gencaro is a new type of beta-blocker and vasodilator being developed for heart failure and other indications. While we anticipate that this drug, if approved, would be the first genetically-targeted cardiovascular drug, Gencaro will be one of a number of successful drugs in the beta-blocker class currently on the market. For example, currently, there are three branded beta-blockers indicated for chronic heart failure in New York Health Association, or NYHA class II-IV patients: TOPROL-XL (once-a-day formulation), Coreg and Coreg CR (once-a-day). TOPROL-XL and Coreg have generic equivalents commercially available in the U.S. (Metoprolol Succinate and Carvedilol, respectively). The price of the generic forms of these drugs will be less than the anticipated price of Gencaro, if approved. As a result, Gencaro may not be successful in competing against these existing drugs.

Additionally, Forest Laboratories has applied for approval to use Bystolic, a drug currently used to treat high blood pressure, for treatment of heart failure. If approved for treatment of heart failure, Gencaro may not be successful in competing against Bystolic, an already well-known name brand.

Our commercial opportunity may be reduced or eliminated if competitors develop and commercialize products that are safer, more effective, have fewer side effects, are more convenient or are less expensive than Gencaro. If products with any of these properties are developed, or any of the existing products are better marketed, then prescriptions of Gencaro by physicians and patient use of Gencaro could be significantly reduced or rendered obsolete and noncompetitive. Further, public announcements regarding the development of any such competing drugs could adversely affect the market price of our common stock and the value of our assets.

Future sales of our products may suffer if they are not accepted in the marketplace by physicians, patients and the medical community.

Gencaro or our other product candidates may not gain market acceptance among physicians, patients and the medical community. The degree of market acceptance of Gencaro or our other product candidates will depend on a number of factors, such as its effectiveness and tolerability, as compared with competitive drugs. Also, prevalence and severity of side-effects could negatively affect market acceptance of Gencaro or our other product candidates. Failure to achieve market acceptance of Gencaro would significantly harm our business.

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If we are unable to obtain acceptable prices or adequate reimbursement from third-party payors for Gencaro, or any other product candidates that we may seek to commercialize, then our revenues and prospects for profitability will suffer.

Our or any strategic partner s ability to commercialize Gencaro, or any other product candidates that we may seek to commercialize, is highly dependent on the extent to which coverage and reimbursement for these product candidates will be available from:

- governmental payors, such as Medicare and Medicaid;
- private health insurers, including managed-care organizations; and
- other third-party payors.

Many patients will not be capable of paying for our potential products themselves and will rely on third-party payors to pay for their medical needs. A primary current trend in the U.S. health care industry is toward cost containment. Large private payors, managed-care organizations, group purchasing organizations and similar organizations are exerting increasing influence on decisions regarding the use of, and reimbursement levels for, particular treatments. Such third-party payors, including Medicare, are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly approved health care products.

Cost-control initiatives could decrease the price we might establish for products, which could result in product revenues lower than anticipated. If the prices for our product candidates decrease, or if governmental and other third-party payors do not provide adequate coverage and reimbursement levels, then our revenue and prospects for profitability will suffer.

Health care reform measures could materially and adversely affect our business.

In the United States and in foreign jurisdictions there have been, and we expect that there will continue to be, a number of legislative and regulatory proposals aimed at changing the health care system in ways that could impact our ability to sell our products. The current administration has stated that it is committed to reforming the health care system in the United States and multiple proposals to effect such reform have been introduced in Congress. It is likely that any legislation that is enacted will affect the biopharmaceutical industry. We are unable to predict what additional legislation or regulation, if any, relating to the health care industry or third-party coverage and reimbursement may be enacted in the future or what effect such legislation or regulation would have on our business. For example, we or any strategic partner s ability to commercialize Gencaro, or any other product candidates that we may seek to commercialize, is highly dependent on the extent to which coverage and reimbursement for these product candidates will be available from government payors, such as Medicare and Medicaid, private health insurers, including managed care organizations, and other third-party payors, and any change in reimbursement levels from those currently existing could materially and adversely affect our business. Existing laws affecting the pricing and coverage of pharmaceuticals and other medical products by government programs and other third party payors may change before any of our product candidates are approved for marketing. The uncertainty as to the nature and scope of any proposed reforms limits our ability to forecast changes that may affect our business and to manage our business accordingly. This uncertainty may also make it more difficult for us to enter into a strategic transaction or raise additional financing. The pendency or approval of such proposals or reforms could materially and adversely affect our business.

Our competitors may be better positioned in the marketplace and thereby may be more successful than us at developing, manufacturing and marketing approved products.

Many of our competitors currently have significantly greater financial resources and expertise in conducting clinical trials, obtaining regulatory approvals, managing manufacturing and marketing approved products than us. Other early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. In addition, these third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring therapies and therapy licenses complementary to our programs or advantageous to our business. We expect that our ability to compete effectively will depend upon our ability to:

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successfully and rapidly complete clinical trials for any product candidates and obtain all requisite regulatory approvals in a cost-effective manner;

build an adequate sales and marketing infrastructure, raise additional funding, or enter into strategic transactions enabling the commercialization of our products;

develop competitive formulations of our product candidates;

attract and retain key personnel; and

identify and obtain other product candidates on commercially reasonable terms.

If we fail to identify and license or acquire other products or product candidates, then we may be unable to expand our business, and the acquisition or licensing of other products or product candidates may put a strain on our operations and will likely require us to seek additional financing.

One of our strategies is to license or acquire clinical-stage products or product candidates and further develop them for commercialization. The market for licensing and acquiring products and product candidates is intensely competitive and many of our competitors may have greater resources than us. If we undertake any additional acquisitions, whether of product candidates or other biopharmaceutical companies, the process of integrating an acquired product candidate or complementary company into our business may put a strain on our operations, divert personnel, financial resources and management s attention. For the remainder of 2009, we expect our research and development activities other than those associated with Gencaro will be limited. If we are not able to substantially expand our research and development efforts and identify and license or acquire other products or product candidates or complete future acquisitions, then we will likely be unable expand our pipeline of product candidates. In addition, any future acquisition would give rise to additional operating costs and will likely require us to seek additional financing. Future acquisitions could result in additional issuances of equity securities that would dilute the ownership of existing stockholders. Future acquisitions could also result in the incurrence of debt, contingent liabilities or the amortization of expenses related to other intangible assets, any of which could adversely affect our operating results.

Any future product revenues could be reduced by imports from countries where our product candidates are available at lower prices.

Even if we obtain FDA approval to market Gencaro or other products in the U.S., our or a strategic partner s sales in the U.S. may be reduced if our products are imported into the U.S. from lower priced markets, whether legally or illegally. In the U.S., prices for pharmaceuticals are generally higher than in the bordering nations of Canada and Mexico. From time to time, legislative proposals have been introduced which would legalize the import of pharmaceuticals from outside the U.S. If such legislation were enacted, then our future revenues could be reduced.

We would be subject to applicable regulatory approval requirements of the foreign countries in which we markets our products, which are costly and may prevent or delay us from marketing our products in those countries.

In addition to regulatory requirements in the United States, we would be subject to the regulatory approval requirements in each foreign country where we market our products. In addition, we might be required to identify one or more collaborators in these foreign countries to develop, seek approval for and manufacture our products and any companion genetic test for Gencaro. If we determine to pursue regulatory approvals and commercialization of our product candidates internationally, we may not be able to obtain the required foreign regulatory approvals on a timely basis, if at all, and any failure to do so may cause us to incur additional costs or prevent us from marketing our products in foreign countries, which may have a material adverse effect on our business, financial condition and results of operations.

We have incurred and will continue to incur increased costs as a result of being a public company.

As a public company, we have incurred and will continue to incur significant levels of legal, accounting and other expenses. The Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and related rules of the SEC and Nasdaq regulate corporate governance practices of public companies and impose significant requirements relating to disclosure controls and

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procedures and internal control over financial reporting. Compliance with these public company requirements has increased our costs, required additional resources and made some activities more expensive and time consuming. We are required to expend considerable time and resources complying with public company regulations.

Failure to establish and maintain effective internal control over financial reporting could have a material adverse effect on our business, operating results and stock price.

Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial reports and is important in helping to prevent financial fraud. Prior to the recently completed merger involving Nuvelo, we were not subject to the Sarbanes-Oxley Act. Therefore, our management only performed an evaluation of Nuvelo s internal control over financial reporting as of December 31, 2008 in accordance with the provisions of the Sarbanes-Oxley Act. Material weaknesses may exist when we report on the effectiveness of our internal control over financial reporting for purposes of our reporting requirements under the Exchange Act or Section 404 of the Sarbanes-Oxley Act for our fiscal year ending December 31, 2009. The existence of one or more material weaknesses would preclude a conclusion that we maintain effective internal control over financial reporting. Such a conclusion would be required to be disclosed in our future Annual Reports on Form 10-K and could impact the accuracy and timing of our financial reporting and the reliability of our internal control over financial reporting, which could have a material adverse effect on our business, operating results and stock price.

The continued economic downturn could adversely affect our business and operating results.

Business activity across a wide range of industries and regions has substantially reduced, and many companies are in serious difficulty due to the lack of consumer spending, reduced access to credit, cash flow shortages, deterioration of their businesses, and lack of liquidity in the capital markets. Challenging economic and market conditions may also result in:

- reductions to our workforce;
- increased price competition, which may adversely affect the revenue and gross margins we anticipate from any of our product candidates, once commercialized;
- financial strain on the health care system, which may lead to lower than anticipated sales of our product candidates, once commercialized;
- the bankruptcy or insolvency of our collaborators and third party manufacturers; and
- difficulties in forecasting, budgeting and planning due to limited visibility into economic conditions.

A prolonged national or regional economic recession, or other events that have produced or could produce major changes economic patterns, such as the housing market crisis, the credit crisis or a terrorist attack, could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Intellectual Property and Other Legal Matters

We are party to securities litigation and defending these lawsuits could hurt our business. The volatility of the market price could engender additional class action securities litigation.

Following periods of volatility in the market price of a company s securities, class action securities litigation has often been instituted against such a company. This risk is especially acute for biotechnology companies, which have experienced greater than average stock price volatility in recent years and, as a result, have been subject to, on average, a greater number of securities class action claims than companies in other industries. Any such litigation instigated against us could result in substantial costs and a diversion of management s attention and resources, which could significantly harm our business, financial condition and operating results.

For example, in December 2006, after Nuvelo announced that alfimeprase did not meet its primary endpoint in the first of two planned Phase 3 trials for the treatment of acute peripheral arterial occlusion and in the first of two planned

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Phase 3 trials for the treatment of catheter occlusion, the closing price of one share of Nuvelo s common stock was $81 (as adjusted for the 20-to-1 reverse stock split) on the day of the announcement, as compared with a closing price of $391 (as adjusted for the 20-to-1 reverse stock split) on the trading day prior to the announcement. On February 9, 2007, Nuvelo and certain of Nuvelo s former and current officers and directors were named as defendants in a purported securities class action lawsuit filed in the U.S. District Court for the Southern District of New York. The suit alleged violations of the Exchange Act related to the clinical trial results of alfimeprase, which Nuvelo announced on December 11, 2006, and sought damages on behalf of purchasers of Nuvelo s common stock during the period between January 5, 2006 and December 8, 2006. Specifically, the suit alleged that Nuvelo misled investors regarding the efficacy of alfimeprase and the drug s likelihood of success. The plaintiff sought unspecified damages and injunctive relief. Three additional lawsuits were filed in the Southern District of New York on February 16, 2007, March 1, 2007 and March 6, 2007, respectively. On April 10, 2007, three separate motions to consolidate the cases, appoint lead plaintiff, and appoint lead plaintiff s counsel were filed. On April 18, 2007, Nuvelo filed a motion to transfer the four cases to the Northern District of California. The Court granted Nuvelo s motion to transfer the cases to the Northern District of California in July 2007. Plaintiffs have filed motions for consolidation, lead plaintiff and lead plaintiff s counsel in the Northern District of California. Plaintiffs filed their consolidated complaint in the Northern District of California on November 9, 2007. Nuvelo filed a motion to dismiss plaintiffs consolidated complaint on December 21, 2007. Plaintiffs filed an opposition to Nuvelo s motion to dismiss on February 4, 2008. On June 12, 2008, the Court held a hearing on the motion to dismiss.

On December 4, 2008, the Court issued an order dismissing plaintiff s complaint, and granting leave to amend. On January 23, 2009, the plaintiffs filed an amended complaint, alleging similar claims. On March 24, 2009, the defendants filed a motion to dismiss the amended complaint. On July 15, 2009, the Court held a hearing on the motion to dismiss. On August 17, 2009, the Court granted in part and denied in part defendants motion. We filed our answer to plaintiff s complaint on October 1, 2009. Based on plaintiff s amended complaint, we believe that any attorneys fees, loss or settlement payment with respect to this suit will be paid by our insurance provider. However, it is possible that we could be forced to incur material expenses in the litigation and, in the event of an adverse outcome, our business could be harmed.

In addition, Variagenics, with which Nuvelo merged in 2003, has been named as a defendant in a securities class action lawsuit alleging the failure to disclose additional and excessive commissions purportedly solicited by and paid to underwriters who are also named defendants in the lawsuit. Plaintiffs in the suit allege that underwriters took these commissions and in exchange allocated shares of Variagenics stock to their preferred customers through alleged agreements with these preferred customers that tied the allocation of initial public offering shares to agreements by the customers to make additional aftermarket purchases at pre-determined prices. As a result of Nuvelo s merger with Variagenics, we are obligated to continue to defend against this litigation. On April 1, 2009 the parties entered into a settlement agreement and have filed a motion to approve the settlement with the Court. On October 5, 2009, the Court approved the settlement agreement. Our share of the settlement is approximately $385,000. Although the settlement has been approved, it has been appealed by members of the class. We believe that any attorneys fees, loss or settlement payment with respect to this suit will be paid by Nuvelo s insurance provider. However, it is possible that we could be forced to incur material expenses in the litigation if the parties cannot complete a settlement, and, in the event of an adverse outcome, our business could be harmed.

If product liability lawsuits are successfully brought against us, then we will incur substantial liabilities and may be required to limit commercialization of Gencaro or other product candidates.

We face product liability exposure related to the testing of our product candidates in human clinical trials, and may face exposure to claims by an even greater number of persons once we begin marketing and distributing our products commercially. If we cannot successfully defend against product liability claims, then we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for our products and product candidates;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;

substantial monetary awards to patients and others;

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loss of revenues; and

the inability to commercialize our products and product candidates.

We have obtained limited product liability insurance coverage. Such coverage, however, may not be adequate or may not continue to be available to us in sufficient amounts or at an acceptable cost, or at all. We may not be able to obtain commercially reasonable product liability insurance for any product candidate.

Defending against claims relating to improper handling, storage or disposal of hazardous chemicals, radioactive or biological materials could be time consuming and expensive.

Our research and development of product candidates may involve the controlled use of hazardous materials, including chemicals, radioactive and biological materials. We cannot eliminate the risk of accidental contamination or discharge and any resultant injury from the materials. Various laws and regulations govern the use, manufacture, storage, handling and disposal of hazardous materials. We may be sued or be required to pay fines for any injury or contamination that results from our use or the use by third parties of these materials. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research, development and production efforts.

The loss of any rights to market key products would significantly impair our operating results.

We have licensed from CPEC, who has licensed rights in Gencaro from Bristol-Myers Squibb Company (BMS), the exclusive rights to Gencaro for all therapeutic and diagnostic uses in any country until the later of (i) 10 years from the first commercial sale of Gencaro in such country, or (ii) the termination of our commercial exclusivity in such country. This license includes a sublicense to us from BMS. We are obligated to use commercially reasonable efforts to develop and commercialize Gencaro, including obtaining regulatory approvals. Our ability to develop and commercialize Gencaro is dependent on numerous factors, including some factors that are outside of our control. CPEC has the right to terminate our license if we materially breach our obligations under the license agreement and fail to cure any such breach within the terms of the license.

If our license agreement with CPEC is terminated for reasons related to non-payment of fees, or for any other breach, then we would have no further rights to develop and commercialize Gencaro for any indication. The termination of this license, or of any other agreement which enables us to market a key product or product candidate, could significantly and adversely affect our business.

Certain intellectual property licensed by us, including the diagnostic rights to key genetic markers used in development of the Gencaro Test licensed from CardioDx, Inc. and sublicensed by us to LabCorp, are the subject of additional licensing arrangements to which the party that has licensed rights to us is subject. If such parties were to breach the terms of such licenses or such licenses were otherwise to terminate, our and our partners rights to use such technology and develop and commercialize their products such as the Gencaro Test may terminate and our business would be materially harmed.

Third parties may own or control patents or patent applications that we may be required to license to commercialize our product candidates or that could result in litigation that would be costly and time consuming.

Our or any strategic partner s ability to commercialize Gencaro and other product candidates depends upon our ability to develop, manufacture, market and sell these drugs without infringing the proprietary rights of third parties. A number of pharmaceutical and biotechnology companies, universities and research institutions have or may be granted patents that cover technologies similar to the technologies owned by or licensed to us. We may choose to seek, or be required to seek, licenses under third party patents, which would likely require the payment of license fees or royalties or both. We may also be unaware of existing patents that may be infringed by Gencaro, the genetic testing we intend to use in connection with Gencaro or our other product candidates. Because patent applications can take many years to issue, there may be other currently pending applications that may later result in issued patents that are infringed by Gencaro or our other product candidates. Moreover, a license may not be available to us on commercially reasonable terms, or at all.

There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and biopharmaceutical industries generally. If a third party claims that we are infringing on its technology, then our business and results of operations could be harmed by a number of factors, including:

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infringement and other intellectual property claims, even if without merit, are expensive and time-consuming to litigate and can divert management s attention from our core business;

monetary damage awards for past infringement can be substantial;

a court may prohibit us from selling or licensing product candidates unless the patent holder chooses to license the patent to us; and

if a license is available from a patent holder, we may have to pay substantial royalties.

We may also be forced to bring an infringement action if we believe that a competitor is infringing our protected intellectual property. Any such litigation will be costly, time-consuming and divert management s attention, and the outcome of any such litigation may not be favorable to us.

Our intellectual property rights may not preclude competitors from developing competing products and our business may suffer.

Our competitive success will depend, in part, on our ability to obtain and maintain patent protection for our inventions, technologies and discoveries, including intellectual property that we license. The patent positions of biotechnology companies involve complex legal and factual questions, and we cannot be certain that our patents and licenses will successfully preclude others from using our technology. Although Gencaro has an established patent strategy, the timing of the grant of a patent cannot be predicted. Patent applications describing and seeking patent protection of methods, compositions or processes relating to proprietary inventions involving human therapeutics could require us to generate data, which may involve substantial costs. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued. Consequently, we cannot be certain that any of our patent applications will result in the issuance of patents or, if any patents are issued, that they will provide significant market protection or will not be circumvented or challenged and found to be unenforceable or invalid. In some cases, patent applications in the U.S. and certain other jurisdictions are maintained in secrecy until patents issue, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. Moreover, we may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office to determine priority of invention or in opposition proceedings in a foreign patent office, any of which could result in substantial cost to us, even if the eventual outcome is favorable. There can be no assurance that a court of competent jurisdiction would hold any patents issued valid. An adverse outcome could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties or require us to cease using such technology. Regardless of merit, the listing of potential patents in the FDA Orange Book for Gencaro may be challenged as being improperly listed. We may have to defend against such claims and possible associated antitrust issues. We could also incur substantial costs in seeking to enforce our proprietary rights against infringement.

While the composition of matter patents on the compound that comprises Gencaro have expired, we hold the intellectual property arising from the discovery of the interaction of Gencaro with the polymorphisms of the ß $_1$ and a $_{2c}$ receptors. We have filed patent applications that claim the use of Gencaro with the diagnosis of a patient s receptor genotype. Our NDA requested a label that will include a claim that efficacy varies based on receptor genotype and a recommendation in the prescribing information that prospective patients be tested for their receptor genotype. We believe that under applicable law, a generic bucindolol label would likely be required to include this recommendation as it pertains directly to the safe or efficacious use of the drug. Such a label could be considered as inducing infringement, carrying the same liability as direct infringement. If the label with the genotype information for Gencaro is not approved, or if generic labels are not required to copy the approved label, competitors could have an easier path to introduce bioequivalent products and our business may suffer. Even if the patents are granted, the approved label may not contain language covered by the patents, or we may be unsuccessful in enforcing them.

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We may not be able to effectively protect our intellectual property rights in some foreign countries, as many countries do not offer the same level of legal protection for intellectual property as the U.S. Furthermore, the patent applications describing our proprietary methods are filed only in the U.S.

We require our employees, consultants, business partners and members of our scientific advisory board to execute confidentiality agreements upon the commencement of employment, consulting or business relationships with us. These agreements provide that all confidential information developed or made known during the course of the relationship with us be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions resulting from work performed for us, utilizing the property or relating to our business and conceived or completed by the individual during employment shall be our exclusive property to the extent permitted by applicable law.

Third parties may breach these and other agreements with us regarding our intellectual property and we may not have adequate remedies for the breach. Third parties could also fail to take necessary steps to protect our licensed intellectual property, which could seriously harm our intellectual property position.

If we are not able to protect our proprietary technology, trade secrets and know-how, then our competitors may develop competing products. Any issued patent may not be sufficient to prevent others from competing with us. Further, we have trade secrets relating to Gencaro, and such trade secrets may become known or independently discovered. Our issued patents and those that may issue in the future, or those licensed to us, may be challenged, opposed, invalidated or circumvented, which could limit our ability to stop competitors from marketing related products or the term of patent protection that we may have for our product candidates. All of these factors may affect our competitive position.

If the manufacture, use or sale of our products infringe on the intellectual property rights of others, we could face costly litigation, which could cause us to pay substantial damages or licensing fees and limit our ability to sell some or all of our products.

Extensive litigation regarding patents and other intellectual property rights has been common in the biopharmaceutical industry. Litigation may be necessary to assert infringement claims, enforce patent rights, protect trade secrets or know-how and determine the enforceability, scope and validity of certain proprietary rights. Litigation may even be necessary to defend disputes of inventorship or ownership of proprietary rights. The defense and prosecution of intellectual property lawsuits, U.S. Patent and Trademark Office interference proceedings, and related legal and administrative proceedings (e.g., a reexamination) in the U.S. and internationally involve complex legal and factual questions. As a result, such proceedings are costly and time-consuming to pursue, and their outcome is uncertain.

Regardless of merit or outcome, our involvement in any litigation, interference or other administrative proceedings could cause us to incur substantial expense and could significantly divert the efforts of our technical and management personnel. Any public announcements related to litigation or interference proceedings initiated or threatened against us could cause our stock price to decline. Adverse outcomes in patent litigation may potentially subject us to antitrust litigation which, regardless of the outcome, would adversely affect our business. An adverse determination may subject us to the loss of our proprietary position or to significant liabilities, or require us to seek licenses that may include substantial cost and ongoing royalties. Licenses may not be available from third parties, or may not be obtainable on satisfactory terms. An adverse determination or a failure to obtain necessary licenses may restrict or prevent us from manufacturing and selling our products, if any. These outcomes could materially harm our business, financial condition and results of operations.

Risks Related to Stock Price Volatility

Ownership of our common stock is highly concentrated, and it may prevent you and other stockholders from influencing significant corporate decisions and may result in conflicts of interest that could cause our stock price to decline.

Our executive officers, directors and their affiliates beneficially owned approximately 38% of our outstanding common stock as of September 30, 2009. Accordingly, these executive officers, directors and their affiliates, acting individually or as a group, have substantial influence over the outcome of a corporate action of ours requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transaction. These stockholders may also delay or prevent a change in control of us, even if such change in control would benefit our other stockholders. The significant concentration of stock ownership may adversely affect the value of our common stock due to investors perception that conflicts of interest may exist or arise.

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Our stock price is expected to be volatile.

Our common stock could be subject to significant fluctuations. Market prices for securities of early-stage pharmaceutical, biotechnology and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of our common stock to fluctuate include:

- the regulatory status of Gencaro and the Gencaro Test, and whether and when they are approved for sale, if at all, and the labeling or other conditions of use imposed by the FDA;
- our ability to secure substantial additional funding or complete a strategic transaction or to complete development of and commercialize Gencaro;
- the results of our future clinical trials and any future NDAs of our current and future product candidates;
- the entry into, or termination of, key agreements, including key strategic alliance agreements;
- the results and timing of regulatory reviews relating to our product candidates;
- failure of any of our product candidates, if approved, to achieve commercial success;
- general and industry-specific economic conditions that may affect our research and development expenditures;
- the results of clinical trials conducted by others on drugs that would compete with our product candidates;
- issues in manufacturing our product candidates or any approved products;
- the initiation of or material developments in or the conclusion of litigation to enforce or defend any of our intellectual property rights;
- the loss of key employees;
- the introduction of technological innovations or new commercial products by our competitors;
- changes in estimates or recommendations by securities analysts, if any, who cover our common stock;
- future sales of our common stock;

changes in the structure of health care payment systems; and

period-to-period fluctuations in our financial results.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company s securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm our profitability and reputation.

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Future sales or the possibility of future sales of our common stock may depress the market price of our common stock.

Sales in the public market of substantial amounts of our common stock could depress prevailing market prices of our common stock. As of September 30, 2009, we had 7,604,976 shares of common stock outstanding. All of these shares are freely transferable without restriction or further registration under the Securities Act, except for shares held by our directors, officers and other affiliates and unregistered shares held by non-affiliates. The sale of these additional shares, or the perception that such sales may occur, could depress the market price of our common stock.

As of September 30, 2009, there were approximately 1.0 million shares of our common stock which may be issued upon exercise of outstanding stock options. If and when these options are exercised, such shares will be available for sale in the open market without further registration under the Securities Act. The existence of these outstanding options may negatively affect our ability to complete future equity financings at acceptable prices and on acceptable terms. The exercise of those options, and the prompt resale of shares of our common stock received, may also result in downward pressure on the price of our common stock.

As of September 30, 2009, approximately 210,000 shares of our common stock were issuable upon the exercise of outstanding warrants, which were all exercisable as of this date. Once a warrant is exercised, if the shares of our common stock issued upon the exercise of any such warrant are not available for sale in the open market without further registration under the Securities Act, then the holder can arrange for the resale of shares either by invoking any applicable registration rights, causing the shares to be registered under the Securities Act and thus freely transferable, or by relying on an exemption to the Securities Act. If these registration rights, or similar registration rights that may apply to securities we may issue in the future, are exercised, it could result in additional sales of our common stock in the market, which may have an adverse effect on our stock price.

In the absence of a significant strategic transaction, we will need to raise significant additional capital to finance our capital requirements, including the research, development and commercialization of our drug products. If future securities offerings occur, they would dilute our current stockholders equity interests and could reduce the market price of our common stock.

We do not expect to pay cash dividends, and accordingly, stockholders must rely on stock appreciation for any return on their investment.

We anticipate that we will retain our earnings, if any, for future growth and therefore do not anticipate paying cash dividends in the future. As a result, only appreciation of the price of our common stock will provide a return to stockholders. Investors seeking cash dividends should not invest in our common stock.

We have implemented anti-takeover provisions that could discourage, prevent or delay a takeover, even if the acquisition would be beneficial to our stockholders.

Provisions of our certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, even if doing so would benefit our stockholders. These provisions:

- establish a classified board of directors so that not all members of our board may be elected at one time;
- authorize the issuance of up to 5 million additional shares of preferred stock that could be issued by our board of directors to increase the number of outstanding shares and hinder a takeover attempt;
- limit who may call a special meeting of stockholders;
- prohibit stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders; and

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establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon at a stockholder meeting.

Specifically, our certificate of incorporation provides that all stockholder action must be effected at a duly called meeting and not by a written consent. The bylaws provide, however, that our stockholders may call a special meeting of stockholders only upon a request of stockholders owning at least 50% of our outstanding common stock. These provisions of our certificate of incorporation and bylaws could discourage potential acquisition proposals and could delay or prevent a change in control. We designed these provisions to reduce our vulnerability to unsolicited acquisition proposals and to discourage certain tactics that may be used in proxy fights. These provisions, however, could also have the effect of discouraging others from making tender offers for our shares. As a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management.

We are permitted to issue shares of our preferred stock without stockholder approval upon such terms as our board of directors determines. Therefore, the rights of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of our preferred stock that may be issued in the future. In addition, the issuance of preferred stock could have a dilutive effect on the holdings of our current stockholders.

We are subject to the Delaware anti-takeover laws regulating corporate takeovers. These anti-takeover laws prevent a Delaware corporation from engaging in a merger or sale of more than 10% of its assets with any stockholder, including all affiliates and associates of the stockholder, who owns 15% or more of the corporation s outstanding voting stock, for three years following the date that the stockholder acquired 15% or more of the corporation s stock unless:

the board of directors approved the transaction where the stockholder acquired 15% or more of the corporation s stock;

after the transaction in which the stockholder acquired 15% or more of the corporation s stock, the stockholder owned at least 85% of the corporation s outstanding voting stock, excluding shares owned by directors, officers and employee stock plans in which employee participants do not have the right to determine confidentially whether shares held under the plan will be tendered in a tender or exchange offer; or

on or after this date, the merger or sale is approved by the board of directors and the holders of at least two-thirds of the outstanding voting stock that is not owned by the stockholder.

The provisions of our governing documents and current Delaware law may, collectively:

lengthen the time required for a person or entity to acquire control of us through a proxy contest for the election of a majority of our board of directors;

discourage bids for our common stock at a premium over market price; and

generally deter efforts to obtain control of us.

We have broad discretion in how we use the net proceeds of this offering, and we may not use these proceeds effectively or in ways with which you agree.

Our management will have broad discretion as to the application of the net proceeds of this offering and could use them for purposes other than those contemplated at the time of this offering. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not increase the market price of our common stock.

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Sales of our common stock in this offering, or the perception that such sales may occur, could cause the market price of our common stock to fall.

We may issue shares of our common stock with aggregate sales proceeds of up to $10,000,000 from time to time in connection with this offering. The issuance from time to time of these new shares of common stock, or our ability to issue these new shares of common stock in this offering, could have the effect of depressing the market price for our common stock.

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USE OF PROCEEDS

We expect to receive net proceeds from this offering of approximately $9,200,000, after commissions and estimated expenses payable by us, assuming that an aggregate of $10,000,000 of common stock is sold pursuant to this offering. We expect to use the net proceeds from this offering for general corporate purposes, including clinical trials, research and development expenses and general and administrative expenses.

We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds from this offering. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term interest bearing instruments.

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DILUTION

Our net tangible book value as of September 30, 2009 was $9.8 million, or $1.29 per share of common stock. Net tangible book value per share of common stock is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. After giving effect to the sale of our common stock in the aggregate amount of $10.0 million offered at an assumed public offering price of $2.86 per share, the last reported sale price of our common stock on December 4, 2009, and after deducting commissions and estimated offering expenses payable by us, our net tangible book value as of September 30, 2009 would have been $19.0 million, or $1.71 per share of common stock. This represents an immediate increase in the net tangible book value of $0.42 per share to our existing stockholders and an immediate and substantial dilution in net tangible book value of $1.15 per share to new investors. The following table illustrates this per share dilution:

Assumed public offering price per share		$ 2.86
Net tangible book value per share as of September 30, 2009	$ 1.29	
Increase in net tangible book value per share attributable to new investors	0.42	
As adjusted net tangible book value per share after this offering		1.71
Net dilution per share to new investors		$ 1.15

The table above assumes for illustrative purposes that an aggregate of 3,496,503 shares of our common stock are sold at a price of $2.86 per share, the last reported sale price of our common stock on NASDAQ on December 4, 2009, for aggregate gross proceeds of $10.0 million. The shares, if any, sold in this offering will be sold from time to time at various prices. An increase of $1.00 per share in the price at which the shares are sold from the assumed offering price of $2.86 per share shown in the table above, assuming all of our common stock in the aggregate amount of $10.0 million is sold at that price, would increase our adjusted net tangible book value per share after this offering to $1.86 per share and would increase the dilution in net tangible book value per share to new investors in this offering to $2.00 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of $1.00 per share in the price at which the shares are sold from the assumed offering price of $2.86 per share shown in the table above, assuming all of our common stock in the aggregate amount of $10.0 million is sold at that price, would decrease our adjusted net tangible book value per share after this offering to $1.46 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to $0.40 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The calculations above are based upon 7,604,976 shares of common stock outstanding as of September 30, 2009 and exclude:

- 1,024,026 shares issuable upon exercise of outstanding options pursuant to our stock incentive plans at a weighted average option exercise price of $63.15 per share as of September 30, 2009;
- 484,604 shares available for future grants or issuance under our stock incentive plans and our employee stock purchase plan as of September 30, 2009; and
- 210,463 shares issuable upon exercise of outstanding warrants, at a weighted average exercise price of $29.69 per share as of September 30, 2009.

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PRICE RANGE OF COMMON STOCK

Our common stock trades on the NASDAQ Global Market under the symbol ABIO. The following table sets forth, for the periods indicated, the high and low sales prices of our common stock.

2009	High	Low
First Quarter	$ 6.60	$ 2.00
Second Quarter	13.45	2.50
Third Quarter	4.88	2.20
Fourth Quarter (through December 4, 2009)	4.50	2.21

2008	High	Low
First Quarter	$ 37.60	$ 11.00
Second Quarter	19.40	11.00
Third Quarter	15.00	6.80
Fourth Quarter	9.40	4.21