INOVIO BIOMEDICAL CORP
Form 424B5
August 06, 2007

FILED PURSUANT TO RULE 424(b)(5)

FILE NO. 333-134084

PROSPECTUS SUPPLEMENT NO. 5

(To Prospectus dated May 25, 2006)

**INOVIO BIOMEDICAL CORPORATION**

**Up to 230,000 Shares of Common Stock**

**Warrants to Purchase up to 150,000 Shares of Common Stock**

**150,000 shares of Common Stock**
**issuable upon exercise of the Warrants**

We are offering a minimum of 115,000 shares of our common stock, warrants to purchase up to 75,000 shares of our common stock and 75,000 shares of our common stock issuable upon exercise of the offered warrants, and a maximum of 230,000 shares of our common stock, warrants to purchase up to 150,000 shares of our common stock and 150,000 shares of our common stock issuable upon exercise of the offered warrants pursuant to this prospectus supplement and the accompanying prospectus to a professional advisor to companies in the life sciences industry, which we have engaged on a non-exclusive basis for the purpose of identifying opportunities for the license or sale of all or part of one of our therapy programs, advising us concerning opportunities for such license or sale, and, if we so request, participating on our behalf in negotiations concerning such license or sale. We are issuing and selling our common stock in consideration and satisfaction of our obligation to pay the advisor a non-refundable retainer of a minimum of 115,000 shares of our common stock and 75,000 warrants to purchase shares of our common stock, if our engagement of our advisor is terminated prior to provision of the advisor s initial periodic report pursuant to the terms of its engagement, and a maximum of 230,000 shares of our common stock and 150,000 warrants to purchase shares of our common stock if our engagement of the advisor is not terminated prior to receipt of the advisor s initial periodic report.

We are accounting for the issuance and sale of the shares of common stock to the advisor at $2.28 per share, equal to market value of the shares on the date of execution of the engagement agreement. The warrants will be exercisable at an exercise price of $3.00 per share for five years from the date of issuance. Because of contractual transfer restrictions applicable to the warrants, no public trading market is expected to develop for the warrants. For additional information concerning the issuance of our common stock, warrants and the shares of common stock issuable upon exercise of the warrants pursuant to this prospectus supplement, please see Plan of Distribution beginning on page S-8 of this prospectus supplement.

Our common stock is traded on the American Stock Exchange, or AMEX, under the symbol INO. On August 3, 2007, the last reported sale price of our common stock on AMEX was $2.28 per share.

We will not be paying any underwriting discounts or commissions in this offering. We expect total offering expenses to be approximately $15,000 for the sale of the securities pursuant to this prospectus supplement.

**Purchase of the common stock involves a high degree of risk. See Risk Factors beginning at page 3 of the accompanying prospectus and on page S-4 this prospectus supplement.**

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.

We expect to deliver 115,000 of our shares of common stock and warrants to purchase 75,000 shares of our common stock to our advisor within three business days of receipt of approval from AMEX of the listing of the shares of common stock and the shares issuable upon exercise of the warrants on AMEX. If our engagement of the advisor is not terminated prior to the receipt of the advisor s first periodic report, due within thirty days of the execution of the engagement agreement, we expect to deliver an additional 115,000 shares of common stock and warrants to purchase 75,000 shares of common stock to our advisor within five business days of the receipt of the first periodic report. If our engagement of the advisor is terminated prior to receipt of the advisor s first periodic report, we will cancel and return to the status of authorized and unissued common stock, the 115,000 of shares of our common stock, and will cancel the warrants to purchase 75,000 shares of our common stock, that

we would have otherwise delivered to our advisor upon delivery of the first periodic report.

The date of this prospectus supplement is August 3, 2007.

**You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information. You should assume that the information appearing in this prospectus supplement is accurate only as of the date on the front cover of this prospectus supplement. Our business, financial condition, results of operations and prospects may have changed since that date.**

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**Prospectus Supplement**



**Prospectus**

**THE OFFERING**

| | |
|---|---|
| Common Stock offered | A minimum of 115,000 shares and a maximum of 230,000 shares |
| Common Stock outstanding after this offering | • 43,781,434 shares, if the maximum number of shares issuable in accordance with this prospectus supplement is delivered to the advisor; and<br><br>• 43,666,434, if our agreement with our advisor is terminated before prior to the receipt by the Company of the advisor s first periodic report, due within thirty days of the execution of the engagement agreement. As we have issued an aggregate of 230,000 of our shares in connection with the engagement of our advisor and are holding 115,000 of those shares pending determination of whether that engagement will terminate before the required delivery of such shares within five business days of our receipt of the first periodic report from its advisor, pending that determination, we will have outstanding 43,666,434 shares of our common stock. |
| Common Stock underlying Warrants offered | A minimum of 75,000 shares and a maximum of 150,000 shares |
| Use of proceeds | We are issuing up to 230,000 shares of common stock and warrants to purchase up to 150,000 shares of common stock in consideration and in satisfaction of a non-refundable retainer we are obligated to pay to an advisor. The proceeds received upon exercise of the warrants will be used for general corporate purposes and working capital, including for clinical trials expenses, research and development, general and administrative expenses, manufacturing and potential acquisitions of companies and technologies that complement our business. |
| AMEX Symbol | INO |

The number of shares of common stock shown above to be outstanding after this offering is based on 43,551,434, the number of shares of our common stock outstanding on August 2, 2007 and excludes shares issuable upon exercise of outstanding warrants or options or upon conversion of our outstanding convertible preferred stock and assumes no additional issuances of our common stock before the complete delivery of the common stock offered by this prospectus supplement.

## ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering. The second part is the accompanying prospectus, which gives more general information, some of which may not apply to this offering. If the description of this offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information in this prospectus supplement. **In addition, you should review the risks of investing in our common shares discussed beginning on page 3 of the accompanying prospectus and immediately below in this prospectus supplement prior to making an investment decision.**

We incorporate important information into this prospectus supplement and the accompanying prospectus by reference to our SEC filings. You may request a copy of these filings, at no cost, upon request Shareholder Relations at Inovio Biomedical Corporation, 11494 Sorrento Valley Road, San Diego, CA 92121-1318, telephone number (858) 597-6006.

## RISK FACTORS

*You should carefully consider and evaluate all of the information in this prospectus supplement in combination with the more detailed description of our business and the risk factors set forth in our annual report on Form 10-K for the year ended December 31, 2006, which we filed with the Securities and Exchange Commission on March 16, 2007, and in our quarterly report on Form 10-Q for the three months ended March 31, 2007 we filed with the Securities and Exchange Commission on May 9, 2007, for a more complete understanding of the risks associated with an investment in our securities. The following risk factors are not the only risks that could potentially face our company. Additional issues not now known to us or that we may currently deem immaterial may also impair our ability to commercialize our technology and the therapies we believe are derivable therefrom resulting in our business outlook being compromised and the trading price of our common stock declining.*

**We May Receive Nothing of Material Significance to Our Business By The Engagement of the Advisor To Which We Are Issuing the Securities In Accordance With This Prospectus Supplement.**

We are issuing our securities to an advisor to companies in the life sciences industry as a non-refundable retainer in connection with the our engagement of the advisor for the purpose of identifying opportunities for the license or sale of all or part of one of our therapy programs, advising us concerning opportunities for such license or sale, and, if we so request, participating on our behalf in negotiations concerning such license or sale. We may receive no tangible benefit from this engagement whether or not the advisor performs its engagement as agreed. Regardless of any benefit we receive from this engagement, if we or our advisor terminate the advisor s engagement before we receive the advisor s first periodic report, due within thirty days of the execution of the engagement agreement, we will still incur an expense of at least $378,144, plus all legal and other expenses we incurred in connection with the preparation of the engagement agreement with the advisor, the preparation of this prospectus supplement and other offering expenses. If our engagement with the advisor is not terminated before we receive the advisor s first periodic report, we will incur an expense of at least $756,288 attributable to the non-refundable retainer we are paying the advisor in the form of the shares of common stock and warrants we are issuing to it, plus all legal and other expenses we incurred in connection with the preparation of the engagement agreement with the advisor, the preparation of this prospectus supplement and other offering expenses.

**Sales of Substantial Amounts of Our Shares, or Even the Availability of Our Shares for Sale, in the Open Market Could Cause the Market Price of our Shares to Decline.**

The accompanying prospectus and this prospectus supplement are part of a so-called shelf registration statement under which we have registered with the Securities and Exchange Commission, or the SEC, up to an aggregate of $75,000,000 of our equity securities that we may issue from time to time, in one or more offerings at prices and on terms that we will determine at the time of each offering. Under that registration statement, we have registered multiple kinds of our equity securities, including our common stock, preferred stock, warrants and a combination of these securities, or units. Prior to this offering, we have taken-down from our shelf registration statement, and issued and sold, an aggregate of 8,805,378 shares of our common stock valued at $26,374,719 and warrants to purchase up to 1,425,919 shares of our common stock valued at $4,092,388 and, if those warrants are fully exercised, we will have issued an additional 1,425,919, shares of our common stock under that shelf registration statement. In other words, the shares of common stock we have sold in offerings from our shelf registration statement prior to this offering represent approximately 35% of the value of the aggregate equity securities from our shelf registration statement (41% if the warrants we have sold from our shelf registration statement are fully exercised). Upon completion of the sale and issuance of the maximum securities offered via this prospectus supplement, we will have issued and sold, an aggregate of 9,035,378 shares of our common stock valued at $26,899,119 and warrants to purchase up to 1,575,919 shares of our common stock valued at $4,324,277 and, if those warrants are fully exercised, we will have issued an additional 1,575,919 shares of our common stock under that shelf registration statement. Thereafter, the shares of common stock we have sold in offerings from our shelf registration statement subsequent to this offering will represent approximately 36% of the value of the aggregate equity securities from our shelf registration statement (42% if the warrants we have sold from our shelf registration statement are fully exercised). While that amount is a relatively small percentage of our outstanding shares of common stock at August 2, 2007 (approximately 24%), future issuances and sales of our common stock or securities exercisable for or convertible into our common stock

pursuant to our existing shelf registration statement, if in substantial

numbers, and even the availability for issuance of the securities registered under our shelf registration statement, could adversely effect the market price of our shares.

In addition to the shares and warrants we have issued from our shelf registration statement, we have also issued 2,201,644 shares of our common stock and 938,475 warrants to purchase up to 938,475 shares of our common stock in other recent offerings. Sales of substantial amounts of our stock at any one time or from time to time by the investors to whom we have issued them, or even the availability of these shares for sale, could cause the market price of our common stock to decline.

**If We Are Unable To Develop Commercially Successful Products, Including Our Selective Electrochemical Tumor Ablation (SECTA) Therapy, In Various Markets For Multiple Indications, Particularly For The Treatment Of Head & Neck and Skin Cancers, Our Business Will Be Harmed And We May Be Forced To Curtail Or Cease Operations.**

Our Selective Electrochemical Tumor Ablation (SECTA) therapy uses bleomycin sulfate delivered intratumorally using our proprietary MedPulser® electroporation system. Our ability to achieve and sustain operating profitability depends on our ability, directly or with strategic partners, to successfully commercialize our SECTA therapy in Europe and in the US for use in treating solid tumors, particularly for the treatment of head and neck cancer, and other indications. This will depend in large part on our ability to commence, execute and complete clinical programs and obtain regulatory approvals for our SECTA therapy. While we have received various regulatory approvals in Europe for use of SECTA in treating solid tumors, the products related to such regulatory approval have not yet been commercialized. The FDA has been notified that most of our study population will be from non-English speaking sites in Eastern Europe whose outcome data may be considered to be unlike the United States, Canada and Western Europe. Further clinical trials are still necessary before we can seek regulatory approval to sell our products in the United States for treating solid tumors. We cannot assure you we will receive approval for our SECTA therapy for the treatment of head and neck cancer or other types of cancer or indications in the United States or in other countries or, if approved, that we or a partner will achieve a significant level of sales. If we fail to partner or commercialize our products, we may be forced to curtail or cease operations.

We have completed additional clinical studies of SECTA in different indications, such as our Phase I/II breast cancer, and are also in the pre-clinical stages of research and development with other new product candidates using our electroporation technology. These new indications and product candidates will require significant costs to advance through the development stages. Even if such product candidates are advanced through clinical trials, the results of such trials may not gain FDA approval. Even if approved, our products may not be commercially successful.

We cannot assure you that we will successfully develop any products. If we fail to develop or successfully commercialize any products, we may be forced to curtail or cease operations. Additionally, much of the commercialization efforts for our products must be carried forward by a licensing partner. To date our business plan for the SECTA therapy has been focused on generating a set of clinical data across multiple indications to aid in securing a marketing and sales partner and further characterize the therapy s clinical benefits, cost savings, and profit potential necessary to make this product viable and attractive to a partner to take it to the marketplace. Management s primary goal for SECTA is to secure an industry partner capable of launching the SECTA product, with the European market the initial priority. Although discussions with multiple partner candidates are in progress, we may not be able to obtain such a partner. In an alternative approach, we will consider an agreement with a financial partner pursuant to which we would contemplate creating an operating entity, to be funded and staffed independently of Inovio Biomedical, with a mandate and certain resources to commercialize SECTA, which would allow us to retain ownership in the entity but minimize Inovio s ongoing capital obligations for the commercialization efforts. Our management intends to work diligently in an effort to secure a suitable partnerhsip deal to advance commercialization of the SECTA therapy.

**Pre-Clinical And Clinical Trials Of Human-Use Equipment Are Unpredictable, And If We Experience Unsuccessful Trial Results, Our Business Will Suffer.**

Before any of our human-use equipment can be sold, the FDA or applicable foreign regulatory authorities must determine that the equipment meets specified criteria for use in the indications for which approval is requested, including obtaining appropriate regulatory approvals. Satisfaction of regulatory requirements typically takes many years, and involves compliance with requirements covering research and development, testing, manufacturing, quality control, labeling and promotion of drugs for human use. To obtain regulatory approvals, we must, among other requirements, complete clinical trials demonstrating that our product candidates are safe and effective for a particular cancer type or other disease. Regulatory approval of a new drug is never guaranteed. The FDA will make this determination based on the results from our pre-clinical testing and clinical trials and has substantial discretion in the approval process. Despite the time and experience exerted, failure can occur at any stage, and we could encounter problems causing us to abandon clinical trials.

The intended purpose of our SECTA therapy is to provide treated patients with quality of life benefits compared to the use of surgery, with equivalency in terms of local tumor control and survival. Our multiple clinical studies in several different cancer indications seek evidence reflecting this intended purpose. We have now completed enrollment of 13 patients in the FDA-approved Phase I/II clinical study of recurrent breast cancer patients. We have also completed enrollment of 92 patients in a European pre-marketing study of head and neck cancer patients.

We are also enrolling patients in a European pre-marketing study

of patients with skin cancer. The protocol allows for up to 100 patients to be treated. For the benefit of concurrently analyzing data from multiple clinical studies and additional strategic reasons such as partnering, the company may decide to stop enrollment prior to enrolling 100 patients to expedite analysis of the data in this open label trial. Each cancer indication is the subject of a separate clinical development program owing to the unique and different clinical and biological attributes of each type of cancer the company is evaluating. We have also completed Phase II clinical trials for the treatment of recurrent and second primary head and neck cancers.

However, current or future clinical trials may demonstrate the SECTA therapy is neither safe nor effective, and some clinical trials planned or in progress may not be completed as we initially intended. On June 5, 2007, we announced that we had stopped enrollment of patients in Phase III clinical studies designed to evaluate the use of our SECTA therapy as a treatment for resectable recurrent and second primary squamous cell carcinomas of the head and neck (SCCHN), based on a recommendation from the trial s independent data monitoring committee (DMC). The studies were accruing North American and European patients with tumors in the anterior and posterior areas of the oral cavity. The primary endpoint of these two Phase III trials was preservation of function status at four and eight months as measured by the Performance Status Scale (which assesses the ability of a patient to eat normal foods, speak understandably, and eat in public). The DMC expressed concern about efficacy and serious adverse events, including higher mortality rates on the SECTA arm of the study than on the surgery arm. In the DMC s opinion, although no single parameter was sufficient to warrant recommending a review of the trial, the totality of data for the recurrent head and neck cancer study suggested an unfavorable benefit-to-risk profile for the SECTA arm relative to the surgery arm. The DMC also noted that slow enrollment presented a possible challenge in meeting the patient enrollment goals of each of these two trials, but that, if timely enrollment could allow reaching the target of 400 patients in the combined trials, this would provide enhanced insights regarding the benefit-to-risk profile of the SECTA treatment. Without conducting further analysis, we stopped enrollment to allow the company to conduct its own interim analysis of the unaudited and unblinded data on the 212 patients enrolled to date.

We currently have five ongoing clinical studies of our SECTA therapy in patients with head and neck, cutaneous/subcutaneous, and breast cancer. In each study, patients are potentially at a high risk of morbidity complications and mortality due to the nature and late stage of their disease. The following serious adverse events (SAEs) were related to treatment with our SECTA therapy have been reported during these clinical studies: sudden death (suspected heart attack), sudden death (suspected internal bleeding), sudden death (unknown cause), hemorrhage, obstruction of the airway (pharynx/nasopharynx), edema, pain, weight loss (anorexia) and carotid artery injury. The parties conducting these studies need to carefully manage such safety issues as bleeding is a potential SAE that can occur anytime until the wound is healed. Because our studies are controlled and ongoing, and thus we do not have full access to the developing clinical data from such studies, we cannot assure you that these or other SAEs will not disrupt or otherwise delay or prevent the completion of such studies or the approval of our product by the FDA.

In addition, any of our clinical trials for treatment using our SECTA therapy may be delayed or halted at any time for various other reasons, including:

- The electroporation-mediated delivery of drugs or other agents may be found to be ineffective or be considered to cause harmful side effects, including death;

- Our clinical trials may take longer than anticipated for any of a number of reasons, including a scarcity of subjects that meet the physiological or pathological criteria for entry into the study and a scarcity of subjects that are willing to participate through the end of the trial, or follow-up visits;

- The reported clinical data may change over time as a result of the continuing evaluation of patients or the current assembly and review of existing clinical and pre-clinical information;

- Data from various sites participating in the clinical trials may be incomplete or unreliable, which could result in the need to repeat the trial or abandon the project; and

- Pre-clinical and clinical data can be interpreted in many different ways, and the FDA and other regulatory authorities may interpret our data differently than we do, which could halt or delay our clinical trials or prevent regulatory approval.

If any of the above events arise during our clinical trials or data review, we would expect this to have a serious negative impact on our company. Any termination of ongoing enrollment or other delay or change in the conduct of our clinical trials may not always be understood or accepted by the capital markets and announcements of such scientific results and related actions may adversely affect the market price of our common stock.

Any delays or difficulties we have encountered or will encounter in our pre-clinical research and clinical trials, in particular the Phase III clinical trials of our SECTA therapy for the treatment of recurrent head and neck cancer, may delay or preclude regulatory approval. Our product development costs will increase if we experience delays in testing or regulatory approvals or if we

need to perform more extensive or larger clinical trials than planned. Any such events could also delay or preclude the commercialization of our SECTA therapy or any other product candidates.

Clinical trials are unpredictable, especially human-use trials. Results achieved in early stage clinical trials may not be repeated in later stage trials, or in trials with more patients. When early positive results were not repeated in later stage trials, pharmaceutical and biotechnology companies have suffered significant setbacks. Not only are commercialization timelines pushed back, but some companies, particularly smaller biotechnology companies with limited cash reserves, have discontinued business after releasing news of unsuccessful clinical trial results. We cannot be certain the results we observed in our pre-clinical testing will be confirmed in clinical trials or the results of any of our clinical trials will support FDA approval. If we experience unexpected, inconsistent or disappointing results in connection with a clinical or pre-clinical trial our business will suffer.

Despite the FDA s designation of our SECTA therapy as a Fast Track product, such FDA designation is independent of the FDA s Priority Review and Accelerated Approval designations and we may encounter delays in the regulatory approval process due to additional information requirements from the FDA, unintentional omissions from our PMA for our SECTA therapy, or other delays in the FDA s review process. We may encounter delays or rejections in the regulatory approval process because of additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review.

A majority of our operating expenses relate to our clinical trials. A delay in our clinical trials, for whatever reason, will probably require us to spend additional funds to keep our product(s) moving through the regulatory process. If we do not have or cannot raise additional funds, then the testing of our human-use products could be discontinued. In the event our clinical trials are not successful, we will have to determine whether to continue to fund our programs to address the deficiencies, or whether to abandon our clinical development programs for our products in tested indications. Loss of our human-use product line would be a significant setback for our company.

Because there are so many variables inherent in clinical trials, we cannot predict whether any of our future regulatory applications to conduct clinical trials will be approved by the FDA or other regulatory authorities, whether our clinical trials will commence or proceed as planned, and whether the trials will ultimately be deemed to be successful. To date, our experience has been that submission and approval of clinical protocols has taken longer than desired or expected.

**We Cannot Predict The Safety Profile Of The Use Of Our MedPulser® Electroporation Therapy System When Used In Combination With Other Therapies.**

Our current oncology trials involve the use of our SECTA therapy which consists of our MedPulser® electroporation therapy system in combination with bleomycin sulfate, an anti-cancer drug. While the data we have evaluated to date suggest the SECTA therapy does not increase the adverse effects of other therapies, we cannot predict if this outcome will continue to be true or whether possible adverse side effects directly attributable to other drugs will compromise the safety profile of our SECTA therapy when used in certain combination therapies or if used off-label with other drugs by physicians.

## USE OF PROCEEDS

We are issuing up to 230,000 shares of common stock and warrants to purchase up to 150,000 shares of common stock in consideration and in satisfaction of a non-refundable retainer we are obligated to pay to an advisor for the purpose of identifying opportunities for the license or sale of all or part of one of our therapy programs, advising us concerning opportunities for such license or sale, and, if we so request, participating on our behalf in negotiations concerning such license or sale. The proceeds received upon exercise of the warrants will be used for general corporate purposes and working capital, including for clinical trials expenses, research and development, general and administrative expenses, manufacturing and potential acquisitions of companies and technologies that complement our business.

We will not be paying any underwriting discounts or commissions in this offering. We expect total offering expenses to be approximately $15,000 for the sale of the securities pursuant to this prospectus supplement.

## PLAN OF DISTRIBUTION

We are offering a minimum of 115,000 shares of our common stock, warrants to purchase up to 75,000 shares of our common stock and 75,000 shares of our common stock issuable upon exercise of the offered warrants, and a maximum of 230,000 shares of our common stock, warrants to purchase up to 150,000 shares of our common stock and 150,000 shares of our common stock issuable upon exercise of the offered warrants pursuant to this prospectus supplement and the accompanying prospectus to Asia Life Sciences Venture Consulting Inc., or ALVC, a professional advisor to companies in the life sciences industry that we have engaged on an exclusive basis for the purpose of identifying opportunities for the license or sale of all or part of one of our therapy programs, advising us concerning opportunities for such license or sale, and, if we so request, participating on our behalf in negotiations concerning such license or sale. We are issuing and selling our common stock in consideration and satisfaction of our obligation to pay ALVC a non-refundable retainer of a minimum of 115,000 shares of our common stock and 75,000 warrants to purchase shares of our common stock, if our engagement of ALVC is terminated prior to provision of ALVC s initial periodic report pursuant to the terms of its engagement, and a maximum of 230,000 shares of our common stock and 150,000 warrants to purchase shares of our common stock if our engagement of ALVC is not terminated prior to receipt of the advisor s initial periodic report.

We expect to deliver 115,000 of our shares of common stock and warrants to purchase 75,000 shares of our common stock to ALVC within three business days of receipt of approval from AMEX of the listing of the shares of common stock and the shares issuable upon exercise of the warrants on AMEX. Pursuant to the terms of its engagement agreement, ALVC is obligated to provide us with periodic reports on a regular basis, but no less frequently than once every 30 calendar days, with respect to parties it has contacted and parties that have contacted it in connection with the possible license or sale of one of our therapy programs. ALVC is obligated to deliver its initial periodic report no sooner than the first business day after our receipt of approval for listing of the shares of common stock and share issuable upon exercise of the warrants from AMEX, and no later than the thirtieth day after execution of the engagement agreement. If our engagement of ALVC is not terminated prior to our receipt of ALVC s first periodic report, we expect to deliver an additional 115,000 shares of common stock and warrants to purchase 75,000 shares of common stock to ALVC within five business days of the receipt of the first periodic report. If ALVC s engagement is terminated prior to receipt of the first periodic report, we will cancel and return to the status of authorized and unissued common stock, the 115,000 of shares of our common stock, and will cancel the warrants to purchase 75,000 shares of our common stock, that we would have otherwise delivered to our advisor upon delivery of the first periodic report.

We are accounting for the issuance and sale of the shares of common stock to the advisor at $2.28 per share, equal to market value of the shares on the date of execution of the engagement agreement. The warrants will be exercisable at an exercise price of $3.00 per share for five years from the date of issuance. Because of contractual transfer restrictions applicable to the warrants, no public trading market is expected to develop for the warrants.

From July 3, 2007 until 48 hours after the earlier of the delivery of the second tranche of shares of common stock and warrants pursuant to the engagement agreement or termination of the engagement agreement, ALVC has agreed that neither it nor its principals, managers, members, or affiliates has engaged or will engage in any short selling of our stock. Short selling (or selling short ) is a technique used by investors who try to profit from the falling price of a stock. Short selling involves borrowing a security from a broker and selling it with the understanding that it must later be bought back (hopefully at a lower price) and returned to the broker.

We have agreed to reimburse ALVC upon request for its reasonable professional and legal fees incurred in connection with its engagement. We expect total offering expenses to be approximately $15,000 for the sale of the shares, warrants and shares underlying the warrants pursuant to this prospectus supplement. We have also agreed to indemnify ALVC and hold it harmless against any and all losses, claims, damages or liabilities to which ALVC may become subject arising in any manner out of or in connection with the rendering of services by ALVC under our engagement agreement with ALVC.

ALVC may be an underwriter of the shares of common stock that we are issuing and selling to it in accordance with this prospectus supplement.

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**LEGAL MATTERS**

The validity of the issuance of the shares offered in this prospectus has been passed upon for us by Kirkpatrick & Lockhart Preston Gates Ellis LLP, Los Angeles, California.

**PROSPECTUS**

**$75,000,000**

**Inovio Biomedical Corporation**

**By this prospectus, we may offer, from time to time**

- Common Stock
- Preferred Stock
- Warrants
- Units

We may from time to time, in one or more offerings at prices and on terms that we will determine at the time of each offering, sell common stock, preferred stock, warrants or a combination of these securities, or units, for an aggregate initial offering price of up to $75,000,000. This prospectus describes the general manner in which our securities may be offered using this prospectus. Each time we offer and sell securities, we will provide you with a prospectus supplement that will contain specific information about the terms of that offering.

This prospectus may not be used to offer and sell securities unless accompanied by a prospectus supplement.

Our common stock is currently traded on the American Stock Exchange under the symbol INO. On May 24, 2006, the last reported sales price for our common stock was $2.36 per share.

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The securities offered by this prospectus involve a high degree of risk. See Risk Factors beginning on page 3.

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**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.**

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We may sell the securities directly to you, through agents we select, or through underwriters and dealers we select. If we use agents, underwriters or dealers to sell the securities, we will name them and describe their compensation in a prospectus supplement.

This prospectus is dated May 25, 2006.

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You should rely only on the information contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference into this prospectus. If any person does provide you with information that differs from what is contained or incorporated by reference in this prospectus, you should not rely on it. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus. You should assume that the information contained in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information contained in any document we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any prospectus supplement or any sale of a security. These documents are not an offer to sell or a solicitation of an offer to buy these securities in any circumstances under which the offer or solicitation is unlawful.

## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one of more offerings up to a total dollar amount of proceeds of $75,000,000. This prospectus describes the general manner in which our securities may be offered by this prospectus. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus or in documents incorporated by reference in this prospectus. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus or in documents incorporated by reference in this prospectus, you should rely on the information in the prospectus supplement. You should carefully read both this prospectus and any prospectus supplement together with the additional information described under Where You Can Find More Information before buying any securities in this offering. Whenever we refer to Inovio, we, our or us in this prospectus, w mean Inovio Biomedical Corporation, unless the context suggests otherwise.

**ABOUT INOVIO**

We are a biomedical company with a technology platform based on medical devices that use electroporation therapy to enhance the delivery of drugs and genes into cells. We are developing and seeking to commercialize medical therapies to address a number of diseases with critical unmet treatment needs using electroporation therapy. Our Selective Electrochemical Tumor Ablation ( SECTA ) therapy is in Phase III clinical trials, consisting of sites in the United States and Europe for the treatment of recurrent head and neck cancer. In addition, we are currently conducting pre-marketing studies to support the commercialization of the SECTA system in Europe.

Our system, which uses a generator together with disposable needle applicators, delivers electrical pulses to tumors injected with the generic drug Bleomycin, an antibiotic that is used only for its cancer-fighting effects. The distinctive feature of the system, we believe, is the preservation of healthy tissue at the margins of the tumor. We anticipate the system may therefore afford advantages over surgery in preserving function and improving the quality of life for cancer patients who would otherwise face significant morbidity associated with cancer surgery. Since Inovio intends to demonstrate these attributes in the current clinical studies, the statements as to the benefits of SECTA are forward-looking. Prior to commercial sales of the SECTA system in the European Union ( EU ), we are required to CE Mark the system. The CE Mark is an international symbol of quality and compliance. The completion of the European pre-marketing studies in 2006 is required prior to the commercial launch of the SECTA system in Europe and will represent an important milestone for us.

As part of our MedPulser® product line, we are also developing devices for the delivery of DNA for vaccinations and gene therapy. To our knowledge, we are the first company to initiate a clinical study involving the use of electroporation to deliver therapeutic genes in human patients. Our DNA electroporation delivery technology is currently being evaluated in four independent Phase I clinical trials together with Moffitt at the Moffitt Regional Cancer Center in Tampa, Florida, Vical, Inc., Merck & Co., Inc. and the University of Southampton in the United Kingdom. Recently we entered into a collaborative commercialization agreement to co-develop an HCV therapeutic vaccine with Tripep AB, a biotechnology research company in Stockholm, Sweeden that develops and commercializes candidate drugs based on patented technologies. We believe that our efforts with Tripep will result in another Phase I clinical trial this year.

We were incorporated on August 8, 1979, under the laws of British Columbia, Canada, as Genetronics Biomedical Ltd. On June 15, 2001, we changed the jurisdiction of our incorporation from British Columbia, Canada, to the state of Delaware. On March 31, 2005, we changed our corporate name from Genetronics Biomedical Corporation to Inovio Biomedical Corporation.

Our principal executive offices are located at 11494 Sorrento Valley Road, San Diego, California 92121-1318, and our telephone number is (858) 597-6006. Our website address is www.inovio.com. Effective April 4, 2005, our American Stock Exchange ticker symbol changed from GEB to INO.

**RISK FACTORS**

*Investors should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones facing our company. Additional risks not presently known to us or that we currently believe are immaterial may also impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks and you may lose all or part of your investment. In assessing these risks, investors should also refer to the other information contained or incorporated by reference herein, including our consolidated financial statements and related notes. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our securities to decline, resulting in a loss of all or part of your investment.*



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**IF WE ARE UNABLE TO DEVELOP COMMERCIALLY SUCCESSFUL PRODUCTS, INCLUDING OUR MEDPULSER® ELECTROPORATION THERAPY SYSTEM IN VARIOUS MARKETS FOR MULTIPLE INDICATIONS, PARTICULARLY FOR THE TREATMENT OF HEAD AND NECK CANCER, OUR BUSINESS WILL BE HARMED AND WE MAY BE FORCED TO CURTAIL OR CEASE OPERATIONS.**

Our ability to achieve and sustain operating profitability depends on our ability to successfully commercialize our MedPulser® Electroporation Therapy System in various markets for use in treating solid tumors, particularly for the treatment of head and neck cancer, and other indications, which depends in large part on our ability to commence, execute and complete clinical programs and obtain regulatory approvals for our MedPulser® Electroporation Therapy System. In particular, our ability to achieve and sustain profitability will depend in large part on our ability to commercialize our MedPulser® Electroporation Therapy System for the treatment of head and neck cancer in Europe and the United States. We have received various regulatory approvals, which apply to Europe for our MedPulser® Electroporation Therapy System for use in treating solid tumors; the products related to the CE Mark has not yet been commercialized. We have not yet received any regulatory approvals to sell any of our products in the United States and further clinical trials are still necessary before we can seek regulatory approval to sell our products in the United States for treating solid tumors. We cannot assure you we will receive approval for our MedPulser® Electroporation Therapy System for the treatment of head and neck cancer or other types of cancer or indications in the United States or in other countries or, if approved, that we will achieve significant level of sales. If we fail to commercialize our products, we may be forced to curtail or cease operations.

We will be starting additional clinical studies for different indications, such as breast and pancreas, and are also in the pre-clinical stages of research and development with new product candidates using our electroporation technology. These new indications and product candidates will require significant costs to advance through the development stages. If such product candidates are advanced through clinical trials, the results of such trials may not gain FDA approval. Even if approved, our products may not be commercially successful. If we fail to develop and commercialize our products, we may be forced to curtail or cease operations.

We cannot assure you that we will successfully develop any products. If we fail to develop or successfully commercialize any products, we may be forced to curtail or cease operations. Additionally, much of the commercialization efforts for our products must be carried forward by a licensing partner. We may not be able to obtain such a partner.

**WE WILL HAVE A NEED FOR SIGNIFICANT FUNDS IN THE FUTURE AND THERE IS NO GUARANTEE THAT WE WILL BE ABLE TO OBTAIN THE FUNDS WE NEED.**

Developing a new medical device and conducting clinical trials is expensive. Our product development efforts may not lead to commercial products, either because our product candidates fail to be found safe or effective in clinical trials or because we lack the necessary financial or other resources or relationships to pursue our programs through commercialization. Our capital and future revenue may not be sufficient to support the expenses of our operations, the development of commercial infrastructure and the conduct of our clinical trials and pre-clinical research.

Our plans for continuing clinical trials, conducting research, furthering development and, eventually, marketing our human-use equipment will involve substantial costs. The extent of our costs will depend on many factors, including some of the following:

- The progress and breadth of pre-clinical testing and the size or complexity of our clinical trials and drug delivery programs, all of which directly influence cost;

- Higher then expected costs involved in complying with the regulatory process to get our human-use products approved, including the number, size, and timing of necessary clinical trials and costs associated with the current assembly and review of existing clinical and pre-clinical information;

- Higher then expected costs involved in patenting our technologies and defending them and pursuing our intellectual property strategy;

- Changes in our existing research and development relationships and our ability to enter into new agreements;

- Changes in or terminations of our existing collaboration and licensing arrangements;

- Faster than expected rate of progress and changes in scope and cost of our research and development and clinical trial activities;

- An increase or decrease in the amount and timing of milestone payments we receive from collaborators;

- Higher than expected costs of preparing an application for FDA approval of our MedPulser® Electroporation Therapy System;

- Higher than expected costs of developing the processes and systems to support FDA approval of our MedPulser® Electroporation Therapy System;

- An increase in our timetable and costs for the development of marketing operations and other activities related to the commercialization of our MedPulser® Electroporation Therapy System and our other product candidates;

- A change in the degree of success in our Phase III clinical trial of MedPulser® Electroporation Therapy System and in our other clinical trials;

- Higher then expected costs to further develop and scale up our manufacturing capability of our human-use equipment; and

- Competition for our products and our ability, and that of our partners, to commercialize our products.

We plan to fund operations by several means. We will attempt to enter into contracts with partners that will fund either general operating expenses or specific programs or projects. Some funding also may be received through government grants. We cannot promise that we will enter into any such contracts or receive such grants or, if we do, that our partners and the grants will provide enough funding to meet our needs.

In the past, we have raised funds by public and private sale of our common and preferred stock, and we are likely to do this in the future to raise needed funds. Sale of our capital stock to new private or public investors usually results in existing stockholders becoming diluted. The greater the number of shares sold, the greater the dilution. A high degree of dilution can make it difficult for the price of our stock to rise and could cause the price to fall. Dilution also lessens a stockholder s voting power.

We cannot assure you that we will be able to raise capital needed to fund operations, or that we will be able to raise capital under terms that are favorable to us.

**THE MARKET FOR OUR COMMON STOCK IS VOLATILE, WHICH COULD ADVERSELY AFFECT AN INVESTMENT IN OUR SECURITIES.**

Our share price and volume are highly volatile. This is not unusual for biomedical companies of our size, age, and with a discrete market niche. It also is common for the trading volume and price of biotechnology securities to be unrelated to a company s operations, i.e. to go up or down on positive news and to go up or down on no news. Our common stock has exhibited this type of behavior in the past, and may well exhibit it in the future as may any other securites we offer under this prospectus. The historically low trading volume of our common stock, in relation to many other biomedical companies of our size, makes it more likely that a severe fluctuation in volume, either up or down, will affect the price of our common stock and any other securites we offer under this prospectus, especially those linked to our common stock.

Some factors that we would expect to depress the price of our securities include:

- Adverse clinical trial results;

- Our inability to obtain additional capital;

- Announcement that the FDA denied our request to approve our human-use product for commercialization in the United States, or similar denial by other regulatory bodies which make independent decisions outside the United States. To date, the EU is the only foreign jurisdiction in which we have sought approval for commercialization;

- Announcement of legal actions brought by or filed against us for patent or other matters, especially if we do not win such actions;

- Cancellation of important corporate partnerships or agreements;

- Public concern as to the safety or efficacy of our human-use products including public perceptions regarding gene therapy in general;

- Stockholders decisions, for whatever reasons, to sell large amounts of our common stock;

- Adverse research and development results;

- Declining working capital to fund operations, or other signs of apparent financial uncertainty; and

- Significant advances made by competitors that are perceived to limit our market position.

Additionally, our clinical trials are open-ended and, therefore, there is a risk that information regarding the success or failure of our clinical trials may be obtained by the public prior to a formal announcement by us. These factors, as well as the other factors described in this Prospectus, could significantly affect the price of our common stock and any other securities we offer under this prospectus.

**WE HAVE A HISTORY OF LOSSES, WE EXPECT TO CONTINUE TO INCUR LOSSES AND WE MAY NOT ACHIEVE OR MAINTAIN PROFITABILITY**

As of March 31, 2006 and December 31, 2005, we had an accumulated deficit of $117.0 million and $114.3 million, respectively. We have operated at a loss since 1994, and we expect this to continue for some time. The amount of the accumulated deficit will continue to increase, as it will be expensive to continue clinical, research and development efforts. If these activities are successful and if we receive approval from the FDA to market equipment, then even more funding will be required to market and sell the equipment. We are evaluating potential partnerships as an additional way to fund operations. We will continue to rely on outside sources of financing to meet our capital needs beyond next year. The outcome of these matters cannot be predicted at this time.

Further, there can be no assurance, assuming we successfully raise additional funds, that we will achieve positive cash flow. If we are not able to secure additional funding, we will be required to further scale back our research and development programs, preclinical studies and clinical trials, general, and administrative activities and may not be able to continue in business. Including the cash proceeds received from financings, various licensing payments, the exercise of employee stock options and investor warrants, we believe we have sufficient funds to fund operations through the beginning of the second quarter of 2007.

**THERE EXIST RESTRICTIONS IN OUR ABILITY TO DECLARE OR PAY DIVIDENDS OR MAKE DISTRIBUTIONS ON CAPITAL STOCK WE MAY OFFER UNDER THIS PROSPECTUS**

Under the Certificate of Designation applicable to our Series D Preferred Stock, so long as 35 percent of the shares of our Series D Preferred Stock that we originally issued are outstanding, holders of a majority of those shares must consent to certain actions we take with respect to our capital stock. These actions include increasing our authorized capital stock or the declaring or paying any dividend or other distribution (whether in cash, stock or other property) with respect to our capital stock or that of any our subsidiaries, other than a dividend or other distribution pursuant to the terms of our Series A or C Preferred Stock. Accordingly, so long as 35 percent of the shares of our Series D Preferred Stock that we originally issued are outstanding, before we may declare or pay any dividend or make any distribution (including distributions resulting from our redemption or repurchase of any of share(s) of our common or preferred stock that we may offer pursuant to this prospectus) we would need the consent of holders of a majority of the outstanding shares of our Series D Preferred Stock. At the date of this prospectus, approximately 70 percent of the shares of our Series D Preferred Stock that we originally issued were outstanding.

**IF WE DO NOT HAVE ENOUGH CAPITAL TO FUND OPERATIONS, THEN WE WILL HAVE TO CUT COSTS.**

If we are not able to raise needed money under acceptable terms, then we will have to take measures to cut costs, such as:

- Delay, scale back or discontinue one or more of our oncology or gene delivery programs or other aspects of operations, including laying off some personnel or stopping or delaying clinical trials;



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- Sell or license some of our technologies that we would not otherwise give up if we were in a better financial position;

- Sell or license some of our technologies under terms that are less favorable than they otherwise might have been if we were in a better financial position; and

- Consider merging with another company or positioning ourselves to be acquired by another company.

If it became necessary to take one or more of the above-listed actions, then we may have a lower valuation, which may be reflected in our the market price of our common stock and any other securities we offer under this prospectus.

**A SMALL NUMBER OF LICENSING PARTNERS ACCOUNT FOR A SUBSTANTIAL PORTION OF OUR REVENUES IN EACH PERIOD AND OUR RESULTS OF OPERATIONS AND FINANCIAL CONDITION COULD SUFFER IF WE LOSE THESE LICENSING PARTNERS OR FAIL TO ADD ADDITIONAL LICENSING PARTNERS IN THE FUTURE.**

We derive a significant portion of our revenue from a limited number of licensing partners in each period. Accordingly, if we fail to sign additional future contracts with major licensing partners, if a licensing contract is delayed or deferred, or if an existing licensing contract expires or is cancelled and we fail to replace the contract with new business, our revenue could be adversely affected. Until commercialization of our MedPulser® Electroporation Therapy System, we expect that a limited number of licensing partners will continue to account for a substantial portion of our revenue in each quarter in the foreseeable future. During the three months ended March 31 2006 and the year ended December 31, 2005, one licensing partner, Merck, accounted for approximately 56% and 70%, respectively, of our consolidated revenue.

**PRE-CLINICAL AND CLINICAL TRIALS OF HUMAN-USE EQUIPMENT ARE UNPREDICTABLE. IF WE EXPERIENCE UNSUCCESSFUL TRIAL RESULTS, OUR BUSINESS WILL SUFFER.**

Before any of our human-use equipment can be sold, the FDA or applicable foreign regulatory authorities must determine that the equipment meets specified criteria for use in the indications for which approval is requested, including obtaining appropriate regulatory approvals. Satisfaction of regulatory requirements typically takes many years, and involves compliance with requirements covering research and development, testing, manufacturing, quality control, labeling and promotion of drugs for human use. To obtain regulatory approvals, we must, among other requirements, complete clinical trials demonstrating our product candidates are safe and effective for a particular cancer type or other disease. Regulatory approval of a new drug is never guaranteed. The FDA will make this determination based on the results from our pre-clinical testing and clinical trials and has substantial discretion in the approval process. Despite the time and experience exerted, failure can occur at any stage, and we could encounter problems causing us to abandon clinical trials.

We have completed Phase II clinical trials and are conducting two Phase III clinical trials of our lead product candidate, the MedPulser® Electroporation Therapy System, for the treatment of recurrent and second primary head and neck cancers. In addition, we are conducting two Phase IV (or Pre-Marketing) clinical trials of our MedPulser® Electroporation Therapy System for the treatment of new and recurrent head and neck cancers and new and recurrent primary skin cancers, and have started a Phase I clinical trial of our MedPulser® Electroporation Therapy System for the treatment of breast and pancreas cancers. Current or future clinical trials may demonstrate the MedPulser® Electroporation Therapy System is neither safe nor effective.

Any delays or difficulties we encounter in our pre-clinical research and clinical trials, in particular the Phase III clinical trials of our MedPulser® Electroporation Therapy System for the treatment of recurrent head and neck cancer, may delay or preclude regulatory approval. Our product development costs will increase if we experience delays in testing or regulatory approvals or if we need to perform more or larger clinical trials than planned. Any delay or preclusion could also delay or preclude the commercialization of our MedPulser® Electroporation Therapy System or any other product candidates.

Clinical trials are unpredictable, especially human-use trials. Results achieved in early stage clinical trials may not be repeated in later stage trials, or in trials with more patients. When early positive results were not repeated in later stage trials, pharmaceutical and biotechnology companies have suffered significant setbacks. Not only are

commercialization timelines pushed back, but some companies, particularly smaller biotechnology companies with limited cash reserves, have gone out of business after releasing news of unsuccessful clinical trial results.

We cannot be certain the results we observed in our pre-clinical testing will be confirmed in clinical trials or the results of any of our clinical trials will support FDA approval. If we experience unexpected, inconsistent or disappointing results in connection with a clinical or pre-clinical trial our business will suffer.

The patients admitted to our oncology clinical trials conducted in the United States and Europe are experiencing late stage cancer and are in a diminished physical state prior to entering our studies and thus these patients can experience serious adverse events, which is abbreviated in our industry as SAEs, whether due to our technology or other procedures. To date, there have been seven SAEs that were at least possibly related to our technology that resulted in death, a life-threatening experience, or hospitalization or prolongation of existing hospitalization. All seven of these serious adverse events were reported to the FDA. The SAEs were excessive bleeding in the tumor bed, edema of larynx, sudden death (suspected heart failure), weight loss, sudden death (cause unknown), obstruction of the airway, and death (suspected internal bleeding). Because our studies are controlled and ongoing, we cannot assure you that these or other serious adverse events will not delay or prevent approval of our product by the FDA.

In addition, any of our clinical trials for our treatment may be delayed or halted at any time for various reasons, including:

- The electroporation-mediated delivery of drugs or other agents may be found to be ineffective or to cause harmful side effects, including death;

- Our clinical trials may take longer than anticipated, for any of a number of reasons including a scarcity of subjects that meet the physiological or pathological criteria for entry into the study, a scarcity of subjects that are willing to participate through the end of the trial, or data and document review;

- The reported clinical data may change over time as a result of the continuing evaluation of patients or the current assembly and review of existing clinical and pre-clinical information;

- Data from various sites participating in the clinical trials may be incomplete or unreliable, which could result in the need to repeat the trial or abandon the project; and

- Pre-clinical and clinical data can be interpreted in many different ways, and the FDA and other regulatory authorities may interpret our data differently than we do, which could halt or delay our clinical trials or prevent regulatory approval.

If any of the above events arise during our clinical trials or data review, then we would expect this to have a serious negative effect on our company and your investment.

Despite the FDA s designation of our MedPulser® Electroporation Therapy System as a Fast Track product, such FDA designation is independent of the FDA s Priority Review and Accelerated Approval designations and we may encounter delays in the regulatory approval process due to additional information requirements from the FDA, unintentional omissions in our PMA for our MedPulser® Electroporation Therapy System, or other delays in the FDA s review process. We may encounter delays or rejections in the regulatory approval process because of additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review.

A majority of our operating expenses relate to our clinical trials. A delay in our trials, for whatever reason, will probably require us to spend additional funds to keep the product(s) moving through the regulatory process. If we do not have or cannot raise the needed funds, then the testing of our human-use products could be shelved. In the event the clinical trials are not successful, we will have to determine whether to put more money into the program to address its deficiencies or whether to abandon the clinical development programs for the products in the tested indications. Loss of the human-use product line would be a significant setback for our company.

Because there are so many variables inherent in clinical trials, we cannot predict whether any of our future regulatory applications to conduct clinical trials will be approved by the FDA or other regulatory authorities, whether our clinical trials will commence or proceed as planned, and whether the trials will ultimately be deemed to be successful. To date, our experience has been that submission and approval of clinical protocols has taken longer than desired or expected.

**OUR BUSINESS IS HIGHLY DEPENDENT ON RECEIVING APPROVALS FROM VARIOUS UNITED STATES AND INTERNATIONAL GOVERNMENT AGENCIES AND WILL BE DRAMATICALLY AFFECTED IF APPROVAL TO MANUFACTURE AND SELL OUR HUMAN-USE EQUIPMENT IS NOT GRANTED OR IS NOT GRANTED IN A TIMELY MANNER.**

The production and marketing of our human-use equipment and the ongoing research, development, pre-clinical testing, and clinical trial activities are subject to extensive regulation. Numerous governmental agencies in the U.S. and internationally, including the FDA, must review our applications and decide whether to grant approval. All of our human-use equipment must go through an approval process, in some instances for each indication for which we want to label it for use (such as use for dermatology, use for transfer of a certain gene to a certain tissue, or use for administering a certain drug to a certain tumor type in a patient having certain characteristics). These regulatory processes are extensive and involve substantial costs and time.

We have limited experience in, and limited resources available for, regulatory activities. Failure to comply with applicable regulations can, among other things, result in non-approval, suspensions of regulatory approvals, fines, product seizures and recalls, operating restrictions, injunctions and criminal prosecution.

Any of the following events can occur and, if any did occur, any one could have a material adverse effect on our business, financial conditions and results of operations:

- Clinical trials may not yield sufficiently conclusive results for regulatory agencies to approve the use of our products;

- There can be delays, sometimes long, in obtaining approval for our human-use devices, and indeed, we have experienced such delays in obtaining FDA approval of our clinical protocols;

- The rules and regulations governing human-use equipment such as ours can change during the review process, which can result in the need to spend time and money for further testing or review;

- If approval for commercialization is granted, it is possible the authorized use will be more limited than we believe is necessary for commercial success, or that approval may be conditioned on completion of further clinical trials or other activities; and

- Once granted, approval can be withdrawn, or limited, if previously unknown problems arise with our human-use product or data arising from its use.

**WE COULD BE SUBSTANTIALLY DAMAGED IF PHYSICIANS AND HOSPITALS PERFORMING OUR CLINICAL TRIALS DO NOT ADHERE TO PROTOCOLS OR PROMISES MADE IN CLINICAL TRIAL AGREEMENTS.**

We work and have worked with a number of hospitals to perform clinical trials, primarily in oncology. We depend on these hospitals to recruit patients for the trials, to perform the trials according to our protocols, and to report the results in a thorough, accurate and consistent fashion. Although we have agreements with these hospitals, which govern what each party is to do with respect to the protocol, patient safety, and avoidance of conflict of interest, there are risks that the terms of the contracts will not be followed, such as the following:

*Risk of Deviations from Protocol.* The hospitals or the physicians working at the hospitals may not perform the trial correctly. Deviations from protocol may make the clinical data not useful and the trial could be essentially worthless.

*Risk of Improper Conflict of Interest.* Physicians working on protocols may have an improper economic interest in our company, or other conflict of interest. When a physician has a personal stake in the success of the trial, such as can be inferred if the physician owns securities, or rights to purchase securities, of the trial sponsor, it can create suspicion that the trial results were improperly influenced by the physician s interest in economic gain. Not only can this put the clinical trial results at risk, but it can also do serious damage to a company s reputation.

*Risks Involving Patient Safety and Consent.* Physicians and hospitals may fail to secure formal written consent as instructed or report adverse effects that arise during the trial in the proper manner, which could put patients at unnecessary risk. Physicians and hospital staff may fail to observe proper safety measures such as the mishandling of used medical needles, which may result in the transmission of infectious and deadly diseases, such as HIV and AIDS. This increases our liability, affects the data, and can damage our reputation.

If any of these events were to occur, then it could have a material adverse effect on our ability to receive regulatory authorization to sell our human-use equipment, not to mention on our reputation. Negative events that arise in the performance of clinical trials sponsored by biotechnology companies of our size and with limited cash reserves similar to ours have resulted in companies going out of business. While these risks are ever present, to date, our contracted physicians and clinics have been successful in collecting significant data regarding the clinical protocols under which they have operated, and we are unaware of any conflicts of interest or improprieties regarding our protocols.

**EVEN IF OUR PRODUCTS ARE APPROVED BY REGULATORY AUTHORITIES, IF WE FAIL TO COMPLY WITH ON-GOING REGULATORY REQUIREMENTS, OR IF WE EXPERIENCE UNANTICIPATED PROBLEMS WITH OUR PRODUCTS, THESE PRODUCTS COULD BE SUBJECT TO RESTRICTIONS OR WITHDRAWAL FROM THE MARKET.**

Any product for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data and promotional activities for such product, will be subject to continual review and periodic inspections by the FDA and other regulatory bodies. Even if regulatory approval of a product is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or certain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Later discovery of previously unknown problems with our products, including unanticipated adverse events of unanticipated severity or frequency, manufacturer or manufacturing processes or failure to comply with regulatory requirements, may result in restrictions on such products or manufacturing processes, withdrawal of the products from the market, voluntary or mandatory recall, fines, suspension of regulatory approvals, product seizures or detention, injunctions or the imposition of civil or criminal penalties.

**FAILURE TO COMPLY WITH FOREIGN REGULATORY REQUIREMENTS GOVERNING HUMAN CLINICAL TRIALS AND MARKETING APPROVAL FOR OUR HUMAN-USE EQUIPMENT COULD PREVENT US FROM SELLING OUR PRODUCTS IN FOREIGN MARKETS, WHICH MAY ADVERSELY AFFECT OUR OPERATING RESULTS AND FINANCIAL CONDITIONS.**

For marketing our MedPulser® Electroporation Therapy System outside the United States, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country and may require additional testing. The time required to obtain approvals outside the United States may differ from that required to obtain FDA approval. We may not obtain foreign regulatory approval on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other countries or by the FDA. Failure to comply with these regulatory requirements or to obtain required approvals could impair our ability to develop these markets and could have a material adverse effect on our results of operations and financial condition.

**IF WE CANNOT MAINTAIN OUR EXISTING CORPORATE AND ACADEMIC ARRANGEMENTS AND ENTER INTO NEW ARRANGEMENTS, WE MAY BE UNABLE TO DEVELOP PRODUCTS EFFECTIVELY, OR AT ALL.**

Our strategy for the research, development and commercialization of our product candidates may result in our entering into contractual arrangements with corporate collaborators, academic institutions and others. We have entered into sponsored research, license and/or collaborative arrangements with several entities, including Merck, Vical, Valentis, the U.S. Navy, Chiron and the University of South Florida, as well as numerous other institutions that conduct clinical trials work or perform pre-clinical research for us. Our success depends upon our collaborative partners performing their responsibilities under these arrangements and complying with the regulations and requirements governing clinical trials. We cannot control the amount and timing of resources our collaborative partners devote to our research and testing programs or product candidates, or their compliance with regulatory requirements which can vary because of factors unrelated to such programs or product candidates. These

relationships may in some cases be terminated at the discretion of our collaborative partners with only limited notice to us.

Merck can terminate its May 2004 license and collaboration agreement with us at any time in its sole discretion, without cause, by giving ninety days advance notice to us. If this agreement is terminated by Merck at any time during the first two years of the collaboration term, then Merck shall continue, for a six-month period beginning on the date of such termination, to make payments previously approved by the project s joint collaboration committee in relation to scientists and outside contractors engaged by us in connection with the agreement. During the three months ended March 31, 2006 and the year ended December 31, 2005, Merck accounted for approximately 60% and 56% of our consolidated revenue, respectively.

We may not be able to maintain our existing arrangements, enter into new arrangements or negotiate current or new arrangements on acceptable terms, if at all. Some of our collaborative partners may also be researching competing technologies independently from us to treat the diseases targeted by our collaborative programs.

**OUR ABILITY TO ACHIEVE SIGNIFICANT REVENUES FROM SALES OR LEASES OF HUMAN-USE PRODUCTS WILL DEPEND ON ESTABLISHING EFFECTIVE SALES, MARKETING AND DISTRIBUTION CAPABILITIES OR RELATIONSHIPS AND WE CURRENTLY LACK SUBSTANTIAL EXPERIENCE IN THESE AREAS.**

To market our products, we will need to develop sales, marketing and distribution capabilities. In order to develop or otherwise obtain these capabilities, we may have to enter into marketing, distribution or other similar arrangements with third parties in order to sell, market and distribute our products successfully. To the extent we enter into any such arrangements with third parties, our product revenue is likely to be lower than if we directly marketed and sold our products, and any revenue we receive will depend upon the efforts of such third parties. We may be unable to develop sufficient sales, marketing and distribution capabilities to commercialize our products successfully.

If we want to market and sell our human-use products directly, we must develop a marketing and sales force. This would involve substantial costs, training, and time. We have limited experience in sales, marketing and distribution of clinical and human-use products and we currently have no sales, marketing or distribution capability. We may be unable to develop sufficient sales, marketing and distribution capabilities to commercialize our products successfully. Regardless of whether we elect to use third parties or seek to develop our own marketing capability, we may not be able to successfully commercialize any product.

**WE RELY ON COLLABORATIVE AND LICENSING RELATIONSHIPS TO FUND A PORTION OF OUR RESEARCH AND DEVELOPMENT EXPENSES. IF WE ARE UNABLE TO MAINTAIN OR EXPAND EXISTING RELATIONSHIPS, OR INITIATE NEW RELATIONSHIPS, WE WILL HAVE TO DEFER OR CURTAIL RESEARCH AND DEVELOPMENT ACTIVITIES IN ONE OR MORE AREAS.**

Our partners and collaborators fund a portion of our research and development expenses and assist us in the research and development of our human-use equipment. These collaborations and partnerships can help pay the salaries and other overhead expenses related to research. In the past, we encountered operational difficulties after the termination of an agreement by a former partner. Because this partnership was terminated, we did not receive significant milestone payments which we had expected and were forced to delay some clinical trials as well as some product development.

Our clinical trials to date have used our equipment with the anti-cancer drug bleomycin. We do not currently intend to package bleomycin together with the equipment for sale, but if it should be necessary or desirable to do this, we would need a reliable source of the drug. At this time we do not have a fixed source of bleomycin for inclusion with equipment or alone. If it becomes necessary or desirable to include bleomycin in our package, we would have to form a relationship with another provider of this generic drug before any product could be launched.

We also rely on scientific collaborators at companies and universities to further our research and test our equipment. In most cases, we lend our equipment to a collaborator, teach him or her how to use it, and together design experiments to test the equipment in one of the collaborator s fields of expertise. We aim to secure agreements that restrict collaborators rights to use the equipment outside of the agreed upon research, and outline the rights each of us will have in any results or inventions arising from the work.

Nevertheless, there is always risk that:

- Our equipment will be used in ways we did not authorize, which can lead to liability and unwanted competition;

- We may determine that our technology has been improperly assigned to us or a collaborator may claim rights to certain of our technology, which may require us to pay license fees or milestone payments and, if commercial sales of the underlying product is achieved, royalties;

- We may lose rights to inventions made by our collaborators in the field of our business, which can lead to expensive legal fights and unwanted competition;

- Our collaborators may not keep our confidential information to themselves, which can lead to loss of our right to seek patent protection and loss of trade secrets, and expensive legal fights; and

- Collaborative associations can damage a company s reputation if they go awry and thus, by association or otherwise, the scientific or medical community may develop a negative view of us.

We cannot guarantee that any of the results from these collaborations will be successful, that we will be able to continue to collaborate with individuals and institutions that will further our work, or that we will be able to do so under terms that are not overly restrictive. If we are not able to maintain or develop new collaborative relationships, then it is likely the research pace will slow down and it will take longer to identify and commercialize new products, or new indications for our existing products.

**WE RELY HEAVILY ON OUR PATENTS AND PROPRIETARY RIGHTS TO ATTRACT PARTNERSHIPS AND MAINTAIN MARKET POSITION.**

Another factor that will influence our success is the strength of our patent portfolio. Patents give the patent holder the right to prevent others from using its patented technology. If someone infringes upon the patented material of a patent holder, then the patent holder has the right to initiate legal proceedings against that person to protect the patented material. These proceedings, however, can be lengthy and costly. We perform an ongoing review of our patent portfolio to confirm that our key technologies are adequately protected. If we determine that any of our patents require either additional disclosures or revisions to existing information, we may ask that such patents be reexamined or reissued, as applicable, by the United States Patent and Trademark Office.

The patenting process, enforcement of issued patents, and defense against claims of infringement are inherently risky. Because we rely heavily on patent protection, we face the following significant risks:

*Risk of Inadequate Patent Protection for Product.* The United States Patent and Trademark Office or foreign patent offices may not grant patents of meaningful scope based on the applications we have already filed and those we intend to file. If we do not have patents that adequately protect our human-use equipment and indications for its use, then we will not be competitive.

*Risk That Important Patents Will Be Judged Invalid.* Some of the issued patents we now own or license may be determined to be invalid. If we have to defend the validity of any of our patents, the costs of such defense could be substantial, and there is no guarantee of a successful outcome. In the event an important patent related to our drug delivery technology is found to be invalid, we may lose competitive position and may not be able to receive royalties for products covered in part or whole by that patent under license agreements.

*Risk of Being Charged With Infringement.* Although we are not currently aware of any parties intending to pursue infringement claims against us, there is the risk that we will use a patented technology owned by another person and/or be charged with infringement. Defending or indemnifying a third party against a charge of infringement can involve lengthy and costly legal actions, and there can be no guarantee of a successful outcome. Biotechnology companies comparable to us in size and financial position have gone out of business after fighting and losing an

infringement battle. If we or our partners were prevented from using or selling our human-use equipment, then our business would be materially adversely affected.

*Freedom to Operate Risks.* We are aware that patents related to electrically-assisted drug delivery have been granted to, and patent applications filed by, our potential competitors. We or our partners have taken licenses to some of these patents, and will consider taking additional licenses in the future. Nevertheless, the competitive nature

of our field of business and the fact that others have sought patent protection for technologies similar to ours make these risks significant.

In addition to patents, we also rely on trade secrets and proprietary know-how. We try to protect this information with appropriate confidentiality and inventions agreements with our employees, scientific advisors, consultants, and collaborators. We cannot be sure that these agreements will not be breached, that we will be able to protect ourselves if they are breached, or that our trade secrets will not otherwise become known or be independently discovered by competitors. If any of these events occurs, then we run the risk of losing control over valuable company information, which could negatively affect our competitive position.

**IF WE ARE NOT SUCCESSFUL DEVELOPING OUR CURRENT PRODUCTS, OUR BUSINESS MODEL MAY CHANGE AS OUR PRIORITIES AND OPPORTUNITIES CHANGE. OUR BUSINESS MAY NEVER DEVELOP TO BE PROFITABLE OR SUSTAINABLE.**

There are many products and programs that to us seem promising and that we could pursue. However, with limited resources, we may decide to change priorities and shift programs away from those that we had been pursuing for the purpose of exploiting our core technology of electroporation. The choices we may make will be dependent upon numerous factors, which we cannot predict. We cannot be sure that our business model, as it currently exists or as it may evolve, will enable us to become profitable or to sustain operations.

**SERIOUS AND UNEXPECTED SIDE EFFECTS ATTRIBUTABLE TO GENE THERAPY MAY RESULT IN GOVERNMENTAL AUTHORITIES IMPOSING ADDITIONAL REGULATORY REQUIREMENTS OR A NEGATIVE PUBLIC PERCEPTION OF OUR PRODUCTS.**

The MedPulser® DNA Delivery System and any of our other Gene Therapy or DNA Vaccine product candidates under development could be broadly described as gene therapies. A number of clinical trials are being conducted by other pharmaceutical companies involving gene therapy, including compounds similar to, or competitive with, our product candidates. The announcement of adverse results from these clinical trials, such as serious unwanted and unexpected side effects attributable to treatment, or any response by the FDA to such clinical trials, may impede the timing of our clinical trials, delay or prevent us from obtaining regulatory approval or negatively influence public perception of our product candidates, which could harm our business and results of operations and depress the price of our common stock and any other securities we offer under this prospectus.

The U.S. Senate has held hearings concerning the adequacy of regulatory oversight of gene therapy clinical trials, as well as the adequacy of research subject education and protection in clinical research in general, and to determine whether additional legislation is required to protect volunteers and patients who participate in such clinical trials. The Recombinant DNA Advisory Committee, or RAC, which acts as an advisory body to the National Institutes of Health, has expanded its public role in evaluating important public and ethical issues in gene therapy clinical trials. Implementation of any additional review and reporting procedures or other additional regulatory measures could increase the costs of or prolong our product development efforts or clinical trials.

To date, there have not been any serious adverse events in any gene therapy clinical trials in which our technology was used. These current gene therapy clinical trials are being sponsored by several of our partners. In the future, if one or a series of serious adverse events were to occur during a gene therapy clinical trial in which our technology was used by a partner, the partner would be responsible for reporting all such events to the FDA and other regulatory agencies as required by law. Such serious adverse events, whether treatment-related or not, could result in negative public perception of our treatments and require additional regulatory review or other measures, which could increase the cost of or prolong our gene therapy clinical trials or require us to halt the clinical trials altogether.

The FDA has not approved any gene therapy product or gene-induced product for sale in the United States. The commercial success of our products will depend in part on public acceptance of the use of gene therapy products or gene-induced products, which are a new type of disease treatment for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene therapy products or gene-induced products are unsafe, and these treatment methodologies may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy products or gene-induced products could also result in greater government regulation and stricter clinical trial oversight.

**WE CANNOT PREDICT THE SAFETY PROFILE OF THE USE OF OUR MEDPULSER ELECTROPORATION SYSTEM WHEN USED IN COMBINATION WITH OTHER THERAPIES.**

Our trials involve the use of our MedPulser® Electroporation System in combination with bleomycin, an anti-cancer drug. While the data we have evaluated to date suggest the MedPulser® Electroporation Therapy System does not increase the adverse effects of other therapies, we cannot predict if this outcome will continue to be true or whether possible adverse side effects not directly attributable to the other drugs will compromise the safety profile of our MedPulser® Electroporation Therapy System when used in certain combination therapies or if used off-label with other drugs by physicians.

**WE RUN THE RISK THAT OUR TECHNOLOGY WILL BECOME OBSOLETE OR LOSE ITS COMPETITIVE ADVANTAGE.**

The drug delivery business is very competitive, fast moving and intense, and expected to be increasingly so in the future. Other companies and research institutions are developing drug delivery systems that, if not similar in type to our systems, are designed to address the same patient or subject population. Therefore, we cannot promise you that our products will be the best, the safest, the first to market, or the most economical to make or use. If competitors products are better than ours, for whatever reason, then we could make less money from sales and our products risk becoming obsolete.

There are many reasons why a competitor might be more successful than us, including:

*Financial Resources.* Some competitors have greater financial resources and can afford more technical and development setbacks than we can.

*Greater Experience.* Some competitors have been in the biomedical business longer than we have. They have greater experience than us in critical areas like clinical testing, obtaining regulatory approval, and sales and marketing. This experience or their name recognition may give them a competitive advantage over us.

*Superior Patent Position.* Some competitors may have a better patent position protecting their technology than we have or will have to protect our technology. If we cannot use our patents to prevent others from copying our technology or developing similar technology, or if we cannot obtain a critical license to another s patent that we need to make and use our equipment, then we would expect our competitive position to weaken.

*Faster to Market.* Some companies with competitive technologies may move through stages of development, approval, and marketing faster than us. If a competitor receives FDA approval before us, then it will be authorized to sell its products before we can sell ours. Because the first company to market often has a significant advantage over late-comers, a second place position could result in less than anticipated sales.

*Reimbursement Allowed.* In the U.S., third party payers, such as Medicare, may reimburse physicians and hospitals for competitors products but not for our human-use products. This would significantly affect our ability to sell our human-use products in the U.S. and would have a serious effect on revenue and our business as a whole. Outside of the U.S., reimbursement and funding policies vary widely.

**ANY ACQUISITION WE MIGHT MAKE MAY BE COSTLY AND DIFFICULT TO INTEGRATE, MAY DIVERT MANAGEMENT RESOURCES OR DILUTE STOCKHOLDER VALUE.**

We have considered and made strategic acquisitions in the past, including Inovio AS in January 2005, and, in the future, may acquire or make investments in complementary companies, products or technologies. As part of our business strategy, we may acquire assets or businesses principally relating to or complementary to our current operations, and we have in the past evaluated and discussed such opportunities with interested parties. Any acquisitions we undertake will be accompanied by the risks commonly encountered in business acquisitions. These risks include, among other things:

- Potential exposure to unknown liabilities of acquired companies;
- The difficulty and expense of assimilating the operations and personnel of acquired businesses;

- Diversion of management time and attention and other resources;
- Loss of key employees and customers as a result of changes in management;



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- Incurrence of amortization expenses related to intangible assets, impairment charges and other charges, such as the charge in excess of $3.3 million we incurred to our results of operations during 2005 related to our write-off of in-process research and development that we acquired in our acquisition of Inovio AS in January 2005; and

- Possible dilution to holders of our capital stock.

In addition, geography may make the integration of businesses more difficult. We may not be successful in overcoming these risks or any other problems encountered in connection with any acquisitions.

**CHANGES IN FOREIGN EXCHANGE RATES MAY AFFECT OUR FUTURE OPERATING RESULTS.**

In January 2005, we acquired Inovio AS, a Norwegian company. During the year ended December 31, 2005 and three months ended March 31, 2006, Inovio AS contributed approximately 24% and 17%, respectively, of our total revenue. Inovio AS conducts its operations primarily in foreign currencies, including the Euro, Norwegian Kroner and Swedish Krona. Fluctuation in the values of these foreign currencies relative to the U.S. dollar will affect our financial results which are reported in US dollars and will cause U.S. dollar translation of such currencies to vary from one period to another. We cannot predict the effect of exchange rate fluctuations upon future operating results.

**ECONOMIC, POLITICAL, MILITARY OR OTHER EVENTS IN THE UNITED STATES OR IN OTHER COUNTRIES COULD INTERFERE WITH OUR SUCCESS OR OPERATIONS AND HARM OUR BUSINESS**

The September 11, 2001 terrorist attacks disrupted commerce throughout the United States and other parts of the world. The continued threat of similar attacks throughout the world and the military action taken by the United States and other nations in Iraq or other countries may cause significant disruption to commerce throughout the world. To the extent that such disruptions further slow the global economy, our business and results of operations could be materially adversely affected. We are unable to predict whether the threat of new attacks or the responses thereto will result in any long-term commercial disruptions or if such activities or responses will have a long-term material adverse effect on our business, results of operations or financial condition.

**OUR DEPENDENCE UPON NON-MARKETED PRODUCTS, LACK OF EXPERIENCE IN MANUFACTURING AND MARKETING HUMAN-USE PRODUCTS, AND OUR CONTINUING DEFICIT MAY RESULT IN EVEN FURTHER FLUCTUATIONS IN OUR TRADING VOLUME AND SHARE PRICE.**

Successful approval, marketing, and sales of our human-use equipment are critical to the financial future of our company. Our human-use products are not yet approved for sale in the United States and some other jurisdictions and we may never obtain those approvals. Even if we do obtain approvals to sell our human-use products in the United States, those sales may not be as large or timely as we expect. These uncertainties may cause our operating results to fluctuate dramatically in the next several years. We believe that quarter-to-quarter or annual comparisons of our operating results are not a good indicator of our future performance. Nevertheless, these fluctuations may cause us to perform below the expectations of the public market analysts and investors. If this happens, the price of our common shares would likely fall.

**THERE IS A RISK OF PRODUCT LIABILITY WITH HUMAN-USE EQUIPMENT**

The testing, marketing and sale of human-use products expose us to significant and unpredictable risks of equipment product liability claims. These claims may arise from patients, clinical trial volunteers, consumers, physicians, hospitals, companies, institutions, researchers or others using, selling, or buying our equipment. Product liability risks are inherent in our business and will exist even after the products are approved for sale. If our human-use equipment is commercialized, we run the risk that use (or misuse) of the equipment will result in personal injury. The chance of such an occurrence will increase after a product type is on the market.

We have liability insurance in connection with ongoing business and products, and plan to purchase additional policies if such policies are determined by management to be necessary. However, our existing insurance and any future insurance we purchase may not provide adequate coverage in the event a claim is made and we may be required to pay claims directly. If we did have to make payment against a claim, then it would impact our financial ability to perform the research, development, and sales activities we have planned.

If our human-use equipment is commercialized, there is always the risk of product defects. Product defects can lead to loss of future sales, decrease in market acceptance, damage to our brand or reputation, product returns and warranty costs, and even product withdrawal from the market. These events can occur whether the defect resides in a component we purchased from a third party or whether it was due to our design and/or manufacture. We expect that our sales agreements will contain provisions designed to limit our exposure to product liability claims. However, we do not know whether these limitations are enforceable in the countries in which the sale is made. Any product liability or other claim brought against us, if successful and of sufficient magnitude, could negatively impact our financial performance, even if we have insurance.

**WE CANNOT BE CERTAIN THAT WE WILL BE ABLE TO MANUFACTURE OUR HUMAN-USE EQUIPMENT IN SUFFICIENT VOLUMES AT COMMERCIALLY REASONABLE RATES.**

Our manufacturing facilities for human-use products will be subject to quality systems regulations, international quality standards and other regulatory requirements, including pre-approval inspection for the human-use equipment and periodic post-approval inspections for all human-use products. While we have undergone and passed a quality systems audit from an international body, we have never undergone a quality systems inspection by the FDA. We may not be able to pass an FDA inspection when it occurs. If our facilities are found not to be up to the FDA standards in sufficient time, prior to United States launch of product, then it will result in a delay or termination of our ability to produce the human-use equipment in our facility. Any delay in production will have a negative effect on our business. While there are no target dates set forth for launch of our products in the United States, we plan on launching these products once we successfully perform a Phase III clinical study, obtain the requisite regulatory approval, and engage a partner who has the financial resources and marketing capacity to bring our products to market.

Our products must be manufactured in sufficient commercial quantities, in compliance with regulatory requirements, and at an acceptable cost to be attractive to purchasers. We rely on third parties to manufacture and assemble most aspects of our equipment.

Disruption of the manufacture of our products, for whatever reason, could delay or interrupt our ability to manufacture or deliver our products to customers on a timely basis. This would be expected to affect revenue and may affect our long-term reputation, as well. In the event we provide product of inferior quality, we run the risk of product liability claims and warranty obligations, which will negatively affect our financial performance.

**IF WE LOSE KEY PERSONNEL OR ARE UNABLE TO ATTRACT AND RETAIN ADDITIONAL, HIGHLY SKILLED PERSONNEL REQUIRED TO DEVELOP OUR PRODUCTS OR OBTAIN NEW COLLABORATIONS, OUR BUSINESS MAY SUFFER.**

We depend, to a significant extent, on the efforts of our key employees, including senior management and senior scientific, clinical, regulatory and other personnel. The development of new therapeutic products requires expertise from a number of different disciplines, some of which is not widely available. We depend upon our scientific staff to discover new product candidates and to develop and conduct pre-clinical studies of those new potential products. Our clinical and regulatory staff is responsible for the design and execution of clinical trials in accordance with FDA requirements and for the advancement of our product candidates toward FDA approval. Our manufacturing staff is responsible for designing and conducting our manufacturing processes in the product in accordance with the applicable FDA Quality System Regulations. The quality and reputation of our scientific, clinical, regulatory and manufacturing staff, especially the senior staff, and their success in performing their responsibilities, are significant factors in attracting potential funding sources and collaborators. In addition, our Chief Executive Officer and Chief Financial Officer and other executive officers are involved in a broad range of critical activities, including providing strategic and operational guidance. The loss of these individuals, or our inability to retain or recruit other key management and scientific, clinical, regulatory, manufacturing and other personnel, may delay or prevent us from achieving our business objectives. We face intense competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations.

**WE MAY NOT MEET ENVIRONMENTAL GUIDELINES AND AS A RESULT COULD BE SUBJECT TO CIVIL AND CRIMINAL PENALTIES.**

Like all companies in our line of work, we are subject to a variety of governmental regulations relating to the use, storage, discharge and disposal of hazardous substances. Our safety procedures for handling, storage and disposal of such materials are designed to comply with applicable laws and regulations. While we believe we are currently in compliance with all material applicable environmental regulations, if we are found to not comply with environmental regulations, or if we are involved with contamination or injury from these materials, then we may be subject to civil and criminal penalties. This would have a negative impact on our reputation and finances, and could result in a slowdown or even complete cessation of our business.

**OUR FACILITIES ARE LOCATED NEAR KNOWN EARTHQUAKE FAULT ZONES, AND THE OCCURRENCE OF AN EARTHQUAKE OR OTHER CATASTROPHIC DISASTER COULD CAUSE DAMAGE TO OUR FACILITIES AND EQUIPMENT.**

Our facilities are located near known earthquake fault zones and are vulnerable to damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously impaired. In addition, the nature of our research activities could cause significant delays in our programs and make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake or other disaster could materially and adversely harm our ability to conduct business.

**WE ARE EXPOSED TO POTENTIAL RISKS FROM RECENT LEGISLATION REQUIRING COMPANIES TO EVALUATE INTERNAL CONTROLS UNDER SECTION 404 OF THE SARBANES-OXLEY ACT OF 2002.**

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the Securities and Exchange Commission adopted rules requiring public companies to include a report of management on our internal controls over financial reporting in our annual reports on Form 10-K that contains an assessment by management of the effectiveness of our internal controls over financial reporting. In addition, our independent auditor must attest to and report on management s assessment of the effectiveness of our internal controls over financial reporting. This requirement first applied to our 2004 Annual Report on Form 10-K.

How companies are implementing these new requirements including internal control reforms, if any, to comply with Section 404 s requirements, and how independent auditors are applying these new requirements and testing companies internal controls, is an evolving process and remains subject to uncertainty. The requirements of Section 404 are ongoing and apply to future years. We expect that our internal controls will continue to evolve as our business activities change. During the course of management s and our independent auditor s review of our internal controls over financial reporting as of December 31, 2005, we did identify two significant control deficiencies that did not rise to the level of material weaknesses, as defined by the Public Company Accounting Oversight Board (PCAOB). Although we will continue to diligently and vigorously review our internal controls over financial reporting in order to ensure compliance with the Section 404 requirements, any control system, regardless of how well designed, operated and evaluated, can provide only reasonable, not absolute, assurance that its objectives will be met.

If, during any year, our auditor is not satisfied with our internal controls over financial reporting or the level at which these controls are documented, designed, operated, tested or assessed, or if the independent auditor interprets the requirements, rules or regulations differently than we do, then our independent auditor may decline to attest to management s assessment or may issue a report that is qualified. This could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements, which ultimately could negatively impact the market price of our common stock and any other securities we offer under this prospectus.

**ANTI-TAKEOVER PROVISIONS IN OUR CHARTER DOCUMENTS, OUR STOCKHOLDER RIGHTS AGREEMENT AND DELAWARE LAW MAY PREVENT OR DELAY REMOVAL OF INCUMBENT MANAGEMENT OR A CHANGE OF CONTROL**

Anti-takeover provisions of our Certificate of Incorporation, our Amended and Restated Stockholders Rights Agreement and Delaware law may have the effect of deterring or delaying attempts by our stockholders to remove or replace management, engage in proxy contests and effect changes in control. The provisions of our charter documents include the ability of our board of directors to issue shares of preferred stock without approval of all our stockholders upon the terms and conditions and (subject only to limitations contained in our Series D Preferred Stock) with the rights, privileges and preferences as our board of directors may determine.

The Rights issued pursuant to our Stockholder Rights Agreement will become exercisable, subject to certain exceptions, after a person or group announces acquisition of 20% or more of our common stock or announces commencement of a tender or exchange offer the consummation of which would result in ownership by the person or group of 20% or more of our common stock.

In addition, as a Delaware corporation, we are subject to Delaware law, including Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder unless certain specific requirements are met as set forth in Section 203.

These provisions, alone or together, could have the effect of deterring or delaying changes in incumbent management, proxy contests or changes in control.

## DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents and information incorporated by reference in this prospectus, include forward-looking statements within the meaning of section 27A of the Securities Act of 1933 and section 21E of the Securities Exchange Act of 1934. Discussions containing these forward-looking statements may be found, among other places, in the About Inovio section of this prospectus, in Business and Management s Discussion and Analysis of Financial Condition and Results of Operations incorporated by reference from our most recent annual report on Form 10-K and our quarterly reports on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Forward-looking statements include the information concerning our possible or assumed future operating results, business strategies, financing plans, competitive position, industry environment, the anticipated impact on our business and financial results of recent and future acquisitions, the effects of competition, our ability to produce new products in a cost-effective manner and estimates relating to our industry. Forward-looking statements may be identified by the use of words like believes, intends, expects, may, will, should or anticipates, or t negative equivalents of those words or comparable terminology, and by discussions of strategies that involve risks and uncertainties.

Actual results may differ materially from those expressed or implied by forward-looking statements for a number of reasons, including those appearing elsewhere in this prospectus under the heading Risk Factors. In addition, we base forward-looking statements on assumptions about future events, which may not prove to be accurate. In light of these risks, uncertainties and assumptions, you should be aware that the forward-looking events described in this prospectus and the documents incorporated by reference in this prospectus may not occur.

**RATIO OF EARNINGS TO FIXED CHARGES AND COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS**

The following table displays our ratio of earnings to fixed charges and combined fixed charges and preferred stock dividends (1):

| | For the Nine Months Ended December 31, 2001 | Year Ended December 31, 2002 | 2003 | 2004 | 2005 | For the Three Months Ended March 31, 2006 |
|---|---|---|---|---|---|---|
| Ratio of earnings to fixed charges (2) | | | | | | |
| Ratio of earnings to combined fixed charges and preferred stock dividends (3) | | | | | | |

(1) We reported a loss from continuing operations for the nine months ended December 31, 2001, the years ended December 31, 2002, 2003, 2004, 2005 and the three months ended March 31, 2006 and would have needed to generate additional income of $5,986,654, $6,069,420, $6,757,489, $11,386,152, $15,479,418 and $2,666,714, respectively, to cover our fixed charges of $134,910, $161,376, $169,244, $123,012, $182,566 and $32,854, respectively. Including preferred stock dividends, we would have needed to generate additional income of $24,968,019, $12,118,557, $26,545,188 and $2,739,079 in the years ended December 31, 2003, 2004, 2005 and the three months ended March 31, 2006, respectively.

(2) For purposes of computing the ratio of earnings to fixed charges, earnings consist of loss from continuing operations before income taxes plus fixed charges. Fixed charges consist of interest expense and an estimate of the interest within rental expense.

(3) For purposes of computing the ratio of earnings to combined fixed charges and preferred stock dividends, earnings consist of loss from continuing operations before income taxes plus fixed charges. Combined fixed charges and preferred stock dividends consist of interest expense, an estimate of the interest within rental expense and preferred stock dividends.

**USE OF PROCEEDS**

Unless otherwise indicated in a prospectus supplement, we intend to use the net proceeds from the sale of the securities under this prospectus for general corporate purposes, including for clinical trials expenses, research and development, general and administrative expenses, manufacturing and potential acquisitions of companies and technologies that complement our business. Pending their application, we expect to invest the net proceeds in investment-grade, interest- bearing instruments.

## DESCRIPTION OF COMMON STOCK

Our authorized capitalization includes 300,000,000 shares of common stock, $0.001 par value per share, of which 30,428,391 shares of common stock were outstanding on May 4, 2006.

Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably dividends as may be declared by our board of directors out of the funds legally available therefore. Each holder of common stock is entitled to one vote for each share held of record by the holder. If we liquidate, dissolve or wind up the company, holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preference of any outstanding preferred stock. The outstanding shares of common stock have no preemptive, subscription, redemption or conversion rights. Cumulative voting for the election of directors is not authorized by our certificate of incorporation, which means that the holders of a majority of the shares voted can elect all of the directors then standing for election. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of any series of preferred stock which we may designate in the future. All of the outstanding shares of common stock are, and the shares of common stock to be issued upon completion of any offering pursuant to this prospectus will be, fully paid and nonassessable.

**Anti-Takeover Provisions**

There are provisions of the Delaware General Corporation Law ( DGCL ), our certificate of incorporation and our bylaws that could have the effect of delaying, deferring or preventing an acquisition of Inovio, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the ability of our stockholders to remove current management or approve transactions that our stockholders may deem to be in their best interests.

*Delaware Law*. We are subject to Section 203 of the DGCL, which restricts our ability to enter into a business combination with an interested stockholder for a period of three years. Generally, a business combination means a merger, asset sale or other transaction resulting in a financial benefit to the stockholder. An interested stockholder means a stockholder who, together with that stockholder s affiliates and associates, owns 15% or more of our outstanding voting stock. These restrictions do not apply if:

- before the date a stockholder becomes an interested stockholder, our board of directors approves either the business combination or the transaction in which the stockholder becomes an interested stockholder;

- upon consummation of the transaction in which the stockholder becomes an interested stockholder, the interested stockholder owns at least 85% of our voting stock outstanding at the time the transaction commenced, subject to exceptions; or

- on or after the date a stockholder becomes an interested stockholder, the business combination is both approved by our board of directors and authorized at an annual or special meeting of our stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

*Certificate of Incorporation and Bylaws.* Some provisions of our certificate of incorporation and bylaws may limit the ability of stockholders to change the size of the board of directors and to fill vacancies on the board of directors. Our certificate of incorporation provides that any action required or permitted to be taken by our stockholders may be taken only at a duly called annual or special meeting of the stockholders. The certificate of incorporation does not provide for cumulative voting in the election of directors. The bylaws also establish procedures, including advance notice procedures, with regard to the nomination, other than by or at the direction of the board of directors, of candidates for elections as directors or for stockholder proposals to be submitted at stockholder meetings.

These and other provisions could have the effect of making it more difficult to effect a change in control of the board of directors. This may discourage tender offers for our common stock, including offers at a premium over the market price. These provisions may also result in a delay in changes in control and of management. These

provisions could have the effect of making it more difficult for proposals favored by stockholders to be presented for consideration.

We have also included in our certificate of incorporation provisions to eliminate the personal liability of our officers and directors for monetary damages resulting from breaches of their fiduciary duty to the extent permitted by Delaware law.

Our stockholder meetings are held at least annually. Pursuant to our certificate of incorporation, we reserve the right to amend any provision of our certificate of incorporation upon the affirmative vote of stockholders entitled to cast at least a majority of all the votes entitled to be cast on the matter.

**Amended and Restated Stockholder Rights Agreement**

Pursuant to our Amended and Restated Rights Agreement, one right is issued for each share outstanding from time to time. The Right attaches to the share and may not be transferred separately from the share until the Right becomes separate and exercisable after the Separation Time. The Separation Time is the date that is ten days after the earlier of the date a person acquires 20% or more of the shares, and the date of the commencement or announcement of a take-over bid (other than a Permitted Bid as defined below). Each Right thereafter constitutes the right to purchase from us one share for an exercise price of $20. Ten days after a Flip-in-Event the Rights are adjusted such that upon payment of the $20 exercise price the holder will receive that number of shares having an aggregate market price, as of the date of exercise, equal to twice the exercise price of the Rights.

Under the Amended and Restated Rights Agreement, a Permitted Bid is a bid made for all of our voting shares and which is open for at least 90 days. If at the end of the 90 days at least 50% of the outstanding voting shares, other than those owned by the bidder and certain related parties, have been tendered, the bidder may take up and pay for the shares but must extend the bid for a further ten days to permit other stockholders to tender. Under the Permitted Bid provision, stockholders are assured of an adequate opportunity to consider the bid and our board of directors will be given ample opportunity to review fully alternate opportunities and to make recommendations to stockholders. Our board of directors is authorized by the Amended and Restated Rights Agreement to redeem the Rights, at its option, at a price of $0.001 per Right and is further authorized to waive the requirements of the Amended and Rights Agreement in connection with a specific take-over bid.

The Rights are designed to protect and maximize the value of our outstanding equity interests in the event of an unsolicited attempt by an acquirer to take over our company in a manner or on terms not approved by our board of directors. Takeover attempts frequently include coercive tactics to deprive our board of directors and its stockholders of any real opportunity to determine our destiny. The rights have been declared by our board in order to deter such tactics, including a gradual accumulation of shares in the open market of 20% or greater position to be followed by a merger or a partial or two-tier tender offer that does not treat all stockholders equally. These tactics unfairly pressure stockholders, squeeze them out of their investment without giving them any real choice and deprive them of the full value of their shares.

The Rights are not intended to prevent a takeover and will not do so. As our board of directors may authorize redemption of the Rights at $0.001 per right at any time prior to the distribution date, the Rights should not interfere with any merger or business combination approved by our board of directors.

However, the Rights may have the effect of rendering more difficult or discouraging our acquisition if such acquisition is deemed undesirable by our board of directors. The Rights may cause substantial dilution to a person or group that attempts to acquire us on terms or in a manner not approved by our board of directors, except pursuant to an offer conditioned upon the negation, purchase or redemption of the Rights.

**Transfer Agent and Registrar**

Our transfer agent and registrar is Computershare Trust Company of Canada, Vancouver, British Columbia, Canada.

**Listing**

Our common stock is listed on the American Stock Exchange under the trading symbol INO.

## DESCRIPTION OF PREFERRED STOCK

Our authorized capitalization also includes 10,000,000 shares of preferred stock, $0.001 par value per share, of which we have designated 1,000 shares as Series A Cumulative Convertible Preferred Stock, par value $0.001 per share, 1,000 share as Series B Cumulative Convertible Preferred Stock, par value $0.001 per share, 4,000 shares as Series C Cumulative Convertible Preferred Stock, par value $0.001 per share and 1,966,292 as Series D Convertible Preferred Stock, par value $0.001 per share. As of the date of this prospectus, the remaining authorized but unissued shares of our preferred stock were not yet designated. We refer to our outstanding shares of Series A and C Cumulative Convertible Preferred Stock and Series D Convertible Preferred Stock as Preferred Stock.

**Outstanding Preferred Stock.**

As of May 4, 2006, we had issued and outstanding

- 2 shares of Series A Preferred Stock, $0.001 par value, which are convertible into 8,333 shares of common stock,
- 228 shares of Series C Preferred Stock, $0.001 par value, which are convertible into 335,461 shares of common stock, and
- 1,373,081 shares of Series D Preferred Stock, $0.001 par value, which are convertible into 1,373,081 shares of common stock.

*Series A and Series B Preferred Stock*. Our Series A Preferred Stock is convertible into our common stock at a conversion price of $2.40 per share. Our Series B Preferred Stock was convertible into our common stock at a conversion price of $2.80 per share. The last of our outstanding shares of our Series B Preferred Stock were converted during the three months ended March 31, 2006. Each holder of our Series A Preferred Stock is entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series A Preferred Stock may be converted on the record date for the taking of a vote. In any event of our voluntary or involuntary liquidation, dissolution or winding up, before any distribution of our assets may be made to or set apart for the holders of Common Stock, the holders of Series A Preferred Stock are entitled to receive payment on a pari passu basis out of our assets in an amount equal to $10,000 per share of Series A Preferred Stock plus any accumulated and unpaid dividends. The holders of our Series A Preferred Stock are entitled to receive an annual dividend at the rate of 6%, payable quarterly. Holders of Series A Preferred Stock are entitled to receive this quarterly dividend through September 30, 2006. These dividends are payable in cash unless the closing price of our common shares for the 20 trading days immediately preceding the dividend payment date is equal to or greater than the conversion price of such shares, in which event we may elect to pay the dividends to the holders in shares of our common stock.

*Series C Preferred Stock.* Our Series C Preferred Stock is convertible into our common stock at a conversion price of $6.80 per share. Each holder of Series C Preferred Stock is entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series C Preferred Stock may be converted on the record date for the taking of a vote. In any event of our voluntary or involuntary liquidation, dissolution or winding up, before any distribution of our assets shall be made to or set apart for the holders of Common Stock, the holders of Series C Preferred Stock are entitled to receive payment on a pari passu basis with holders of our Series A and B Preferred Stock out of our assets in an amount equal to $10,000 per share of Series C Preferred Stock plus any accumulated and unpaid dividends, pari passu . The holders of our Series C Preferred Stock are entitled to receive an annual dividend at the rate of 6%, payable quarterly. Holders of Series C Preferred Stock are entitled to receive this quarterly dividend through June 30, 2007. These dividends are payable in cash unless the closing price of our common shares for the 20 trading days immediately preceding the dividend payment date is equal to or greater than the conversion price of such shares, in which event we may elect to pay the dividends to the holders in common stock.

*Series D Preferred Stock.* Our Series D Preferred Stock is convertible into our common stock on a one-for-one basis. Each holder of Series D Preferred Stock is entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series D Preferred Stock may be converted on the record date for the taking of a vote. In any event of our voluntary or involuntary liquidation, dissolution or winding up, before any distribution of our assets shall be made to or set apart for the holders of Common Stock, the holders of Series D Preferred Stock are entitled to receive payment out of our assets in an amount equal to $3.204 per share of Series D Preferred Stock after payment of liquidation preferences on our Series A and C Preferred Stock. The holders of

our Series D Preferred Stock are entitled to receive dividends on their shares if and when declared by our board of directors.

**Participation Rights in Offerings Under this Prospectus of Certain Holders of Our Preferred Stock**

Holders of our outstanding Series A and C Cumulative Convertible Preferred Stock have participation rights in connection with future offerings our equity or equity-linked securities. Under these participation rights, the holders of shares of our Series A and C Cumulative Convertible Preferred Stock have a right to participate with respect to the issuance or possible issuance by us of any future equity or equity-linked securities or debt which is convertible into equity or in which there is an equity component on the same terms and conditions as we offer to the other purchasers of such securities. Accordingly as all of the securities we may offer under this prospectus are equity or equity-linked securities, we must offer the right participate in any offerings we make under this prospectus to those holders holding shares of our Series A or C Cumulative Convertible Preferred Stock outstanding at the time we make any offering of securities pursuant to this prospectus.

**Undesignated Preferred Stock**

As to our authorized but unissued shares of our preferred stock that we have not yet designated, our certificate of incorporation authorizes our board of directors to issue such of preferred stock from time to time with such designations, preferences, conversion or other rights, voting powers, restrictions, dividends or limitations as to dividends or other distributions, qualifications or terms or conditions of redemption as shall be determined by the board of directors for each class or series of stock subject to the provisions of our certificate of incorporation. Preferred stock is available for possible future financings or acquisitions and for general corporate purposes without further authorization of stockholders unless such authorization is required by applicable law, the rules of the American Stock Exchange or other securities exchange or market on which our stock is then listed or admitted to trading or such preferred stock includes dividends or other distributions, in which case (as discussed below) approval by holders of a majority of our outstanding Series D Preferred Stock is required before our board may authorize such preferred stock.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes could, under some circumstances, could have the effect of delaying, deferring or preventing a change in control of Inovio.

A prospectus supplement relating to any series of preferred stock being offered will include specific terms relating to the offering. Such prospectus supplement will include:

- the title and stated or par value of the preferred stock;
- the number of shares of the preferred stock offered, the liquidation preference per share and the offering price of the preferred stock;
- the dividend rate(s), period(s) and/or payment date(s) or method(s) of calculation thereof applicable to the preferred stock;
- whether dividends shall be cumulative or non-cumulative and, if cumulative, the date from which dividends on the preferred stock shall accumulate;
- the provisions for a sinking fund, if any, for the preferred stock;
- any voting rights of the preferred stock;
- the provisions for redemption, if applicable, of the preferred stock;
- any listing of the preferred stock on any securities exchange;
- the terms and conditions, if applicable, upon which the preferred stock will be convertible into our common stock, including the conversion price or the manner of calculating the conversion price and conversion period;
- if appropriate, a discussion of Federal income tax consequences applicable to the preferred stock;

- any other specific terms, preferences, rights, limitations or restrictions of the preferred stock.

The terms, if any, on which the preferred stock may be convertible into or exchangeable for our common stock will also be stated in the preferred stock prospectus supplement. The terms will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option, and may include

provisions pursuant to which the number of shares of our common stock to be received by the holders of preferred stock would be subject to adjustment.

**Approval Required by Holders of Series D Preferred Stock for Dividends or Other Distributions on Any Capital Stock We Offer Pursuant to this Prospectus**

Under the Certificate of Designation applicable to our Series D Preferred Stock, so long as 35 percent of the shares of our Series D Preferred Stock that we originally issued are outstanding, holders of a majority of those shares must consent to certain actions we take with respect to our capital stock. These actions include increasing our authorized capital stock or the declaring or paying any dividend or other distribution (whether in cash, stock or other property) with respect to our capital stock or that of any our subsidiaries, other than a dividend or other distribution pursuant to the terms of our Series A, B or C Preferred Stock. Accordingly, so long as 35 percent of the shares of Series D Preferred Stock that we originally issued remain outstanding, we would need the consent of holders of a majority of the outstanding shares of our Series D Preferred Stock before we may declare or pay any dividend or make any distribution (including distributions resulting from our redemption or repurchase of any share(s) of our common or preferred stock that we may offer pursuant to this prospectus). At the date of this prospectus, approximately 70 percent of the shares of our Series D Preferred Stock that we originally issued were outstanding.

## DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of preferred stock or common stock. Warrants may be issued independently or together with any preferred stock or common stock, and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between a warrant agent specified in the agreement and us. The warrant agent will act solely as our agent in connection with the warrants of that series and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of some provisions of the securities warrants is not complete. You should refer to the securities warrant agreement, including the forms of securities warrant certificate representing the securities warrants, relating to the specific securities warrants being offered for the complete terms of the securities warrant agreement and the securities warrants. The securities warrant agreement, together with the terms of the securities warrant certificate and securities warrants, will be filed with the SEC in connection with the offering of the specific warrants.

The applicable prospectus supplement will describe the following terms, where applicable, of the warrants in respect of which this prospectus is being delivered:

- the title of the warrants;
- the aggregate number of the warrants;
- the price or prices at which the warrants will be issued;
- the currency or currencies (including composite currencies) in which the price or prices of the warrants may be payable;
- the designation, amount and terms of the offered securities purchasable upon exercise of the warrants;
- if applicable, the date on and after which the warrants and the offered securities purchasable upon exercise of the warrants will be separately transferable;
- the terms of the securities purchasable upon exercise of such warrants and the procedures and conditions relating to the exercise of such warrants;
- any provisions for adjustment of the number or amount of securities receivable upon exercise of the warrants or the exercise price of the warrants;
- the price or prices at which and currency or currencies in which the offered securities purchasable upon exercise of the warrants may be purchased;
- the date on which the right to exercise the warrants shall commence and the date on which the right shall expire;

- the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- if appropriate, a discussion of Federal income tax consequences; and



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- any other material terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

Warrants for the purchase of common stock or preferred stock will be offered and exercisable for U.S. dollars only. Warrants will be issued in registered form only.

Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will, as soon as practicable, forward the purchased securities. If less than all of the warrants represented by the warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

Prior to the exercise of any securities warrants to purchase preferred stock or common stock, holders of the warrants will not have any of the rights of holders of the common stock or preferred stock purchasable upon exercise, including in the case of securities warrants for the purchase of common stock or preferred stock, the right to vote or to receive any payments of dividends on the preferred stock or common stock purchasable upon exercise.

## DESCRIPTION OF UNITS

As specified in the applicable prospectus supplement, we may issue units consisting of shares of common stock, shares of preferred stock or warrants or any combination of such securities.

The applicable prospectus supplement will specify the following terms of any units in respect of which this prospectus is being delivered:

- the terms of the units and of any of the common stock, preferred stock and warrants comprising the units, including whether and under what circumstances the securities comprising the units may be traded separately;

- a description of the terms of any unit agreement governing the units; and

- a description of the provisions for the payment, settlement, transfer or exchange of the units.

## PLAN OF DISTRIBUTION

We may sell the securities offered through this prospectus (i) to or through underwriters or dealers, (ii) directly to purchasers, including our affiliates, (iii) through agents, or (iv) through a combination of any these methods. The securities may be distributed at a fixed price or prices, which may be changed, market prices prevailing at the time of sale, prices related to the prevailing market prices, or negotiated prices. The prospectus supplement will include the following information:

- the terms of the offering;

- the names of any underwriters or agents;

- the name or names of any managing underwriter or underwriters;

- the purchase price of the securities;

- any over-allotment options under which underwriters may purchase additional securities from us;

- the net proceeds from the sale of the securities;

- any delayed delivery arrangements;

- any underwriting discounts, commissions and other items constituting underwriters compensation;

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- any initial public offering price;
- any discounts or concessions allowed or reallowed or paid to dealers;
- any commissions paid to agents; and
- any securities exchange or market on which the securities may be listed.

**Sale Through Underwriters or Dealers**

Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities (described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers.

If dealers are used in the sale of securities offered through this prospectus, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. The prospectus supplement will include the names of the dealers and the terms of the transaction.

**Direct Sales and Sales Through Agents**

We may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The prospectus supplement will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent. Unless otherwise indicated in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. The terms of any such sales will be described in the prospectus supplement.

**Delayed Delivery Contracts**

If the prospectus supplement indicates, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The applicable prospectus supplement will describe the commission payable for solicitation of those contracts.

**Market Making, Stabilization and Other Transactions**

Unless the applicable prospectus supplement states otherwise, other than our common all securities we offer under this prospectus will be a new issue and will have no established trading market. We may elect to list offered securities on an exchange or in the over-the-counter market. Any underwriters that we use in the sale of offered securities may make a market in such securities, but may discontinue such market making at any time without notice. Therefore, we cannot assure you that the securities will have a liquid trading market.

Any underwriter may also engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Rule 104 under the Securities Exchange Act. Stabilizing transactions involve bids to purchase the underlying security in the open market for the purpose of pegging, fixing or maintaining the price of

the securities. Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

**Electronic Auctions**

We may also make sales through the Internet or through other electronic means. Since we may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet (sometimes referred to as the world wide web ) or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you will want to pay particular attention to the description of that system we will provide in a prospectus supplement.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called real-time basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder s individual bids would be accepted, prorated or rejected. Of course, many pricing methods can and may also be used.

Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

**General Information**

Agents, underwriters, and dealers may be entitled, under agreements entered into with us, to indemnification by us against certain liabilities, including liabilities under the Securities Act. Our agents, underwriters, and dealers, or their affiliates, may be customers of, engage in transactions with or perform services for us, in the ordinary course of business.

## LEGAL MATTERS

The validity of the issuance of the shares offered by this prospectus will be passed upon for us by Kirkpatrick & Lockhart Nicholson Graham LLP, Los Angeles, California.

## EXPERTS

The consolidated financial statements of Inovio Biomedical Corporation appearing in Inovio Biomedical Corporation s Annual Report (Form 10-K) for the year ended December 31, 2005, and Inovio Biomedical Corporation management s assessment of the effectiveness of internal control over financial reporting as of December 31, 2005 included therein, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements and management s assessment are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, along with other information with the SEC. You may read and copy any document we file at the public reference facilities maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our common stock is traded on The American Stock Exchange. You may inspect reports and other

information concerning us at the offices of the American Stock Exchange, Inc., 86 Trinity Place, New York, New York 10006. These filings and other information may also be inspected without charge at a Web site maintained by the SEC. The address of the site is http://www.sec.gov.

**INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE**

This prospectus is part of a registration statement filed with the SEC. The SEC allows us to incorporate by reference into this prospectus the information that we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. The following documents were filed with the SEC pursuant to the Exchange Act and are incorporated by reference and made a part of this prospectus:

- our Annual Report on Form 10-K for the year ended December 31, 2005 filed with the SEC on March 16, 2006;
- our Quarterly Report on Form 10-Q for the three months ended March 31, 2006 filed with the SEC on May 9, 2006;
- our Current Reports on Form 8-K filed with the SEC on January 6, 2006, March 21, 2006 and April 3, 2006;
- our definitive proxy statement filed with the SEC on March 30, 2006;
- the description of our capital stock contained in our registration statement on Form 8-A filed with the SEC on December 4, 1998, including any amendment or report filed for the purpose of updating such description.

The documents listed above and all documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 subsequent to the date of this initial registration statement and prior to effectiveness of this registration statement, or prior to the filing of a post-effective amendment that indicates that all securities offered herein have been sold or which deregisters all securities remaining unsold, shall be deemed to be incorporated by reference into this prospectus and to be a part of it from the date of filing such documents.

Any statement contained in a document that is incorporated by reference will be modified or superseded for all purposes to the extent that a statement contained in this prospectus, or in any other document that is subsequently filed with the SEC and incorporated by reference, modifies or is contrary to that previous statement. Any statement so modified or superseded will not be deemed a part of this prospectus except as so modified and superseded.

We will provide without charge to each person to whom this prospectus is delivered, upon oral or written request, a copy of any or all of the foregoing documents incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the information that this prospectus incorporates). Written or telephone requests should be directed to Shareholder Relations at Inovio Biomedical Corporation, 11494 Sorrento Valley Road, San Diego, CA 92121-1318, telephone number (858) 597-6006. Our website address is www.inovio.com.

You should rely only on the information contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different or additional information. We will not make an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or any supplement is accurate as of any date other than the date of those documents.