

INOVIO BIOMEDICAL CORP

Form 424B3

July 02, 2009

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Filed Pursuant to Rule 424(b)(3)

Registration No: 333-160126

PROSPECTUS

4,788,100 Shares of Common Stock

This prospectus relates to the offer and sale from time to time by the selling stockholders of up to 4,788,100 shares of our common stock that may be acquired by the selling stockholders upon conversion of outstanding convertible subordinated promissory notes.

The selling stockholders may sell all or a portion of the shares of our common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers or agents, the selling stockholders will be responsible for paying any underwriting discounts or commissions or agent's commissions. The shares of our common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, at negotiated prices or any combination of the foregoing. We will not receive any proceeds from these resales. We provide more information about how the selling stockholders may sell their common stock in the section titled **Plan of Distribution** on page 24.

Our common stock is traded on the NYSE Amex under the symbol **INO**. On July 1, 2009, the last reported sales price for our common stock as quoted on the NYSE Amex was \$0.81 per share.

Investing in our common stock involves a high degree of risk. Prior to making a decision about investing in our common stock, you should carefully consider the specific risk factors in the section entitled **Risk Factors beginning on page 4, and the section entitled **Risk Factors** beginning on page 22 of our Annual Report on Form 10-K, as filed with the Securities and Exchange Commission on March 31, 2009, which is incorporated herein by reference in its entirety, and as updated in any future filings made with the Securities and Exchange Commission that are incorporated by reference herein.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 1, 2009

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You should rely only on the information contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. We have not, and the selling stockholders have not, authorized anyone to provide you with different information. Neither we nor the selling stockholders are making an offer to sell or seeking an offer to buy shares of our common stock under this prospectus or any applicable prospectus supplement in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus, any applicable prospectus supplement and the documents incorporated by reference herein and therein are accurate only as of their respective dates, regardless of the time of delivery of this prospectus or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since that date.

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SUMMARY

This summary highlights information contained elsewhere in this prospectus or incorporated by reference. This summary does not contain all of the information that you should consider before investing in our common stock. You should read the entire prospectus carefully, including the risks of investing in our common stock discussed under "Risk Factors" beginning on page 4, under "Risk Factors" beginning on page 22 in our Annual Report on Form 10-K, as filed with the Securities and Exchange Commission, or SEC, on March 31, 2009, which is incorporated by reference herein in its entirety, and as updated in any future filings made with the SEC that are incorporated by reference herein, and the other information and documents incorporated into this prospectus by reference, including our financial statements and related notes. As used in this prospectus, unless otherwise specified or the context requires otherwise, the terms "Inovio," "we," "our" and "us" refer to Inovio Biomedical Corporation and its subsidiaries. Reference to "selling stockholders" refers to the holders listed herein under "Selling Stockholders" beginning on page 23, who may sell shares from time to time as described in this prospectus.

Inovio Biomedical Corporation

Overview

Inovio Biomedical Corporation is engaged in the discovery, development, and delivery of a new generation of vaccines, called DNA vaccines, focused on cancers and infectious diseases. Our SynCon technology enables the design of DNA-based vaccines better-targeted to desired immune system mechanisms and capable of providing cross-protection against evolving, unmatched strains of pathogens such as influenza. Our electroporation DNA delivery technology uses brief, controlled electrical pulses to increase cellular DNA vaccine uptake. Initial human data has shown this method can safely and significantly increase gene expression and immune responses. Our clinical programs include HPV/cervical cancer (therapeutic) and HIV vaccines. We have also filed an IND with the FDA for an avian influenza vaccine. Our partners and collaborators include Merck, Tripep, University of Southampton, University of Pennsylvania, and HIV Vaccines Trial Network.

On June 1, 2009 we completed our acquisition of VGX Pharmaceuticals, Inc. ("VGX") pursuant to the terms of an Amended and Restated Agreement and Plan of Merger dated December 8, 2008 (the "Merger Agreement") by and among Inovio, Inovio's wholly-owned subsidiary Inovio Acquisition, LLC and VGX (the "Merger"). We believe the Merger advances our ability to play a leadership role in the discovery, development, and delivery of DNA vaccines.

Inovio's DNA vaccine programs currently include:

- Phase I clinical study, VGX-3100 HPV/cervical cancer vaccine (Inovio)
- Phase I clinical study, PENNVAX-BTM preventive HIV vaccine without electroporation (Inovio, with HIV Vaccines Trial Network)

- Phase I clinical study, PENNVAX-BTM therapeutic HIV vaccine without electroporation (Inovio, with University of Pennsylvania)
- Phase I clinical study, hTERT vaccine against breast, lung, prostate cancers (Merck; licensed Inovio's electroporation delivery technology)
- Phase I proof-of-concept study, prostate cancer vaccine (University of Southampton, using Inovio's electroporation delivery technology)
- Phase I proof-of-concept study, hepatitis C virus vaccine (Tripep, using Inovio's electroporation delivery technology)
- IND, awaiting approval: VGX-3400 avian flu vaccine with cross-strain capability (Inovio)

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- Pre-IND: PENNVAX-B preventive HIV vaccine using electroporation (Inovio, with HIV Vaccines Trial Network)
- Pre-clinical: PENNVAX-GP preventive HIV vaccine (Inovio; funded by \$23.5 million grant from NIH National Institute of Allergy and Infectious Diseases)
- Pre-clinical: universal influenza vaccine with sufficiently broad cross-strain capability to encompass both seasonal and pandemic-potential influenza strains (Inovio)

Other assets of the company currently include:

- VGX-1027, a rheumatoid arthritis/type 1 diabetes small molecule drug candidate, which successfully completed a Phase I clinical study and is being prepared for a phase II study.
- 25% stake in VGX International, a publicly-traded company (Korean Stock Exchange: 011000) with a DNA vaccine manufacturing subsidiary operating in Texas.
- VGX Animal Health, Inc., a majority-owned subsidiary that markets the LifeTide™ animal growth hormone for swine. LifeTide is one of only four DNA-based treatments approved for use in animals and is the only DNA-based agent delivered using electroporation that has been granted marketing approval (Australia).

Company Information

Our executive offices are located at 11494 Sorrento Valley Road, San Diego, California 92121, and our telephone number is (858) 597-6006. We maintain an Internet website at www.inovio.com. Information contained in or accessible through our website does not constitute part of this prospectus.

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THE OFFERING

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| Securities Offered | The resale from time to time of up to 4,788,100 shares of our common stock by the selling stockholders that may be issued upon conversion of outstanding convertible subordinated promissory notes. |
| Common Stock Outstanding as of June 11, 2009 | 85,713,967 shares |
| Use of Proceeds | We will not receive any of the proceeds from the selling stockholders' sale of the shares of our common stock covered by this prospectus. |
| Risk Factors | Investing in shares of our common stock involves a high degree of risk. See the Section below under the heading "Risk Factors," our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 in Item 1A under "Risk Factors" and as updated in any future filings we make with the SEC that are incorporated by reference herein. |
| NYSE Amex Symbol | INO |

The selling stockholders may sell the shares of our common stock subject to this prospectus from time to time and may also decide not to sell all the shares they are allowed to sell under this prospectus. The selling stockholders will act independently in making decisions with respect to the timing, manner and size of each sale. Furthermore, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. In addition to the other information in this prospectus, you should carefully consider the risks described below and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 in Item 1A under Risk Factors, which is incorporated by reference herein, and as updated in any future filings we make with the SEC that are incorporated by reference herein, which we believe are the material risks we face, before purchasing our common stock. If any of such risks actually occur, our business could be materially harmed, and our financial condition and results of operations could be materially and adversely affected. As a result, the trading price of our common stock could decline, and you might lose all of your investment. The risks and uncertainties described below and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 in Item 1A under Risk Factors, and as updated in any future filings we make with the SEC that are incorporated by reference herein, are not the only ones facing us. Additional risks and uncertainties, not presently known to us, or that we currently see as immaterial, may also harm our business. If any of these additional risks and uncertainties occur, the trading price of our common stock could decline, and you might lose all or part of your investment.

Risks Related to Our Business and Industry

We have incurred losses since inception, expect to incur significant net losses in the foreseeable future and may never become profitable.

We have experienced significant operating losses to date; on a pro forma basis after taking into account the closing of our acquisition of VGX Pharmaceuticals, Inc. (the Merger), as of March 31, 2009 our accumulated deficit was approximately \$227 million. To date, we have generated limited revenues, consisting of revenues from the sale of LifeTide SW5, or LifeTideTM, which is approved in Australia as a DNA therapy for food animals, license and grant revenue, and interest income. We expect to continue to incur substantial additional operating losses for at least the next several years as we advance our clinical trials and research and development activities. We may never successfully commercialize our human-use equipment and product candidates and thus may never have any significant future revenues or achieve and sustain profitability.

We will need substantial additional capital to develop our human-use equipment and products and for our future operations.

Conducting the costly and time consuming research, pre-clinical and clinical testing necessary to obtain regulatory approvals and bring our human-use equipment and product candidates to market will require a commitment of substantial funds in excess of our current capital. Our future capital requirements will depend on many factors, including, among others: the progress of our current and new product development programs; the progress, scope and results of our pre-clinical and clinical testing; the time and cost involved in obtaining regulatory approvals; the cost of manufacturing our products and product candidates; the cost of prosecuting, enforcing and defending against patent infringement claims and other intellectual property rights; competing technological and market developments; and our ability and costs to establish and maintain collaborative and other arrangements with third parties to assist in potentially bringing our products to market.

We will need to raise substantial additional capital to fund our future operations. Additional financing may not be available on acceptable terms, or at all. Domestic and international capital markets have been experiencing heightened volatility and turmoil, making it more difficult to raise capital through the issuance of equity securities. Furthermore, as a result of the recent volatility in the capital markets, the cost and availability of credit has been and may continue to be adversely affected by illiquid credit markets and wider credit spreads. Concern about the stability of the markets generally and the strength of counterparties specifically has led many lenders and institutional investors to reduce, and in some cases

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cease to provide, funding to borrowers. To the extent we are able to raise additional capital through the sale of equity securities or we issue securities in connection with another transaction, the ownership position of existing stockholders could be substantially diluted. If additional funds are raised through the issuance of preferred stock or debt securities, these securities are likely to have rights, preferences and privileges senior to our common stock and may involve significant fees, interest expense, restrictive covenants and the granting of security interests in our assets. Fluctuating interest rates could also increase the costs of any debt financing we may obtain. Raising capital through a licensing or other transaction involving our intellectual property

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could require us to relinquish valuable intellectual property rights and thereby sacrifice long term value for short-term liquidity.

Our failure to successfully address ongoing liquidity requirements would have a substantially negative impact on our business. If we are unable to obtain additional capital on acceptable terms when needed, we may need to take actions that adversely affect our business, our stock price and our ability to achieve cash flow in the future, including possibly surrendering our rights to some technologies or product opportunities, delaying our clinical trials or curtailing or ceasing operations.

Our results of operations and liquidity needs could be materially affected by market fluctuations and economic downturn.

Our results of operations could be materially affected by economic conditions generally, both in the U.S. and elsewhere around the world. Recently, concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, the U.S. mortgage market and a declining residential real estate market in the U.S. have contributed to increased volatility and diminished expectations for the economy and the markets going forward. These factors, combined with volatile oil prices, declining business and consumer confidence and increased unemployment, have precipitated an economic recession. Domestic and international capital markets have also been experiencing heightened volatility and turmoil. These events and the continuing market upheavals may have an adverse effect on us. In the event of a continuing market downturn, our results of operations could be adversely affected by those factors in many negative ways, including making it more difficult for us to raise funds if necessary, and our stock price may decline. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits. Given the current instability of financial institutions, we may experience losses on these deposits.

We may not successfully integrate the VGX Pharmaceuticals business or realize all of the anticipated benefits of our acquisition of VGX.

On June 1, 2009, we completed the Merger. To be successful after the Merger, we need to combine and integrate the separate organizations and operations of the two companies. The combination of two independent companies is a complex, costly, and time-consuming process. As a result, we must devote significant management attention and resources to integrating the diverse business practices and operations of the two companies. We may encounter difficulties that could harm the combined businesses, adversely affect our financial condition, and cause our stock price to decline, including the following:

- We may have difficulty maintaining employee morale and retaining key managers and other employees as we take steps to combine the personnel and business cultures of two separate organizations into one, and to eliminate duplicate positions and functions;

- We may have difficulty preserving important relationships with others, such as strategic partners, customers, and suppliers, who may delay or defer decisions on agreements with us, or seek to change existing agreements with us, because of the Merger;

- We may encounter unanticipated issues in integrating complex information technology, communications, and other systems used by the separate companies; and

- Our integration efforts will result in significant costs, including costs relating to employees and facilities, and may result in substantially greater costs and expenses than currently anticipated, and we may identify liabilities of the combined business that were not anticipated.

The integration process may divert the attention of our officers and management from day-to-day operations and disrupt our business, particularly if we encounter these types of difficulties. We have not previously completed a merger or acquisition comparable in size or scope to this transaction. The failure of the combined company to meet the challenges involved in the integration process could cause an interruption of, or a loss of momentum in, the activities of the combined company and could seriously harm our results of operations.

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Even if the operations of the two organizations are integrated successfully, the combined company may not fully realize the expected benefits of the transaction, including the synergies, cost savings or growth opportunities, whether within the anticipated time frame, or anytime in the future.

We have limited sources of revenue and our success is dependent on our ability to develop our human-use equipment and product candidates.

Other than LifeTide™, we do not sell any other products and may not have any other products commercially available for several years, if at all. Our ability to generate future revenues depends heavily on our success in:

- developing and securing U.S. and/or foreign regulatory approvals for our product candidates, including securing regulatory approval for conducting clinical trials with product candidates;
- developing our electroporation-based DNA delivery technology; and
- commercializing any products for which we receive approval from the FDA and foreign regulatory authorities.

Our human-use equipment and product candidates will require extensive additional clinical study and evaluation, regulatory approval in multiple jurisdictions, substantial investment and significant marketing efforts before we generate any revenues from product sales. We are not permitted to market or promote our human-use equipment and product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities. If we do not receive regulatory approval for and successfully commercialize any products, we will not generate any revenues from sales of human-use equipment and products, and we may not be able to continue our operations.

If we lose or are unable to secure collaborators or partners, or if our collaborators or partners do not apply adequate resources to their relationships with us, our product development and potential for profitability will suffer.

We have entered into, or may enter into, distribution, co-promotion, partnership, sponsored research and other arrangements for development, manufacturing, sales, marketing and other commercialization activities relating to our products. For example, we have entered into a license and collaboration agreement with Merck. The amount and timing of resources applied by our collaborators are largely outside of our control.

If any of our current or future collaborators breaches or terminates our agreements, or fails to conduct our collaborative activities in a timely manner, our commercialization of products could be diminished or blocked completely. It is possible that collaborators will change their strategic focus, pursue alternative technologies or develop alternative products, either on their own or in collaboration with others. Further, we may be forced to fund programs that were previously funded by our collaborators, and we may not have, or be able to access, the necessary

funding. The effectiveness of our partners, if any, in marketing our products will also affect our revenues and earnings.

We desire to enter into new collaborative agreements. However, we may not be able to successfully negotiate any additional collaborative arrangements and, if established, these relationships may not be scientifically or commercially successful. Our success in the future depends in part on our ability to enter into agreements with other highly-regarded organizations. This can be difficult due to internal and external constraints placed on these organizations. Some organizations may have insufficient administrative and related infrastructure to enable collaborations with many companies at once, which can extend the time it takes to develop, negotiate and implement a collaboration. Once news of discussions regarding possible collaborations are known in the medical community, regardless of whether the news is accurate, failure to announce a collaborative agreement or the entity's announcement of a collaboration with another entity may result in adverse speculation about us, resulting in harm to our reputation and our business.

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Disputes could also arise between us and our existing or future collaborators, as to a variety of matters, including financial and intellectual property matters or other obligations under our agreements. These disputes could be both expensive and time-consuming and may result in delays in the development and commercialization of our products or could damage our relationship with a collaborator.

A small number of licensing partners and government contracts account for a substantial portion of our revenue.

We currently derive a significant portion of our revenue from a limited number of licensing partners and government grants and contracts. Accordingly, if we fail to sign additional future contracts with major licensing partners and the government, if a contract is delayed or deferred, or if an existing contract expires or is cancelled and we fail to replace the contract with new business, our revenue would be adversely affected.

On a pro forma basis after taking into account the Merger, during the three months ended March 31, 2009 and the year ended December 31, 2008, Merck accounted for approximately 3% and 12%, respectively, of our consolidated revenue, Wyeth accounted for approximately 6% and 16%, respectively, of our consolidated revenue, and our contract with the NIH National Institute of Allergy and Infectious Diseases accounted for approximately 73% and 0%, respectively, of our consolidated revenue. We expect revenues from Wyeth and Merck to be significantly lower in 2009, as Wyeth evaluates internal strategic options prior to initiating further development of electroporation-based infectious disease programs. Also, we believe that development activities for Merck will be limited for the foreseeable future. Further, Wyeth has recently agreed to be acquired by Pfizer Inc. and Merck has recently agreed to acquire Schering-Plough Corporation. Development and funding priorities may change as a result of these transactions, which may lead to the suspension or termination of our relationships with Wyeth or Merck. Any such suspension or termination would adversely affect our business.

Our quarterly operating results may fluctuate significantly.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expenses related to our human-use equipment, product candidates or future development programs;
- merger integration expenses;
- addition or termination of clinical trials or funding support;
- any intellectual property infringement lawsuit in which we may become involved;

- any legal claims that may be asserted against us or any of our officers;
- regulatory developments affecting our human-use equipment and product candidates or those of our competitors;
- our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements; and
- if any of our products receives regulatory approval, the level of underlying demand for our products.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

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If we are unable to obtain FDA approval of our products, we will not be able to commercialize them in the United States.

We need FDA approval prior to marketing our human-use equipment and products in the United States. If we fail to obtain FDA approval to market our human-use equipment and product candidates, we will be unable to sell our products in the United States, which will significantly impair our ability to generate any revenues.

This regulatory review and approval process, which includes evaluation of pre-clinical studies and clinical trials of our products as well as the evaluation of our manufacturing processes and our third-party contract manufacturers' facilities, is lengthy, expensive and uncertain. To receive approval, we must, among other things, demonstrate with substantial evidence from well-controlled clinical trials that our human-use equipment and product candidates are both safe and effective for each indication for which approval is sought. Satisfaction of the approval requirements typically takes several years and the time needed to satisfy them may vary substantially, based on the type, complexity and novelty of the product. We do not know if or when we might receive regulatory approvals for our human-use equipment and any of our product candidates currently under development. Moreover, any approvals that we obtain may not cover all of the clinical indications for which we are seeking approval, or could contain significant limitations in the form of narrow indications, warnings, precautions or contra-indications with respect to conditions of use. In such event, our ability to generate revenues from such products would be greatly reduced and our business would be harmed.

The FDA has substantial discretion in the approval process and may either refuse to consider our application for substantive review or may form the opinion after review of our data that our application is insufficient to allow approval of our human-use equipment and product candidates. If the FDA does not consider or approve our application, it may require that we conduct additional clinical, pre-clinical or manufacturing validation studies and submit that data before it will reconsider our application. Depending on the extent of these or any other studies, approval of any applications that we submit may be delayed by several years, or may require us to expend more resources than we have available. It is also possible that additional studies, if performed and completed, may not be successful or considered sufficient by the FDA for approval or even to make our applications approvable. If any of these outcomes occur, we may be forced to abandon one or more of our applications for approval, which might significantly harm our business and prospects.

It is possible that none of our products or any product we may seek to develop in the future will ever obtain the appropriate regulatory approvals necessary for us or our collaborators to commence product sales. Any delay in obtaining, or an inability to obtain, applicable regulatory approvals would prevent us from commercializing our products, generating revenues and achieving and sustaining profitability.

Clinical trials involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical studies and early clinical trials of our products may not be predictive of the results of later-stage clinical trials. Human-use equipment and product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through pre-clinical studies and initial clinical testing. The time required to obtain approval by the FDA and similar foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials, depending upon numerous factors. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change. We have not obtained regulatory approval for any human-use products.

Our products could fail to complete the clinical trial process for many reasons, including the following:

- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our human-use equipment and a product candidate is safe and effective for any indication;

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- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate that our human-use equipment and a product candidate's clinical and other benefits outweigh its safety risks;
- we may be unable to demonstrate that our human-use equipment and a product candidate presents an advantage over existing therapies, or over placebo in any indications for which the FDA requires a placebo-controlled trial;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from pre-clinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a new drug application or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of us or third-party manufacturers with which we or our collaborators contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Delays in the commencement or completion of clinical testing could result in increased costs to us and delay or limit our ability to generate revenues.

Delays in the commencement or completion of clinical testing could significantly affect our product development costs. We do not know whether planned clinical trials will begin on time or be completed on schedule, if at all. In addition, ongoing clinical trials may not be completed on schedule, or at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

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- obtaining regulatory approval to commence a clinical trial;
- adverse results from third party clinical trials involving gene based therapies and the regulatory response thereto;
- reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- future bans or stricter standards imposed on gene based therapy clinical trials;
- manufacturing sufficient quantities of our human-use equipment and product candidates for use in clinical trials;
- obtaining institutional review board, or IRB, approval to conduct a clinical trial at a prospective site;
- slower than expected recruitment and enrolment of patients to participate in clinical trials for a variety of reasons, including competition from other clinical trial programs for similar indications;

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- retaining patients who have initiated a clinical trial but may be prone to withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up; and
- collecting, reviewing and analyzing our clinical trial data.

Clinical trials may also be delayed as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;
- unforeseen safety issues; and
- lack of adequate funding to continue the clinical trial.

If we experience delays in completion of, or if we terminate, any of our clinical trials, the commercial prospects for our human-use equipment and our product candidates may be harmed and our ability to generate product revenues will be delayed. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. Further, delays in the commencement or completion of clinical trials may adversely affect the trading price of our common stock.

We and our collaborators rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we and our collaborators may not be able to obtain regulatory approval for or commercialize our product candidates.

We and our collaborators have entered into agreements with CROs to provide monitors for and to manage data for our on-going clinical programs. We and the CROs conducting clinical trials for our human-use equipment and product candidates are required to comply with current good clinical practices, or GCPs, regulations and guidelines enforced by the FDA for all of our products in clinical development. The FDA enforces GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or the CROs conducting clinical trials of our product candidates fail to comply with applicable GCPs, the clinical data generated in the clinical trials may be deemed unreliable and the

FDA may require additional clinical trials before approving any marketing applications.

If any relationships with CROs terminate, we or our collaborators may not be able to enter into arrangements with alternative CROs. In addition, these third-party CROs are not our employees, and we cannot control whether or not they devote sufficient time and resources to our on-going clinical programs or perform trials efficiently. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies or other drug development activities, which could harm our competitive position. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements, or for other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed. Cost overruns by or disputes with our CROs may significantly increase our expenses.

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Even if our products receive regulatory approval, they may still face future development and regulatory difficulties.

Even if U.S. regulatory approval is obtained, the FDA may still impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. This governmental oversight may be particularly strict with respect to gene based therapies. Our products will also be subject to ongoing FDA requirements governing the labeling, packaging, storage, advertising, promotion, recordkeeping and submission of safety and other post-market information. In addition, manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current good manufacturing practices, or cGMP, regulations. If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue Warning Letters or untitled letters;
- impose civil or criminal penalties;
- suspend regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or require us to initiate a product recall.

Even if our products receive regulatory approval in the United States, we may never receive approval or commercialize our products outside of the United States.

In order to market any human-use equipment and product candidates outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks detailed above regarding FDA approval in the United States as well as other risks. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. Failure to obtain regulatory approval in other countries or any delay or setback in obtaining such approval could have the same adverse effects detailed above regarding FDA approval in the United States. Such effects include the risks that our product candidates may not be approved for all indications requested, which could limit the uses of our product candidates and have an adverse effect on their commercial potential or require costly, post-marketing follow-up studies.

We face potential product liability exposure and, if successful claims are brought against us, we may incur substantial liability.

The use of our human-use equipment and product candidates in clinical trials and the sale of any products for which we obtain marketing approval expose us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. If we cannot successfully defend ourselves against product liability claims, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in:

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- decreased demand for our product candidates;
- impairment of our business reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- inability to commercialize our products.

We have obtained product liability insurance coverage for our clinical trials, but our insurance coverage may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. On occasion, large judgments have been awarded in class action lawsuits based on products that had unanticipated side effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our business.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenues.

We currently do not have a sales organization for the marketing, sales and distribution of our human-use equipment and product candidates. In order to commercialize any products, we must build our marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. We contemplate establishing our own sales force or seeking third-party partners to

sell our products. The establishment and development of our own sales force to market any products we may develop will be expensive and time consuming and could delay any product launch, and we may not be able to successfully develop this capability. We will also have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel. To the extent we rely on third parties to commercialize our approved products, if any, we will receive less revenues than if we commercialized these products ourselves. In addition, we may have little or no control over the sales efforts of third parties involved in our commercialization efforts. In the event we are unable to develop our own marketing and sales force or collaborate with a third-party marketing and sales organization, we would not be able to commercialize our product candidates which would negatively impact our ability to generate product revenues.

If any of our products for which we receive regulatory approval does not achieve broad market acceptance, the revenues that we generate from their sales will be limited.

The commercial success of our human-use equipment and product candidates for which we obtain marketing approval from the FDA or other regulatory authorities will depend upon the acceptance of these products by both the medical community and patient population. Coverage and reimbursement of our product candidates by third-party payors, including government payors, generally is also necessary for optimal commercial success. The degree of market acceptance of any of our approved products will depend on a number of factors, including:

- our ability to provide acceptable evidence of safety and efficacy;
- the relative convenience and ease of administration;

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- the prevalence and severity of any adverse side effects;
- limitations or warnings contained in a product's FDA-approved labeling, including, for example, potential "black box" warnings
- availability of alternative treatments;
- pricing and cost effectiveness;
- the effectiveness of our or any future collaborators' sales and marketing strategies;
- our ability to obtain sufficient third-party coverage or reimbursement; and
- the willingness of patients to pay out of pocket in the absence of third-party coverage.

If our human-use equipment and product candidates are approved but do not achieve an adequate level of acceptance by physicians, health care payors and patients, we may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful.

We are subject to uncertainty relating to reimbursement policies which, if not favorable to our product candidates, could hinder or prevent our products' commercial success.

Our ability to commercialize our human-use equipment and product candidates successfully will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors establish appropriate coverage and reimbursement levels for our product candidates and related treatments. As a threshold for coverage and reimbursement, third-party payors generally require that drug products have been approved for marketing by the FDA. Third-party payors also are increasingly challenging the effectiveness of and prices charged for medical products and services. We may not be able to obtain third-party coverage or reimbursement for our products in whole or in part.

Healthcare reform measures could hinder or prevent our products' commercial success.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in health care systems to contain health care costs and improve quality. While reform proposals often involve expanding coverage to more individuals, health care reform may also involve increased government price controls, additional regulatory mandates and other measures designed to lower medical and pharmaceutical costs. Within the United States, the pharmaceutical industry has been a particular focus of both the U.S. Congress, as well as state governments. Proposed reforms include, but are not limited to, increasing regulation of pharmaceutical representatives, restricting direct to consumer advertising and off-label uses, limiting manufacturers' access to marketing data, requiring greater reliance on comparative effectiveness reviews of competing drugs, increasing use of electronic prescribing and authorizing the re-importation of drugs from Canada and other foreign countries to lower pharmaceutical costs to U.S. consumers.

The continuing efforts of the government, insurance companies, managed care organizations and other payors of health care services to contain or reduce costs of health care may adversely affect:

- our ability to set a price we believe is fair for our products;
- our ability to generate revenues and achieve or maintain profitability; and
- the availability of capital.

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If we fail to comply with applicable healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

Certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights may be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business, without limitation. The laws that may affect our ability to operate include:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;
- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent, and which may apply to entities like us which promote pharmaceutical products and may provide coding and billing advice to customers;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;
- the Federal Food, Drug, and Cosmetic Act, which among other things, strictly regulates drug product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Additionally, the compliance environment is changing, with more states, such as California and Massachusetts, mandating implementation of compliance programs, compliance with industry ethics codes, and spending limits, and other states, such as Vermont, Maine, and Minnesota requiring reporting to state governments of gifts, compensation, and other remuneration to physicians. Federal legislation, the Physician Payments Sunshine Act of 2009, has been proposed and is moving forward in Congress. This legislation would require disclosure to the federal government of payments to physicians. These laws all provide for penalties for non-compliance. The shifting regulatory environment, along with the requirement to comply with multiple jurisdictions with different compliance and/or reporting requirements, increases the possibility that a company may run afoul of one or more laws.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

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If we and the contract manufacturers upon whom we rely fail to produce our systems and product candidates in the volumes that we require on a timely basis, or fail to comply with stringent regulations applicable to pharmaceutical drug manufacturers, we may face delays in the development and commercialization of our human-use equipment and product candidates.

We manufacture some components of our electroporation systems and utilize the services of contract manufacturers to manufacture the remaining components of these systems and our product supplies for clinical trials. The manufacture of our systems and product supplies requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers often encounter difficulties in production, particularly in scaling up for commercial production. These problems include difficulties with production costs and yields, quality control, including stability of the equipment and product candidates and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we or our manufacturers were to encounter any of these difficulties or our manufacturers otherwise fail to comply with their obligations to us, our ability to provide our human-use equipment to our partners and products to patients in our clinical trials or to commercially launch a product would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of our clinical trials, increase the costs associated with maintaining our clinical trial program and, depending upon the period of delay, require us to commence new trials at significant additional expense or terminate the trials completely.

In addition, all manufacturers of our products must comply with cGMP requirements enforced by the FDA through its facilities inspection program. These requirements include, among other things, quality control, quality assurance and the generation and maintenance of records and documentation. Manufacturers of our products may be unable to comply with these cGMP requirements and with other FDA, state and foreign regulatory requirements. We have little control over our manufacturers' compliance with these regulations and standards. A failure to comply with these requirements may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval. If the safety of any product is compromised due to our or our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our products, and we may be held liable for any injuries sustained as a result. Any of these factors could cause a delay of clinical trials, regulatory submissions, approvals or commercialization of our products, entail higher costs or result in our being unable to effectively commercialize our products. Furthermore, if our manufacturers fail to deliver the required commercial quantities on a timely basis, pursuant to provided specifications and at commercially reasonable prices, we may be unable to meet demand for our products and would lose potential revenues.

Our failure to successfully acquire, develop and market additional product candidates or approved products would impair our ability to grow.

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We may acquire, in-license, develop and/or market additional products and product candidates. The success of these actions depends partly upon our ability to identify, select and acquire promising pharmaceutical product candidates and products.

The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- exposure to unknown liabilities;

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- disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;
- incurrence of substantial debt or dilutive issuances of securities to pay for acquisitions;
- higher than expected acquisition and integration costs;
- increased amortization expenses;
- difficulty and cost in combining the operations and personnel of any acquired businesses with our operations and personnel;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to retain key employees of any acquired businesses.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

Our business involves the use of hazardous materials and we and our third-party manufacturers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

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Our and our third-party manufacturers' activities involve the controlled storage, use and disposal of hazardous materials, including the components of our product candidates and other hazardous compounds. We and our manufacturers are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. In the event of an accident, state or federal authorities may curtail the use of these materials and interrupt our business operations. If we are subject to any liability as a result of our or our third-party manufacturers' activities involving hazardous materials, our business and financial condition may be adversely affected.

We may be subject to stockholder litigation, which would harm our business and financial condition.

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We may have actions brought against us by stockholders relating to the Merger, past transactions, changes in our stock price or other matters. Any such actions could give rise to substantial damages, and thereby have a material adverse effect on our consolidated financial position, liquidity, or results of operations. Even if an action is not resolved against us, the uncertainty and expense associated with stockholder actions could harm our business, financial condition and reputation. Litigation can be costly, time-consuming and disruptive to business operations. The defense of lawsuits could also result in diversion of our management's time and attention away from business operations, which could harm our business.

We face intense and increasing competition.

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Our competitors and potential competitors include large pharmaceutical and medical device companies and more established biotechnology companies. These companies have significantly greater financial and other resources and greater expertise than us in research and development, manufacturing, pre-clinical and clinical testing, obtaining regulatory approvals and marketing. This may make it easier for them to respond more quickly than us to new or changing opportunities, technologies or market needs. Small companies may also prove to be significant competitors, particularly through collaborative arrangements with large pharmaceutical companies or through acquisition or development of intellectual property rights. Our larger competitors may be able to devote greater resources to research and development, marketing, distribution and other activities that could provide them with a competitive advantage. Many of these competitors operate large, well-funded research and development programs

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and have significant products approved or in development. Our potential competitors also include academic institutions, governmental agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for product and clinical development and marketing.

If we are unable to attract and retain key personnel and advisors, it may adversely affect our ability to obtain financing, pursue collaborations or develop or market our product candidates.

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To pursue our business strategy, we will need to attract and retain qualified scientific personnel and managers, including personnel with expertise in clinical trials, government regulation, manufacturing, marketing and other areas. Competition for qualified personnel is intense among companies, academic institutions and other organizations. If we are unable to attract and retain key personnel and advisors, it may negatively affect our ability to successfully develop, test, commercialize and market our products and product candidates.

Risks Related to Our Intellectual Property

It is difficult and costly to protect our intellectual property and our proprietary technologies, and we may not be able to ensure their protection.

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Our commercial success will depend in part on obtaining and maintaining patent, trademark, trade secret, and other intellectual property protection relating to our human-use equipment and product candidates, as well as successfully defending these intellectual property rights against third-party challenges.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which some important legal principles are ever evolving. There is much inconsistency in the breadth of claims allowed in biotechnology patents to date in the United States. The biotechnology patent situation outside the United States can be even more uncertain depending on the country. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our licensed patents, our patents or in third-party patents, nor can we predict the likelihood of our patents surviving a patent validity challenge.

The degree of future protection for our intellectual property rights is uncertain, because legal decisionmaking can be unpredictable, thereby often times resulting in limited protection, which may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- we, or the parties from whom we have acquired or licensed patent rights, may not have been the first to file the underlying patent applications or the first to make the inventions covered by such patents;
- the named inventors or co-inventors of patents or patent applications that we have licensed or acquired may be incorrect, which may give rise to disputes or invalidate the patents;
- others may independently develop similar or alternative technologies or duplicate any of our products or technologies that may not be covered by our patents, or they may design around our patents;
- pending patent applications may not result in issued patents;
- the issued patents covering our products and technologies may not provide us with any competitive advantages;
- the issued patents may be challenged and invalidated, or rendered unenforceable;
- the issued patents may be subject to reexamination, which could result in a narrowing of the scope of claims or cancellation of claims found unpatentable;
- we may not develop or acquire additional proprietary technologies that are patentable;

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- our trademarks may be invalid or subject to a third party's prior use; or
- our ability to enforce our patent rights will depend on our ability to detect infringement, and litigation to enforce patent rights may not be pursued due to significant financial costs, diversion of resources, and unpredictability of a favorable result or ruling.

We depend, in part, on our licensors and collaborators to protect a portion of our intellectual property rights. In such cases, our licensors and collaborators may be primarily or wholly responsible for the maintenance of patents and prosecution of patent applications relating to important areas of our business. If any of these parties fail to adequately protect these products with issued patents, our business and prospects would be harmed significantly.

We also may rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisors may unintentionally or willfully disclose our trade secrets to competitors. Enforcing a claim that a third-party entity illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we or our licensors fail to obtain or maintain patent protection or trade secret protection for our product candidates or our technologies, third parties could use our proprietary information, which could impair our ability to compete in the market and adversely affect our ability to generate revenues and attain profitability.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in that litigation would have a material adverse effect on our business.

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Other companies may have or may acquire intellectual property rights that could be enforced against us. If they do so, we may be required to alter our technologies, pay licensing fees or cease activities. If our products or technologies infringe the intellectual property rights of others, they could bring legal action against us or our licensors or collaborators claiming damages and seeking to enjoin any activities that they believe infringe their intellectual property rights.

Because patent applications can take many years to issue, there may be currently pending applications unknown to us or reissue applications that may later result in issued patents upon which our products or technologies may infringe. There could also be existing patents of which we are unaware that our products or technologies may infringe. In addition, if third parties file patent applications or obtain patents claiming products or technologies also claimed by us in pending applications or issued patents, we may have to participate in interference proceedings in the U.S. Patent and Trademark Office to determine priority of invention. If third parties file oppositions in foreign countries, we may also have to participate in opposition proceedings in foreign tribunals to defend the patentability of our filed foreign patent applications.

If a third party claims that we infringe its intellectual property rights, it could cause our business to suffer in a number of ways, including:

- we may become involved in time-consuming and expensive litigation, even if the claim is without merit, the third party's patent is ultimately invalid or we are ultimately found to have not infringed;
- we may become liable for substantial damages for past infringement if a court decides that our technologies infringe upon a third party's patent;
- we may be ordered by a court to stop making, selling or licensing our products or technologies without a license from a patent holder, which may not be available on commercially acceptable terms, if at all, or which may require us to pay substantial royalties or grant cross-licenses to our patents; and

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- we may have to redesign our products so that they do not infringe upon others' patent rights, which may not be possible or could require substantial investment or time.

If any of these events occur, our business could suffer and the market price of our common stock may decline.

Risks Related to Our Common Stock

Conversion of the convertible subordinated promissory notes will significantly dilute the ownership interest of existing stockholders, and future sales of our common stock could cause our stock price to decline.

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The conversion of some or all of the convertible subordinated promissory notes would significantly dilute the ownership interests of existing stockholders. Any sales in the public market, or the perception that these sales may occur, of the common stock issuable upon conversion of the notes or of the common stock issued in connection with the Merger could adversely affect prevailing market prices of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

The price of our common stock is expected to be volatile and an investment in our common stock could decline substantially in value.

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In light of our small size and limited resources, as well as the uncertainties and risks that can affect our business and industry, our stock price is expected to be highly volatile and can be subject to substantial drops, with or even in the absence of news affecting our business. The following factors, in addition to the other risk factors described in this prospectus, and the potentially low volume of trades in our common stock, may have a significant impact on the market price of our common stock, some of which are beyond our control:

- developments concerning any research and development, clinical trials, manufacturing, and marketing efforts or collaborations;
- our announcement of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- fluctuations in our operating results
- announcements of technological innovations;
- new products or services that we or our competitors offer;
- the initiation, conduct and/or outcome of intellectual property and/or litigation matters;
- changes in financial or other estimates by securities analysts or other reviewers or evaluators of our business;
- conditions or trends in bio-pharmaceutical or other healthcare industries;
- regulatory developments in the United States and other countries;
- negative perception of gene based therapy;
- changes in the economic performance and/or market valuations of other biotechnology and medical device companies;
- additions or departures of key personnel;

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- sales or other transactions involving our common stock; and
- global unrest, terrorist activities, and economic and other external factors; and
- catastrophic weather and/or global disease pandemics.

The stock market in general has recently experienced relatively large price and volume fluctuations. In particular, the market prices of securities of smaller biotechnology and medical device companies have experienced dramatic fluctuations that often have been unrelated or disproportionate to the operating results of these companies. Continued market fluctuations could result in extreme volatility in the price of the common stock, which could cause a decline in the value of the common stock. In addition, price volatility may increase if the trading volume of our common stock remains limited or declines.

Our common stock may be delisted from the NYSE Amex.

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Our common stock may be delisted from the NYSE Amex for our failure to comply with the applicable listing requirements. Such an action may reduce the liquidity of, and may adversely affect the price of, our common stock.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock.

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Our amended and restated certificate of incorporation contains provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- the authority of our board of directors to issue shares of undesignated preferred stock and to determine the rights, preferences and privileges of these shares, without stockholder approval;
- all stockholder actions must be effected at a duly called meeting of stockholders and not by written consent; and
- the elimination of cumulative voting.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors, including to delay or impede a merger, tender offer or proxy contest involving our company. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

We have never paid cash dividends on our common stock and we do not anticipate paying dividends in the foreseeable future.

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We have paid no cash dividends on our common stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any future debt or credit facility may preclude or limit our ability to pay any dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

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This prospectus and the documents incorporated by reference into this prospectus contain certain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 with respect to our financial condition, results of operations and business. Words such as anticipates, expects, intends, plans, predicts, believes, seeks, estimates, could, would, will, potential, should, and the negative of these terms or other comparable terminology often identify forward-looking statements. Statements in this prospectus and the other documents incorporated by reference that are not historical facts are hereby identified as forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act. These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this prospectus, in our Annual Report on Form 10-K for fiscal year ended December 31, 2008 in Item 1A under Risk Factors and the risks detailed from time to time in our future SEC reports. Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this prospectus or, in the case of documents incorporated by reference, as of the date of such documents. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

USE OF PROCEEDS

We will receive no proceeds from the resale of the shares of common stock by or for the account of the selling stockholders.

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SELLING STOCKHOLDERS

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The shares of common stock being offered by the selling stockholders are those issuable to the selling stockholders upon conversion of outstanding convertible subordinated promissory notes. For additional information see Convertible Subordinated Promissory Notes below. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for the convertible subordinated promissory notes and the securities issued to certain of the selling stockholders in connection with the transactions contemplated by the Amended and Restated Agreement and Plan of Merger dated December 5, 2008 (the Merger Agreement) by and among us, Inovio Acquisition, LLC and VGX Pharmaceuticals, Inc., the selling stockholders have not had any material relationship with us within the past three years. Unless otherwise indicated, the address of the individuals and entities listed below is c/o Inovio Biomedical Corporation, 11494 Sorrento Valley Road, San Diego, CA 92121.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, based on its ownership of the convertible subordinated promissory notes, as of June 18, 2009, assuming conversion of all convertible subordinated promissory notes held by the selling stockholders on that date.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholders. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

The selling stockholders may sell all, some or none of their shares in this offering. See Plan of Distribution.

| Name of Selling Stockholder | Number of Shares of Common Stock Owned Prior to Offering | Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus | Number of Shares of Common Stock Owned After Offering |
|-----------------------------|--|---|---|
| Hyun Soo Kim (1) | 525,524 | 361,990 | 163,534 |
| Esseltech Co., Ltd. (2) | 1,904,762 | 1,904,762 | |
| Youn Jin Kim (3) | 2,574,182 | 2,416,208 | 157,974 |
| Thomas Edington (4) | 570,140 | 105,140 | 456,258 |

(1) We have been advised that this selling stockholder is not a broker-dealer or an affiliate of a broker-dealer.

(2) Mr. Go Jin Yeob has voting and investment control over the shares of our common stock held by Esseltech. We have been advised that this selling stockholder is not a broker-dealer or an affiliate of a broker-dealer.

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- (3) We have been advised that this selling stockholder is not a broker-dealer or an affiliate of a broker-dealer.
- (4) Includes 105,000 shares held by Molecular Biology Consultants and 100,000 shares underlying options that are exercisable within 60 days of June 18, 2009 held by Molecular Biology Consultants. Mr. Edington is a managing member of Molecular Biology Consultant and has voting and investment control over the shares of our common stock held by this entity. Also includes 260,000 shares held by Trust B under the Thomas S. and Joanne R. Eddington trust dated December 1, 1981. Mr. Edington is the trustee of this trust. We have been advised that this selling stockholder is not a broker-dealer or an affiliate of a broker-dealer.

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PLAN OF DISTRIBUTION

We are registering the shares of common stock issuable upon conversion of the convertible subordinated promissory notes to permit the resale of these shares of common stock by the holders of the convertible subordinated promissory notes from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions,

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;

- privately negotiated transactions;
- short sales;
- sales pursuant to Rule 144;
- broker-dealers may agree with the selling securityholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn

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engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

The selling stockholders may pledge or grant a security interest in some or all of the convertible subordinated promissory notes or shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be underwriters within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock, estimated to be \$34,743 in total, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or blue sky laws; provided, however, that a selling stockholder will pay all underwriting discounts and selling commissions, if any.

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Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

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CONVERTIBLE SUBORDINATED PROMISSORY NOTES

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On June 1, 2009, we consummated the transactions contemplated by the Merger Agreement. VGX Pharmaceuticals, Inc. had an aggregate of \$4,400,000 in principal amount of convertible subordinated promissory notes, and an aggregate of \$627,499.34 in accrued and unpaid interest on such notes, outstanding. Pursuant to the Merger Agreement, the convertible subordinated promissory notes became convertible into an aggregate of 4,788,100 shares of our Common Stock.

The convertible subordinated promissory notes and the shares of Common Stock issuable upon conversion of such notes have not been and will not be registered under the Securities Act, and may not be offered or sold absent registration or an applicable exemption from the registration requirements of the Securities Act. The convertible subordinated promissory notes and the shares of Common Stock issuable upon conversion of such notes have been and will be issued in reliance upon exemptions under Section 4(2) of the Securities Act and Regulation D thereunder.

The total dollar value of the shares of our common stock underlying the convertible subordinated promissory notes is \$5,027,505 (based on the fixed conversion price of \$1.05 per share).

The material terms of the convertible subordinated promissory notes are summarized as follows:

- Pursuant to the terms of the Merger Agreement, (i) the convertible subordinated promissory notes became obligations of our wholly-owned subsidiary VGX Pharmaceuticals, LLC, and (ii) the convertible subordinated promissory notes became convertible into shares of our Common Stock.
- The interest rate is 5% per annum.
- The final maturity date of the notes is December 30, 2010, unless earlier converted or redeemed.
- The notes are convertible at the selling stockholders' option into our common stock; the notes will be automatically converted into our common stock in the event that our common stock trades at or above \$2.10 per share for five consecutive trading days.
- The conversion price of the notes is \$1.05 per share.
- The notes are subordinated in right and time of payment to the payment in full of all senior indebtedness. Further, so long as any senior indebtedness is outstanding (i) the holders of the notes may not demand payment of any principal amount; (ii) no accrued interest shall be paid on the notes; (iii) the notes shall be unsecured; (iv) the holders of the notes may not take any action with respect to collection or enforcement under the notes or exercise any remedies the holders may have under the notes. Senior indebtedness means all present and future obligations in respect of borrowed money, or from any bank or other financial institution, which obligations are secured by any of the borrower's assets.

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- Repayment of all principal and interest under the notes will be accelerated and shall be immediately due in full upon an event of default.

We intend to cause VGX Pharmaceuticals, LLC to make all payments due on the convertible subordinated promissory notes when due, and believe that VGX Pharmaceuticals, LLC will have the financial ability to do so.

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LEGAL MATTERS

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The validity of the issuance of the shares of common stock offered by this prospectus will be passed upon for us by Morrison & Foerster LLP, San Diego, California.

EXPERTS

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Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2008, as set forth in their report, which is incorporated by reference in this preliminary prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

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This prospectus is part of a registration statement on Form S-3 that we filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with the rules of the SEC. We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. Our SEC filings are also available at the SEC's website at www.sec.gov. We maintain a website at www.inovio.com. Information contained in or accessible through our website does not constitute part of this prospectus and you should not rely on that information in deciding whether to invest in our common stock, unless that information is also in or incorporated by reference in this prospectus.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

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The SEC allows us to incorporate by reference information that we file with it into our registration statement on Form S-3 of which this prospectus is a part, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus.

We incorporate by reference into this registration statement and prospectus the documents listed below, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus (other than Current Reports or portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed with the SEC on March 31, 2009;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2009 filed with the SEC on May 14, 2009;
- our Current Reports on Form 8-K filed with the SEC on February 6, 2009, March 26, 2009, March 31, 2009, April 8, 2009, May 1, 2009, May 18, 2009 and June 2, 2009 (as amended by a Form 8-K/A filed on June 16, 2009); and
- the description of our common stock contained in our registration statement filed under Section 12 of the Exchange Act, as modified by our Current Report on Form 8-K filed June 18, 2009.

You may obtain a copy of these filings at no cost, by writing or by telephoning us at the following address or telephone number:

Punit Dhillon

Inovio Biomedical Corporation

11494 Sorrento Valley Road

San Diego, California 92121

(858) 597-6006

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus or in any subsequently filed document that also is or is deemed to be incorporated by reference in this prospectus modifies, supersedes or replaces such statement. Any statement so modified, superseded or replaced, will not be deemed, except as so modified, superseded or replaced, to constitute a part of this prospectus.