

TARGETED GENETICS CORP /WA/

Form 424B5

January 04, 2005

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PROSPECTUS SUPPLEMENT

Filed pursuant to Rule 424(b)(5)
Registration No. 333-116600

®

Targeted Genetics Corporation

3,508,389 Shares of Common Stock

We are offering 3,508,389 shares of our common stock through this prospectus supplement and the accompanying prospectus at a price of approximately \$1.52 per share to entities affiliated with two investors, Enterprise Partners and Venrock Associates. You should read both this prospectus supplement and the prospectus carefully before you invest in our common stock. The prospectus may not be used to sell securities unless accompanied by this prospectus supplement.

Our common stock is quoted on the NASDAQ SmallCap Market under the symbol TGEN. The last reported sales price of our common stock on December 30, 2004 was \$1.47 per share.

Investing in our common stock involves risks. See Risk Factors beginning on page S-8.

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

The date of this prospectus supplement is December 31, 2004

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You should rely only on the information provided 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 not assume that the information in this prospectus supplement and the accompanying prospectus is accurate as of any date other than its date, regardless of the time of delivery of the prospectus supplement and the accompanying prospectus or any sale of common stock.

This prospectus supplement and the accompanying prospectus is an offer to sell and a solicitation of an offer to buy the securities offered by this prospectus supplement and the accompanying prospectus only in jurisdictions where the offer or sale is permitted.

In this prospectus, Targeted Genetics, we, us and our refer to Targeted Genetics Corporation and its subsidiaries

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we have filed with the Securities and Exchange Commission, or SEC, using the SEC's shelf registration process. Under the shelf registration statement and in accordance with the shelf registration process, we may sell up to 16,300,000 shares of our common stock from time to time after the effectiveness of the shelf registration statement of which this prospectus supplement is a part. The shelf registration statement was declared effective by the SEC on July 7, 2004. This prospectus supplement describes the specific details regarding this offering, including the price, the amount of common stock being offered and the risks of investing in our common stock. The accompanying prospectus provides general information about us, some of which, such as the section entitled "Plan of Distribution," may not apply to this offering. If information in this prospectus supplement is inconsistent with the accompanying prospectus or the information incorporated by reference, you should rely on this prospectus supplement. You should read both this prospectus supplement and the accompanying prospectus together with the additional information about Targeted Genetics described in this prospectus supplement in the section below entitled "Where You Can Find More Information."

TARGETED GENETICS CORPORATION

This summary does not contain all the information about Targeted Genetics Corporation that may be important to you. You should read the more detailed information and consolidated financial statements and related notes that are incorporated by reference and are considered to be a part of this prospectus supplement.

Targeted Genetics Corporation develops gene therapy products and technologies for treating both acquired and inherited diseases. Our gene therapy product candidates are designed to treat disease by regulating cellular function at a genetic level. This involves introducing genetic material into target cells and expressing it in a manner that provides the desired effect. We have assembled a broad base of proprietary intellectual property that we believe gives us the potential to address the significant diseases that are the primary focus of our business. Our proprietary intellectual property includes genes, methods of transferring genes into cells, processes to manufacture our lead gene delivery product candidates and other proprietary technologies and processes. In addition, we have established expertise and development capabilities focused in the areas of preclinical research and biology, manufacturing and manufacturing process scale-up, quality control, quality assurance, regulatory affairs and clinical trial design and implementation. We believe that our focus and expertise will enable us to develop products based on our proprietary intellectual property.

Gene therapy products involve the use of delivery vehicles, called vectors, to place genetic material into target cells. Our proprietary vector technologies include both viral and synthetic vectors. Our viral vector development activities, which use modified viruses to deliver genes into cells, focus primarily on adeno-associated virus, or AAV, a common virus that has not been associated with any human disease or illness. We believe that AAV provides a number of safety and gene delivery advantages over other viruses for several of our potential gene therapy products. Our synthetic vectors deliver genes into cells using lipids, which are fatty, water-insoluble organic substances that can promote gene uptake through cell membranes. We believe

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that synthetic vectors may provide a number of gene delivery advantages for repeated, efficient delivery of therapeutic genes into rapidly dividing cells, such as certain types of tumor cells. Although our current product development candidates utilize AAV as the delivery vector, we believe that possessing capabilities in both viral and synthetic approaches provides advantages in our corporate partnering efforts and increases the range of our potential products that may reach the market.

We have an AAV-based product candidate under development for treating cystic fibrosis that is being evaluated in a second Phase II clinical trial that was initiated in July 2003. We designed this trial to enroll up to 100 patients and are conducting it in collaboration with the Cystic Fibrosis Foundation, or CF Foundation. In June 2004, we announced that an independent data monitoring committee, or DMC, met for a scheduled interim analysis of this Phase II clinical trial. Based upon its review, the DMC recommended continuation of the study as planned. The DMC provided its recommendation based upon safety parameters and an analysis of whether or not there was a chance that, upon full patient enrollment, the study could show a statistically significant positive impact on lung function measurements in patients treated with tgAAVCF compared to placebo. We expect to complete patient accrual and dosing by the end of 2004 and to present data from the trial in the first half of 2005. This second Phase II trial follows an initial repeat dosing trial for which we announced final data in June 2003. Data from this trial showed a good safety profile and indicated a statistically significant improvement in lung function at day 30 and a decrease in levels of an inflammatory cytokine at day 14 in patients treated with tgAAVCF when compared to placebo.

We have an AAV-based prophylactic vaccine candidate for high-risk populations in developing nations to protect against the progression of Human Immunodeficiency Virus, or HIV, infection to Acquired Immune Deficiency Syndrome, or AIDS. This program is being developed in a collaboration with the International AIDS Vaccine Initiative, or IAVI, a non-profit organization, and The Columbus Children's Research Institute at Children's Hospital in Columbus, Ohio, or CCRI. In December 2003, we initiated a Phase I initial dose escalation safety trial in humans for our AIDS vaccine product candidate in Europe. This dose-escalation safety trial is designed to enroll up to 50 volunteers who are uninfected with HIV and in good health. In September 2004, we announced the completion of enrollment and dosing of the 50 volunteers planned for this study. Each volunteer in this trial received a single injection of the vaccine candidate or placebo and will be monitored for safety and immune response. In an effort to study the safety and immune response after a second dose, the volunteers who participated in this trial will also be offered a second dose once appropriate regulatory approvals are obtained. After the required follow-up, we will complete analysis of the safety and immune response data and expect to present results in the first half of 2005. As part of the clinical development of the tgAAC09 vaccine, we are also assessing the evaluation of this vaccine in other non-industrialized countries for which this vaccine is designed. In addition, we continue to pursue a multi-component AIDS vaccine strategy that will include AAV-mediated delivery of multiple HIV genes.

We have an AAV-based product candidate for the treatment of rheumatoid arthritis. In March 2004, we initiated a Phase I clinical trial for this product candidate for treating rheumatoid arthritis. This dose-escalation safety trial is designed to enroll up to 32 patients with rheumatoid arthritis and is being conducted at multiple sites in the United States and Canada. Patients will be monitored for safety and secondarily for improvements in arthritis signs and symptoms. We

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expect to complete patient accrual and dosing in this trial and to be able to present data from the trial in the first half of 2005.

We have developed processes to manufacture our potential products using methods and at a scale amenable to clinical development and expandable to large-scale production for advancing our potential products to commercialization. These methods are similar to the methods used to manufacture other biologics. As a result, we evaluated and continue to evaluate opportunities to utilize excess capacity to manufacture biologics for other companies. In March 2003, we entered into a manufacturing services agreement with GenVec, Inc., or GenVec, to manufacture clinical supply of GenVec's cancer product candidate, an adeno-viral-based gene therapy product. Earlier in 2004, we completed our manufacturing work for GenVec. We also believe that we have established broad capabilities in applying our gene delivery technologies and our development infrastructure into several potential new areas that are beyond the scope of our three core programs under development. We believe that this may enable us to establish new strategic or collaborative relationships with others.

We believe that a wide range of diseases may potentially be treated, or prevented, with gene-based products, including cancer, genetic diseases and infectious diseases. We believe that there is also a significant opportunity to treat diseases that are currently treated using proteins and monoclonal antibodies, or small molecule drugs. These diseases may be more effectively treated by gene-based therapies due to their ability to provide a long-term or a localized method of treatment. Additionally, we believe that there are potential therapeutic applications where a gene-based approach to delivering a therapeutic protein may be preferred due to inherent difficulties in delivering the therapeutic protein itself. Our business strategy is to develop multiple gene delivery systems, which we believe will maximize our product opportunities. Using AAV gene delivery systems, we are developing product candidates across multiple diseases with the belief that gene-based therapies may provide a means to treat diseases not fully treatable with current biologic and pharmaceutical drugs. We believe that, if successful, we can establish significant market potential for our product candidates. There currently are no commercially available gene therapy products in the United States. We intend to pursue product development programs to enable us to demonstrate proof of concept and eventually commercialize gene-based therapeutics to address currently unmet medical needs in treating disease.

The development of pharmaceutical products, including our possible cystic fibrosis, AIDS and rheumatoid arthritis products discussed above, involves extensive preclinical development followed by human clinical trials that take several years or more to complete. The length of time required to completely develop any product candidate varies substantially according to the type, complexity and novelty of the product candidate, the degree of involvement by a development partner, and the intended use of the product candidate. Our commencement and rate of completion of clinical trials may vary or be delayed for many reasons, including those discussed in the section of this prospectus supplement entitled "Risk Factors."

We were incorporated in the state of Washington in 1989. Our executive offices are located at 1100 Olive Way, Suite 100, Seattle, Washington 98101, and our telephone number is (206) 623-7612.

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For more information about Targeted Genetics, you should read the prospectus supplement and the information described in the section of this prospectus entitled "Where You Can Find More Information," including our consolidated financial statements and related notes.

SIMULTANEOUS OFFERING

We are conducting simultaneously with this offering another offering to the same investors or their affiliates purchasing our common stock in this offering, but using another prospectus supplement, base prospectus and registration statement we filed with the Securities and Exchange Commission. Concurrently with this offering and our simultaneous offering, we are entering into a collaboration agreement and a manufacturing agreement with Celladon Corporation, or Celladon. The purchasers of our shares of common stock in this offering and the simultaneous offering are investors in Celladon. As of the date of this prospectus supplement, the purchasers in this offering and the simultaneous offering, Enterprise Partners and affiliated entities own approximately 34% of the outstanding shares of Celladon and Venrock Associates and affiliated entities own approximately 28% of the outstanding shares of Celladon.

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THE OFFERING

| | |
|--|--|
| Common stock offered by Targeted Genetics in this Offering. | 3,508,389 shares |
| Common stock offered by Targeted Genetics in offering occurring simultaneously with this Offering. | 445,743 shares |
| Common stock to be outstanding after this Offering and offering occurring simultaneously with this Offering. | 85,600,934 shares |
| Use of proceeds from this Offering and the offering occurring simultaneously with this Offering. | \$2 million is be used to perform activities under our collaboration agreement and manufacturing agreement with Celladon and the remainder is to be used for working capital and other general corporate purposes. |
| Nasdaq SmallCap Market symbol. | TGEN |

The number of shares of common stock to be outstanding after this offering is based on 81,646,802 shares outstanding on September 30, 2004. It excludes:

6,129,289 shares of common stock issuable upon exercise of options outstanding as of September 30, 2004, of which 3,279,626 shares are exercisable, under our 1992 Restated Stock Option Plan, our Stock Option Plan for Nonemployee Directors, our 1999 Stock Option Plan and our 2000 Genovo, Inc. Roll-over Stock Option Plan at a weighted average exercise price of \$3.21 per share; and

4,096,108 shares available for grant as of September 30, 2003 under our stock option plans.

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If you invest in our common stock, your interest will be diluted by an amount equal to the difference between the public offering price and the net tangible book value per share of common stock after this offering and the offering we are conducting simultaneously with this offering. We calculate net tangible book value per share by dividing the net tangible book value (total assets less intangible assets and total liabilities) by the number of outstanding shares of common stock.

Our net tangible book value at September 30, 2004 was \$14.4 million, or \$0.18 per share of common stock. After giving effect to the sale of 3,508,389 shares of common stock in this offering and 445,743 shares in the simultaneous offering at the fixed price of approximately \$1.52 per share, and our receipt of the net proceeds from the sale of those shares, our adjusted net tangible book value at September 30, 2004 would be \$20.4 million, or \$0.24 per share. This represents an immediate increase in pro forma net tangible book value of \$0.06 per share to existing shareholders and an immediate and substantial dilution of \$1.28 per share to new investors. The following table illustrates this per share dilution:

| | |
|--|---------|
| Approximate fixed price per share | \$ 1.52 |
| Net tangible book value per share at September 30, 2004 | \$ 0.18 |
| Increase in net tangible book value per share attributable to existing shareholders | \$ 0.06 |
| Net tangible book value per share after this offering and the offering occurring simultaneously with this offering | \$ 0.24 |
| Dilution per share to new investors | \$ 1.28 |

These calculations exclude:

6,129,289 shares of common stock issuable upon exercise of options outstanding as of September 30, 2004, of which 3,279,626 shares are exercisable, under our 1992 Restated Stock Option Plan, our Stock Option Plan for Nonemployee Directors, our 1999 Stock Option Plan and our 2000 Genovo, Inc. Roll-over Stock Option Plan at a weighted average exercise price of \$3.21 per share; and

4,096,108 shares available for grant as of September 30, 2004 under our stock option plans.

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RISK FACTORS

This offering involves a high degree of risk. Before you invest in our common stock, you should carefully read and consider the following risk factors. If any of these risks actually occur, our business, operating results or financial condition could be harmed. This could cause the trading price of our stock to decline, and you could lose all or part of your investment.

Risks Related to Our Business

We expect to continue to operate at a loss and may never become profitable.

Substantially all of our revenue has been derived under collaborative research and development agreements relating to the development of our potential product candidates. We have incurred, and will continue to incur for the foreseeable future, significant expense to develop our research and development programs, conduct preclinical studies and clinical trials, seek regulatory approval for our product candidates and provide general and administrative support for these activities. As a result, we have incurred significant net losses since inception, and we expect to continue to incur substantial additional losses in the future. As of September 30, 2004, we had an accumulated deficit of approximately \$229 million. We may never generate profits and, if we do become profitable, we may be unable to sustain or increase profitability.

All of our product candidates are in early-stage clinical trials or preclinical development, and if we are unable to successfully develop and commercialize our product candidates we will be unable to generate sufficient capital to maintain our business.

In July 2003, we initiated a confirmatory Phase II clinical trial for our cystic fibrosis product candidate in the United States. In December 2003, we initiated a Phase I trial for our AIDS vaccine product candidate in Europe. In March 2004, we initiated a Phase I trial for our rheumatoid arthritis product candidate in the United States and Canada. Our product candidates for cancer have been evaluated in Phase I and Phase II clinical trials. We will not generate any product revenue for at least several years and then only if we can successfully develop and commercialize our product candidates. Commercializing our potential products depends on successful completion of additional research and development and testing, in both preclinical development and clinical trials. Clinical trials may take several years or more to complete. The commencement, cost and rate of completion of our clinical trials may vary or be delayed for many reasons, including the risks discussed elsewhere in this section. If we are unable to successfully complete preclinical and clinical development of some or all of our product candidates in a timely manner, we may be unable to generate sufficient product revenue to maintain our business.

Even if our potential products succeed in clinical trials and are approved for marketing, these products may never achieve market acceptance. If we are unsuccessful in commercializing our product candidates for any reason, including greater effectiveness or economic feasibility of competing products or treatments, the failure of the medical community or the public to accept or use any products based on gene delivery, inadequate marketing and distribution capabilities or other reasons discussed elsewhere in this section, we will be unable to generate sufficient product revenue to maintain our business.

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If we are unable to raise additional capital when needed, we will be unable to conduct our operations and develop our potential products.

Because internally generated cash flow will not fund development and commercialization of our product candidates, we will require substantial additional financial resources. Our future capital requirements will depend on many factors, including:

the rate and extent of scientific progress in our research and development programs;

the timing, costs and scope of, and our success in, conducting clinical trials, obtaining regulatory approvals and pursuing patent prosecutions;

competing technological and market developments;

the timing and costs of, and our success in, any commercialization activities and facility expansions, if and as required; and

the existence and/or outcome of any litigation or administrative proceedings involving intellectual property.

As of September 30, 2004, we had approximately \$31.3 million in cash and cash equivalents. We expect that our cash resources at September 30, 2004 and the funding expected from IAVI to fund 2004 work under our AIDS vaccine collaboration will be sufficient to fund our operations until at least the beginning of 2006. While we expect this program to continue through at least the duration of the current collaboration term, we have not established the work plan and budget for 2005 and 2006 with IAVI and have therefore not yet made an assumption as to the level of funding that we may receive from IAVI in those years. We are evaluating opportunities to obtain additional capital to fund our operations beyond that time. Additional sources of financing could involve one or more of the following:

extending or expanding our current collaborations;

entering into additional product development collaborations;

selling or licensing our technology or product candidates;

borrowing under loan or equipment leasing arrangements;

issuing equity in the public or private markets; or

issuing debt.

Additional funding may not be available to us on reasonable terms, if at all.

The funding that we expect to receive from IAVI depends on continued scientific progress under the collaboration and IAVI's ability and willingness to continue or extend the collaboration. If we are unable to successfully access additional capital, we may need to scale

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back, delay or terminate one or more of our key development programs, curtail capital expenditures or reduce other operating activities. We may also be required to relinquish some rights to our technology or product candidates or grant or take licenses on unfavorable terms, either of which would reduce the ultimate value to us of our technology or product candidates.

The regulatory approval process for our product candidates is costly, time-consuming and subject to unpredictable changes and delays, and our product candidates may never receive regulatory approval.

No gene therapy products have received regulatory approval for marketing from the U.S. Food and Drug Administration, or FDA. Because our product candidates involve new and unproven technologies, we believe that the regulatory approval process may proceed more slowly compared to clinical trials involving traditional drugs. The FDA and applicable state and foreign regulators must conclude at each stage of clinical testing that our clinical data suggest acceptable levels of safety in order for us to proceed to the next stage of clinical trials. In addition, gene therapy clinical trials conducted at institutions that receive funding for recombinant DNA research from the U.S. National Institutes of Health, or NIH, are subject to review by the NIH's Office of Biotechnology Activities Recombinant DNA Advisory Committee, or RAC. Although NIH guidelines do not have regulatory status, the RAC review process can impede the initiation of the trial, even if the FDA has reviewed the trial and approved its initiation. Moreover, before a clinical trial can begin at an NIH-funded institution, that institution's Institutional Biosafety Committee must review the proposed clinical trial to assess the safety of the trial.

The regulatory process for our product candidates is costly, time-consuming and subject to unpredictable delays. The clinical trial requirements of the FDA, NIH and other agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use of the potential products. In addition, regulatory requirements governing gene and cell therapy products have changed frequently and may change in the future. Accordingly, we cannot predict how long it will take or how much it will cost to obtain regulatory approvals for clinical trials or for manufacturing or marketing our potential products. Some or all of our product candidates may never receive regulatory approval. A product candidate that appears promising at an early stage of research or development may not result in a commercially successful product. Our clinical trials may fail to demonstrate the safety and efficacy of a product candidate or a product candidate may generate unacceptable side effects or other problems during or after clinical trials. Should this occur, we may have to delay or discontinue development of the product candidate, and the corporate partner that supports development of that product candidate may terminate its support. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

If we are unable to obtain or maintain licenses for necessary third-party technology on acceptable terms or to develop alternative technology, we may be unable to develop and commercialize our product candidates.

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We have entered into exclusive and nonexclusive license agreements that give us and our partners rights to use technologies owned or licensed by commercial and academic organizations in the research, development and commercialization of our potential products. For example, we have a gene transfer technology license agreement with Amgen Inc., or Amgen, as the successor to Immunex Corporation, or Immunex, under which we have license rights to certain Immunex proprietary technology specifically applicable to gene therapy applications. In a February 2004 letter, Amgen took the position that we are not licensed, either exclusively or non-exclusively, to use Immunex intellectual property covering TNFR:Fc or therapeutic uses for TNFR:Fc. We have responded with a letter confirming our confidence that the gene transfer technology license agreement provides us with an exclusive worldwide license to use the gene construct coding for TNFR:Fc for gene therapy applications. We have had and continue to have further communications with Amgen regarding our differences. Notwithstanding our confidence, it is possible that a resolution of those differences, through litigation or otherwise, could cause delay or discontinuation of our development of tgAAC94 or our inability to commercialize any resulting product.

We believe that we will need to obtain additional licenses to use patents and unpatented technology owned or licensed by others for use, compositions, methods, processes to manufacture compositions, processes to manufacture and purify gene delivery product candidates and other technologies and processes for our present and potential product candidates. If we are unable to maintain our current licenses for third-party technology or obtain additional licenses on acceptable terms, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates. In addition, the license agreements for technology for which we hold exclusive licenses typically contain provisions that require us to meet minimum development milestones in order to maintain the license on an exclusive basis for some or all fields of the license. We also have license agreements for some of our technologies, which may require us to sublicense certain of our rights. If we do not meet these requirements, our licensor may convert all or a portion of the license to a nonexclusive license or, in some cases, terminate the license.

In many cases, patent prosecution of our licensed technology is controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

the scope of rights granted under the license agreement and other interpretation-related issues;

the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;

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the sublicensing of patent and other rights under our collaborative development relationships;

the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and

the priority of invention of patented technology.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

Failure to recruit patients could delay or prevent clinical trials of our potential products, which could delay or prevent the development of potential products.

Identifying and qualifying patients to participate in clinical trials of our potential products is critically important to our success. The timing of our clinical trials depends on the speed at which we can recruit patients to participate in testing our product candidates. We have experienced delays in some of our clinical trials, and we may experience similar delays in the future. If patients are unwilling to participate in our gene therapy trials because of negative publicity from adverse events in the biotechnology or gene therapy industries or for other reasons, including competitive clinical trials for similar patient populations, the timeline for recruiting patients, conducting trials and obtaining regulatory approval of potential products will be delayed. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of the clinical trials altogether.

Litigation involving intellectual property, product liability or other claims and product recalls could strain our resources, subject us to significant liability, damage our reputation or result in the invalidation of our proprietary rights.

As our product development efforts progress, especially in potentially significant markets such as AIDS or rheumatoid arthritis therapies, the risk increases that others may claim that our processes and potential products infringe on their intellectual property rights. In addition, administrative proceedings, litigation or both may be necessary to enforce our intellectual property rights or determine the rights of others. Defending or pursuing these claims, regardless of their merit, would be costly and would likely divert management's attention and resources away from our operations. If there were to be an adverse outcome in litigation or an interference proceeding, we could face potential liability for significant damages or be required to obtain a license to the patented process or technology at issue, or both. If we are unable to obtain a license on acceptable terms, or to develop or obtain alternative technology or processes, we may be unable to manufacture or market any product or potential product that uses the affected process or technology.

Clinical trials and the marketing of any potential products may expose us to liability claims resulting from the testing or use of our products. Gene therapy treatments are new and unproven, and potential known and unknown side effects of gene therapy may be serious and

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potentially life-threatening. Product liability claims may be made by clinical trial participants, consumers, healthcare providers or other sellers or users of our products. Although we currently maintain liability insurance, the costs of product liability and other claims against us may exceed our insurance coverage. In addition, we may require increased liability coverage as additional product candidates are used in clinical trials and commercialized. Liability insurance is expensive and may not continue to be available on acceptable terms. A product liability or other claim or product recall not covered by or exceeding our insurance coverage could significantly harm our financial condition. In addition, adverse publicity resulting from a product recall or a liability claim against us, one of our partners or another gene therapy company could significantly harm our reputation and make it more difficult to obtain the funding and collaborative partnerships necessary to maintain our business.

If we lose IAVI as a partner, we may be unable to develop our AIDS vaccine product candidate.

We have a collaborative development agreement with IAVI, which expires in December 2006, that we expect to provide us with funding to reimburse research and development and manufacturing expenses we incur in connection with the collaboration. In addition, our collaboration with IAVI provides funding for the Phase I clinical trial for our AIDS vaccine product candidate. A significant portion of our operating and clinical trial expenses are funded through our collaborative agreements with IAVI.

IAVI has the right to terminate the collaboration or its obligation to provide funding at any time for any reason with 90 days notice, which would significantly affect our operating activities. The loss of significant amounts of collaborative or clinical trial funding could cause the delay, reduction or termination of the related research and development programs, and a reduction in capital expenditures and other operating activities necessary to support general operations. Such a reduction could further impede our ability to develop our product candidates.

If we do not attract and retain qualified personnel, we may be unable to develop and commercialize some of our potential products.

Our future success depends in large part on our ability to attract and retain key technical and management personnel. All of our employees, including our executive officers, can terminate their employment with us at any time. We have programs in place designed to retain personnel, including competitive compensation packages and programs to create a positive work environment. Other companies, research and academic institutions and other organizations in our field compete intensely for employees, however, and we may be unable to retain our existing personnel or attract additional qualified employees and consultants. If we experience significant turnover or difficulty in recruiting new personnel, our research and development of product candidates could be delayed and we could experience difficulty in generating sufficient revenue to maintain our business.

If our partners or scientific consultants terminate, reduce or delay our relationships with them, we may be unable to develop our potential products.

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Our partners provide funding, manage regulatory filings, aid and augment our internal research and development efforts and provide access to important intellectual property and know-how. Their activities include, for example, support in processing the regulatory filings of our product candidates and funding clinical trials. Our outside scientific consultants and contractors perform research, develop technology and processes to advance and augment our internal efforts and provide access to important intellectual property and know-how. Their activities include, for example, clinical evaluation of our product candidates, product development activities performed under our research collaborations, research under sponsored research agreements and contract manufacturing services. Collaborations with established pharmaceutical and biotechnology companies and academic, research and public health organizations often provide a measure of validation of our product development efforts in the eyes of securities analysts, investors and the medical community. The development of certain of our potential products, and therefore the success of our business, depends on the performance of our partners, consultants and contractors. If they do not dedicate sufficient time, regulatory or other technical resources to the research and development programs for our product candidates or if they do not perform their obligations as expected, we may experience delays in, and may be unable to continue, the preclinical or clinical development of those product candidates. Each of our collaborations and scientific consulting relationships concludes at the end of the term specified in the applicable agreement unless we and our partners agree to extend the relationship. Any of our partners may decline to extend the collaboration, or may be willing to extend the collaboration only with a significantly reduced scope, for a number of scientific or business reasons. Competition for scientific consultants and partners in gene therapy is intense. We may be unable to successfully maintain our existing relationships or establish additional relationships necessary for the development of our product candidates on acceptable terms, if at all. If we are unable to do so, our research and development programs may be delayed or we may lose access to important intellectual property or know-how.

The success of our clinical trials and preclinical studies may not be indicative of results in a large number of patients of either safety or efficacy.

The successful results of our technology in preclinical studies using animal models may not be predictive of the results that we will see in our clinical trials. In addition, results in early-stage clinical trials are based on limited numbers of patients and generally test for drug safety rather than efficacy. Our reported progress and results from our early phases of clinical testing of our product candidates may not be indicative of progress or results that will be achieved from larger populations, which could be less favorable. Moreover, we do not know if the favorable results we have achieved in clinical trials will have a lasting effect. If a larger group of patients does not experience positive results, or if any favorable results do not demonstrate a beneficial effect, our product candidate for cystic fibrosis, or any other potential products that we advance to clinical trials, may not receive approval from the FDA for further clinical trials or commercialization.

We may be unable to adequately protect our proprietary rights domestically or overseas, which may limit our ability to successfully market any product candidates.

Our success depends substantially on our ability to protect our proprietary rights and operate without infringing on the proprietary rights of others. We own or license patents and

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patent applications, and will need to license additional patents, for genes, processes, practices and techniques critical to our present and potential product candidates. If we fail to obtain and maintain patent or other intellectual property protection for this technology, our competitors could market competing products using those genes, processes, practices and techniques. The patent process takes several years and involves considerable expense. In addition, patent applications and patent positions in the field of biotechnology are highly uncertain and involve complex legal, scientific and factual questions. Our patent applications may not result in issued patents and the scope of any patent may be reduced both before and after the patent is issued. Even if we secure a patent, the patent may not provide significant protection and may be circumvented or invalidated.

We also rely on unpatented proprietary technology and technology that we have licensed on a nonexclusive basis. While we take precautions to protect our proprietary unpatented technology, we may be unable to meaningfully protect this technology from unauthorized use or misappropriation by a third party. Our competitors could also obtain rights to our nonexclusively licensed proprietary technology. In any event, other companies may independently develop equivalent proprietary information and techniques. If our competitors develop and market competing products using our unpatented or nonexclusively licensed proprietary technology or substantially similar technology, our products, if successfully developed, could suffer a reduction in sales or be forced out of the market.

If we do not develop adequate manufacturing, sales, marketing and distribution capabilities, either alone or with our business partners, we will be unable to generate sufficient product revenue to maintain our business.

We currently do not have the physical capacity to manufacture large-scale quantities of our potential products. This could limit our ability to conduct large clinical trials of a product candidate and to commercially launch a successful product candidate. In order to manufacture product at such scale, we will need to expand or improve our current facilities and staff or supplement them through the use of contract providers. If we are unable to obtain and maintain the necessary manufacturing capabilities, either alone or through third parties, we will be unable to manufacture our potential products in quantities sufficient to sustain our business. Moreover, we are unlikely to become profitable if we, or our contract providers, are unable to manufacture our potential products in a cost-effective manner.

In addition, we have no experience in sales, marketing and distribution. To successfully commercialize any products that may result from our development programs, we will need to develop these capabilities, either on our own or with others. We intend to enter into collaborations with other entities to utilize their mature marketing and distribution capabilities, but we may be unable to enter into marketing and distribution agreements on favorable terms, if at all. If our current or future collaborative partners do not commit sufficient resources to timely marketing and distributing our future products, if any, and we are unable to develop the necessary marketing and distribution capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business.

Post-approval manufacturing or product problems or failure to satisfy applicable regulatory requirements could prevent or limit our ability to market our products.

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Commercialization of any products will require continued compliance with FDA and other federal, state and local regulations. For example, our current manufacturing facility, which is designed for manufacturing our AAV vectors for clinical and development purposes, is subject to the Good Manufacturing Practices requirements and other regulations of the FDA, as well as to other federal, state and local regulations such as the Occupational Health and Safety Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act and the Environmental Protection Act. Any future manufacturing facilities that we may construct for large-scale commercial production will also be subject to regulation. We may be unable to obtain regulatory approval for or maintain in operation this or any other manufacturing facility. In addition, we may be unable to attain or maintain compliance with current or future regulations relating to manufacture, safety, handling, storage, record keeping or marketing of potential products. If we fail to comply with applicable regulatory requirements or discover previously unknown manufacturing, contamination, product side effects or other problems after we receive regulatory approval for a potential product, we may suffer restrictions on our ability to market the product or be required to withdraw the product from the market.

Risks Related to Our Industry

Adverse events in the field of gene therapy could damage public perception of our potential products and negatively affect governmental approval and regulation.

Public perception of our product candidates could be harmed by negative events in the field of gene therapy. For example, in 2002, although ten patients in a French academic clinical trial being treated for x-linked severe combined immunodeficiency in a gene therapy trial using a retroviral vector showed correction, two developed leukemia. Serious adverse events, including patient deaths have occurred in clinical trials. Adverse events and the resulting publicity, as well as any other adverse events in the field of gene therapy that may occur in the future, could result in a decrease in demand for any products that we may develop. The commercial success of our product candidates will depend in part on public acceptance of the use of gene therapy for preventing or treating human diseases. If public perception is influenced by claims that gene therapy is unsafe, our product candidates may not be accepted by the general public or the medical community. The public and the medical community may conclude that our technology is unsafe.

Future adverse events in gene therapy or the biotechnology industry could also result in greater governmental regulation, unfavorable public perception, stricter labeling requirements and potential regulatory delays in the testing or approval of our potential products. Any increased scrutiny could delay or increase the costs of our product development efforts or clinical trials.

Our use of hazardous materials exposes us to liability risks and regulatory limitations on their use, either of which could reduce our ability to generate product revenue.

Our research and development activities involve the controlled use of hazardous materials, including chemicals, biological materials and radioactive compounds. Our safety procedures for handling, storing and disposing of these materials must comply with federal, state and local laws and regulations, including, among others, those relating to solid and hazardous waste management, biohazard material handling, radiation and air pollution control. We may be

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required to incur significant costs in the future to comply with environmental or other applicable laws and regulations. In addition, we cannot eliminate the risk of accidental contamination or injury from hazardous materials. If a hazardous material accident were to occur, we could be held liable for any resulting damages, and this liability could exceed our financial resources. Accidents unrelated to our operations could cause federal, state or local regulatory agencies to restrict our access to hazardous materials needed in our research and development efforts, which could result in delays in our research and development programs. Paying damages or experiencing delays caused by restricted access could reduce our ability to generate revenue and make it more difficult to fund our operations.

The intense competition and rapid technological change in our market may result in pricing pressures and failure of our potential products to achieve market acceptance.

We face increasingly intense competition from a number of commercial entities and institutions that are developing gene therapy and cell therapy technologies. Our competitors include early-stage and more established gene delivery companies, other biotechnology companies, pharmaceutical companies, universities, research institutions and government agencies developing gene therapy products or other biotechnology-based therapies designed to treat the diseases on which we focus. We also face competition from companies using more traditional approaches to treating human diseases, such as surgery, medical devices and pharmaceutical products. As our product candidates become commercial gene therapy products that may affect commercial markets of the analogous protein or traditional pharmaceutical therapy, disputes including lawsuits, demands, threats or patent challenges may arise in an effort to slow our development. In addition, we compete with other companies to acquire products or technology from research institutions or universities. Many of our competitors have substantially more financial and infrastructure resources and larger research and development staffs than we do. Many of our competitors also have greater experience and capabilities than we do in:

research and development;

clinical trials;

obtaining FDA and other regulatory approvals;

manufacturing; and

marketing and distribution.

In addition, the competitive positions of other companies, institutions and organizations, including smaller competitors, may be strengthened through collaborative relationships. Consequently, our competitors may be able to develop, obtain patent protection for, obtain regulatory approval for, or commercialize new products more rapidly than we do, or manufacture and market competitive products more successfully than we do. This could limit the prices we could charge for the products that we are able to market or result in our products failing to achieve market acceptance.

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Gene therapy is a rapidly evolving field and is expected to continue to undergo significant and rapid technological change and competition. Rapid technological development by our competitors, including development of technologies, products or processes that are more effective or more economically feasible than those we have developed, could result in our actual and proposed technologies, products or processes losing market share or becoming obsolete.

Healthcare reform measures and the unwillingness of third-party payors to provide adequate reimbursement for the cost of our products could impair our ability to successfully commercialize our potential products and become profitable.

Sales of medical products and treatments depends substantially, both domestically and abroad, on the availability of reimbursement to the consumer from third-party payors. Our potential products may not be considered cost-effective by third-party payors, who may not provide coverage at the price set for our products, if at all. If purchasers or users of our products are unable to obtain adequate reimbursement, they may forego or reduce their use of our products. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

Increasing efforts by governmental and third-party payors, such as Medicare, private insurance plans and managed care organizations, to cap or reduce healthcare costs will affect our ability to commercialize our product candidates and become profitable. We believe that third-party payors will attempt to reduce healthcare costs by limiting both coverage and level of reimbursement for new products approved by the FDA. There have been and will continue to be a number of federal and state proposals to implement government controls on pricing, the adoption of which could affect our ability to successfully commercialize our product candidates. Even if the government does not adopt any such proposals or reforms, their announcement could impair our ability to raise capital.

Risks Related to Our Common Stock

Concentration of ownership of our common stock may give certain shareholders significant influence over our business.

A small number of investors own a significant number of shares of our common stock. As of September 30, 2004, Biogen and Elan (together with its affiliates) each held approximately 12.1 million shares of our common stock, or approximately 14.9% of our common shares outstanding as of September 30, 2004. This concentration of stock ownership may allow these shareholders to exercise significant control over our strategic decisions and block, delay or substantially influence all matters requiring shareholder approval, such as:

election of directors;

amendment of our charter documents; or

approval of significant corporate transactions, such as a change of control of Targeted Genetics.

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The interests of these shareholders may conflict with the interests of other holders of our common stock with regard to such matters. Furthermore, this concentration of ownership of our common stock could allow these shareholders to delay, deter or prevent a third party from acquiring control of Targeted Genetics at a premium over the then-current market price of our common stock, which could result in a decrease in our stock price.

Market fluctuations or volatility could cause the market price of our common stock to decline and limit our ability to raise capital.

The stock market in general and the market for biotechnology-related companies in particular have experienced extreme price and volume fluctuations, often unrelated to the operating performance of the affected companies. The market price of the securities of biotechnology companies, particularly companies such as ours without earnings and product revenue, has been highly volatile and is likely to remain so in the future. Any report of clinical trial results that are below the expectations of financial analysts or investors could result in a decline in our stock price. We believe that in the past, similar levels of volatility have contributed to the decline in the market price of our common stock, and may do so again in the future. Trading volumes of our common stock can increase dramatically, resulting in a volatile market price for our common stock. In addition, the trading price of our common stock could decline significantly as a result of sales of a substantial number of shares of our common stock, or the perception that significant sales could occur.

For example, on March 31, 2004, we and Elan entered into a termination agreement that permits Elan to sell shares of our common stock, subject to certain exceptions, under the trading volume limitations of Rule 144(e)(1) promulgated under the Securities Act of 1933, as amended. The trading volume limitations on Elan are reduced over time subject to the terms of the termination agreement. In addition, Elan has registration rights with respect to its holdings pursuant to a registration rights agreement dated July 21, 1999. Both the termination agreement and the registration rights agreement permit Elan to sell quantities of stock, which could adversely impact the price of our common stock.

In the past, securities class action litigation has been brought against companies that experience volatility in the market price of their securities. Market fluctuations in the price of our common stock could also adversely affect our collaborative opportunities and our future ability to sell equity securities at a price we deem appropriate. As a result, you could lose all or part of your investment.

Our future capital-raising activities will likely involve the issuance of equity securities, which will dilute your investment and could result in a decline in the trading price of our common stock.

From June 1, 2003 until the time immediately prior to this offering and the simultaneous offering, we have issued 18.6 million shares of our common stock in equity financings that have been priced at a discount to the then-current market price of our common stock. These financings were completed in order to fund our research and development programs and for other general corporate purposes. To meet all or a portion of our future funding requirements, we will likely sell additional securities in the public or private equity markets if and when conditions are

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favorable, even if we do not have an immediate need for additional capital at that time. Raising funds through the issuance of equity securities will dilute the ownership of our existing shareholders. Furthermore, we may enter into financing transactions at prices that represent a substantial discount to market price. A negative reaction by investors and securities analysts to any discounted sale of our equity securities could result in a decline in the trading price of our common stock.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Our disclosure and analysis in this prospectus supplement, the applicable prospectus and the documents incorporated by reference into this prospectus supplement and the applicable prospectus contain forward-looking statements, which provide information regarding our current expectations, plans, objectives and forecasts of future events. Words such as may, will, believe, estimate, anticipate, plan, expect, may affect and intend, or concerning potential or opportunity and similar expressions or the negative thereof, are intended to identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. Forward-looking statements include, without limitation:

statements about our product development and commercialization goals and expectations;

potential market opportunities;

our plans for and anticipated results of our clinical development activities;

the potential advantage of our product candidates;

statements about our future capital requirements, the sufficiency of our capital resources to meet those requirements and the expected composition of our capital resources; and

other statements that are not historical facts.

Forward-looking statements are based on the judgment of management at the time the statements are made. Inaccurate assumptions and known and unknown risks and uncertainties can affect the accuracy of forward-looking statements. Our actual results could differ materially from those stated in or implied by forward-looking statements for a number of reasons, including the risks described in the sections of this prospectus supplement and the applicable prospectus entitled Risk Factors, in our other public filings, press releases and statements by our management. Other factors besides those described in this prospectus supplement, the applicable prospectus and in our other public filings, press releases and statements by our management could also affect actual results.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this prospectus supplement or the applicable prospectus. We undertake no obligation to publicly update any forward-looking statement to reflect new information, events or circumstances, whether anticipated or unanticipated, or to conform the statement to actual results

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or changes in our expectations. You should, however, review the factors, risks and other information we provide in the reports we file from time to time with the SEC.

USE OF PROCEEDS

We estimate that the aggregate net proceeds to us from this offering and the offering we are conducting simultaneously with this offering using another prospectus supplement, base prospectus and registration statement we filed with the Securities and Exchange Commission will be approximately \$6 million in the aggregate, of which \$5,323,629 is being sold under this prospectus supplement and \$676,370 is being sold under the other prospectus supplement.

We intend to use the net proceeds to us from this offering and the offering we are conducting simultaneously with this offering as follows:

\$2 million to perform activities set forth in the collaboration agreement and manufacturing agreement we are entering into in connection with this offering and the simultaneous offering, as described in more detail below; and

the remainder for working capital and other general corporate purposes.

In addition, we may use a portion of the net proceeds to acquire or invest in complementary businesses or technologies. Although from time to time we evaluate potential acquisitions of complementary businesses or products, we currently have no present understandings, commitments or agreements with respect to any such transactions.

The amounts actually expended for each of the purposes listed above and the timing of our actual expenditures will depend on numerous factors, including the timing of actual expenditures for the purposes listed above, which may be affected by, among other factors, scientific progress under our collaboration agreement with Celladon and the timing of commencement of work under our manufacturing agreement with Celladon. We will retain broad discretion in the allocation and use of the net proceeds.

Pending any of these uses, we intend to invest the net proceeds of this offering in short-term marketable securities. Within the parameters set by our investment policy, we will retain broad discretion in allocating the net proceeds of this offering.

PLAN OF DISTRIBUTION

We are selling directly to the purchasers listed below a total of 3,508,389 shares of our common stock under this prospectus supplement at a price of approximately \$1.52 per share. Concurrently with this offering and our simultaneous offering, we are entering into a collaboration agreement and a manufacturing agreement with Celladon. The purchasers listed below of our shares of common stock in this offering and the simultaneous offering are investors in Celladon. As of the date of this prospectus supplement, the purchasers in this offering and the simultaneous offering, Enterprise Partners and affiliated entities own approximately 34% of the outstanding shares of Celladon and Venrock Associates and affiliated entities own approximately 28% of the outstanding shares of Celladon.

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| Name of Purchaser | Number of Shares Purchased |
|-------------------------------------|-----------------------------------|
| Enterprise Partners V, L.P. | 987,386 |
| Enterprise Partners VI, L.P. | 987,386 |
| Venrock Partners, L.P. | 295,374 |
| Venrock Associates IV, L.P. | 1,202,656 |
| Venrock Entrepreneurs Fund IV, L.P. | 35,587 |

Simultaneously with the sales of shares of our common stock under this prospectus supplement, we are selling to the purchasers listed below a total of 445,743 shares, under another prospectus supplement at a price of approximately \$1.52 per share.

| Name of Purchaser | Number of Shares Purchased |
|-------------------------------------|-----------------------------------|
| Enterprise Partners V, L.P. | 100,000 |
| Enterprise Partners VI, L.P. | 100,000 |
| Venrock Partners, L.P. | |
| Venrock Associates IV, L.P. | 245,743 |
| Venrock Entrepreneurs Fund IV, L.P. | |

All expenses of both distributions, other than the fees and expenses of counsel to the purchasers, will be borne by us, and are estimated, as of the date hereof at \$30,000.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement under the Securities Act relating to the common stock being offered by this prospectus supplement and the accompanying prospectus. As permitted by the SEC rules, this prospectus supplement and the accompanying prospectus omit some information included in the registration statement. For a more complete understanding of the common stock and this offering, you should refer to the registration statement, including its exhibits.

We file annual, quarterly and current reports, as well as registration and proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock we are offering under this prospectus supplement and the accompanying prospectus. SEC rules allow us to incorporate by reference into this prospectus supplement and the accompanying prospectus the information we file with the SEC, which means we can disclose important information to you by referring you to those documents. The information included in the following documents is incorporated by reference and is considered to be a part of this prospectus supplement and the accompanying prospectus:

1. Our quarterly reports on Form 10-Q for the quarters ended March 31, 2004, filed with the SEC on April 30, 2004; June 30, 2004, filed with the SEC on July 30, 2004; and September 30, 2004, filed with the SEC on November 9, 2004;
2. Our annual report on Form 10-K for the year ended December 31, 2003, filed with the SEC on March 12, 2004;

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3. Our current reports on Form 8-K filed with the SEC on January 13, 2004; January 22, 2004; January 27, 2004; February 4, 2004; March 1, 2004; March 18, 2004; April 6, 2004; April 28, 2004; June 24, 2004; July 29, 2004; August 11, 2004; November 4, 2004; and January 4, 2005.

4. Our definitive proxy statement dated March 22, 2004, relating to our May 20, 2004 annual meeting of shareholders; and

5. The description of our common stock contained in our registration statements on Form 8-A filed on April 26, 1994 and October 22, 1996 under Section 12(g) of the Exchange Act, including any amendments or reports filed for the purpose of updating that description.

We also incorporate by reference all documents we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, (a) after the filing date of the initial registration statement of which this prospectus is a part and before the effectiveness of the registration statement and (b) after the effectiveness of the registration statement and before all of the shares registered under the registration statement are sold. The most recent information that we file with the SEC automatically updates and supersedes older information. The information contained in any such filing will be deemed to be part of this prospectus supplement and the accompanying prospectus as of the date on which the document is filed, and any older information that has been modified or superseded will not be deemed to be a part of this prospectus supplement or the accompanying prospectus. Unless specifically stated to the contrary, none of the information that we disclose on any Current Report on Form 8-K that we may from time to time furnish to the SEC (i) with respect to periods prior to August 23, 2004 under Item 9 or Item 12 of Form 8-K and (ii) with respect to periods on or after August 23, 2004 under Item 2.02 or Item 7.01 of Form 8-K, will be incorporated by reference into, or otherwise included in, this prospectus supplement or the accompanying prospectus.

Upon request, we will provide without charge to each person who receives a prospectus, including any beneficial owner, a copy of the information that has been incorporated by reference into this prospectus supplement and the accompanying prospectus or the applicable prospectus supplement. Please direct your request, either in writing or by telephone, to the Secretary, Targeted Genetics Corporation, 1100 Olive Way, Suite 100, Seattle, Washington 98101, (206) 623-7612.

You may also inspect and copy the registration statement and other documents that we have filed with the SEC, at prescribed rates, at the public reference facility maintained by the SEC at Room 1024, 450 Fifth Street, N.W., Washington, D.C. 20549. You may obtain information regarding the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the registration statement and other documents we have filed with the SEC are publicly available through the SEC's website at <http://www.sec.gov> or through our website at www.targetedgenetics.com.

LEGAL MATTERS

The validity of the common stock offered under this prospectus supplement and the accompanying prospectus will be passed on for us by Orrick, Herrington & Sutcliffe LLP, Seattle, Washington.

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EXPERTS

Ernst & Young LLP, independent registered public accounting firm, have audited our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2003, as set forth in their report, which is incorporated by reference in this prospectus supplement and the accompanying prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

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PROSPECTUS

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Targeted Genetics Corporation

16,300,000 Shares of Common Stock

We may sell from time to time up to 16,300,000 shares of the common stock offered by this prospectus at prices and on terms to be determined at or prior to the time of an offering. We will describe the specific terms and amounts of the common stock offered in a prospectus supplement that will accompany this prospectus.

You should read both the prospectus supplement and this prospectus carefully before you invest in our common stock. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

Our common stock is quoted on the NASDAQ SmallCap Market under the symbol TGEN. The last reported sales price of our common stock on June 16, 2004 was \$1.52 per share.

Investing in our common stock involves risks. See Risk Factors beginning on page 5.

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

The date of this prospectus is July 7, 2004

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You should rely only on the information provided or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than its date, regardless of the time of delivery of the prospectus or prospectus supplement or any sale of common stock.

This prospectus and any prospectus supplement is an offer to sell and a solicitation of an offer to buy the securities offered by this prospectus and any prospectus supplement only in jurisdictions where the offer or sale is permitted.

In this prospectus, Targeted Genetics, we, us and our refer to Targeted Genetics Corporation and its subsidiaries

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission, or SEC, using the SEC's shelf registration process. Each time we sell our common stock under this prospectus we will provide a prospectus supplement that will contain specific information about the terms of that offering, including the price, the amount of common stock being offered and the plan of distribution. The prospectus supplement for a particular offering may also add, update or change information contained in this prospectus. In addition, we may update or supplement any prospectus supplement relating to a particular offering. You should read both this prospectus and any applicable prospectus supplement together with the additional information about Targeted Genetics to which we refer you in the section of this prospectus entitled "Where You Can Find More Information."

TARGETED GENETICS CORPORATION

This summary does not contain all the information about Targeted Genetics Corporation that may be important to you. You should read the more detailed information and consolidated financial statements and related notes that are incorporated by reference and are considered to be a part of this prospectus.

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Targeted Genetics develops gene therapy products and technologies for treating both acquired and inherited diseases. Our gene therapy product candidates are designed to treat disease by regulating cellular function at a genetic level. This involves introducing genetic material into target cells and activating it in a manner that provides the desired effect. We have developed and licensed a broad base of proprietary intellectual property that we believe gives us the potential to address the significant diseases that are the primary focus of our business. Our proprietary intellectual property includes genes, methods of transferring genes into cells, processes to manufacture our gene delivery product candidates and other proprietary technologies and processes. In addition, we have established expertise and development capabilities focused in the areas of preclinical research and biology, manufacturing and manufacturing process scale-up, quality control, quality assurance, regulatory affairs and clinical trial design and implementation. We believe that our focus and expertise will enable us to develop products based on our proprietary intellectual property.

Gene therapy products involve the use of delivery vehicles, called vectors, to place genetic material into target cells. Our proprietary vector technologies include both viral and synthetic vectors. Our viral vector development activities, which use modified viruses to deliver genes into cells, focus primarily on adeno-associated virus, or AAV, a common human virus that has not been associated with any human disease or illness. We believe that AAV provides a number of safety and gene delivery advantages over other viruses for several of our potential gene therapy products. Our synthetic vectors deliver genes into cells using lipids, which are fatty, water-insoluble organic substances that can promote gene uptake through cell membranes. We believe that synthetic vectors may provide a number of gene delivery advantages for repeated, efficient delivery of therapeutic genes into rapidly dividing cells, such as certain types of tumor cells. Although our current product development candidates utilize AAV as the delivery vector, we believe that possessing capabilities in both viral and synthetic approaches provides advantages in our corporate partnering efforts and increases the range of our potential products that may reach the market.

We have an AAV-based product candidate under development for treating cystic fibrosis that is being evaluated in a second Phase II clinical trial initiated in July 2003. We designed this trial to enroll up to 100 patients and are conducting it in collaboration with the Cystic Fibrosis Foundation, or CF Foundation. We expect to complete patient accrual and dosing by the end of 2004. We recently dosed the 50th patient in this study. After collecting 30-day data points from the first 50 patients, an independent data safety monitoring committee will conduct an interim analysis to determine whether the trial will continue or be terminated. If it is apparent, statistically, that significant differences between placebo and treated groups upon full patient enrollment cannot be reached then the trial will be terminated. The data remain blinded as long as the trial continues and we will continue to accrue patients during the interim analysis period. This second Phase II trial follows an initial repeat dosing trial for which we announced final data in June 2003 that indicated that our cystic fibrosis product candidate met safety and tolerability targets. In addition, final data from the initial Phase II trial indicated a statistically significant improvement in lung function at day 30 and a decrease in levels of an inflammatory cytokine at day 14.

We are developing an AAV-based vaccine product candidate for high-risk populations in developing nations to protect against the progression of Human Immunodeficiency Virus, or

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HIV, infection to Acquired Immune Deficiency Syndrome, or AIDS, in partnership with the International AIDS Vaccine Initiative, or IAVI, a non-profit organization, and The Columbus Children's Research Institute at Children's Hospital in Columbus, Ohio. In December 2003, we initiated a Phase I initial dose escalation safety trial in humans for our AIDS vaccine product candidate in Europe. This dose-escalation safety trial is designed to enroll up to 50 volunteers who are uninfected with HIV and in good health. Each participant in this trial will receive a single injection of the vaccine candidate and will be monitored for safety and immune response. We expect to complete the dose-escalation phase of this trial by the end of 2004.

We are also developing an AAV-based product candidate for the treatment of rheumatoid arthritis. In March 2004, we initiated a Phase I clinical trial for this product candidate for treating rheumatoid arthritis. This dose-escalation safety trial is designed to enroll up to 32 patients with rheumatoid arthritis and will be conducted in multiple sites in the United States and Canada. Patients will be monitored for safety and secondarily for improvements in arthritis signs and symptoms. We expect to complete patient accrual and dosing in this trial by the first quarter of 2005. We also have additional product candidates focused on treating cancer and hemophilia; however, we have suspended further development of these programs until we can find other sources of funding for the programs.

We believe that our successes in developing and licensing a broad platform of proprietary intellectual property for developing and manufacturing potential products support our potential to develop and manufacture gene therapy product candidates to treat a range of diseases. We have developed processes to manufacture our potential products using methods and at a scale amenable to clinical development and expandable to large-scale production for advancing our potential products to clinical evaluation and commercialization. These methods are similar to the methods used to manufacture other biologics. As a result, we evaluated and continue to evaluate opportunities to utilize excess capacity to manufacture biologics for other companies. In March 2003, we entered into a manufacturing services agreement with GenVec, Inc., or GenVec, to conduct initial feasibility studies to evaluate our ability to manufacture clinical supply of GenVec's cancer product candidate, TNFerade, an adeno-viral-based gene therapy product. In October 2003, we successfully completed this feasibility study and began manufacturing TNFerade for clinical use. In January 2004, we completed our manufacturing work for GenVec.

We believe that a wide range of diseases may potentially be treated, or prevented, with gene-based products, including cancer, genetic diseases and infectious diseases. We believe that there is also a significant opportunity to treat diseases currently treated using recombinant DNA proteins and monoclonal antibodies or small molecules that may be more effectively treated by gene-based therapies due to their ability to provide a long-term or a localized method of treatment. Our business strategy is to develop multiple gene delivery systems, which we believe will maximize our product opportunities. Using these gene delivery systems, we are developing product candidates across multiple diseases with the belief that gene-based therapies may provide a means to treat diseases not fully treatable with current biologic and pharmaceutical drugs. We believe that, if successful, we can establish significant market potential for our product candidates. There are no commercially available gene therapy products in the United States. We intend to pursue product development programs to enable us to demonstrate proof of

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concept and eventually commercialize gene-based therapeutics to address currently unmet medical needs in treating disease.

The development of pharmaceutical products involves extensive preclinical development followed by human clinical trials that take several years or more to complete. The length of time required to completely develop any product candidate varies substantially according to the type, complexity and novelty of the product candidate, the degree of involvement by a development partner, and the intended use of the product candidate. Our commencement and rate of completion of clinical trials may vary or be delayed for many reasons, including those discussed in the section of this prospectus entitled Risk Factors.

We were incorporated in the state of Washington in 1989. Our executive offices are located at 1100 Olive Way, Suite 100, Seattle, Washington 98101, and our telephone number is (206) 623-7612.

For more information about Targeted Genetics, you should read the accompanying prospectus and the information described in the section of this prospectus entitled Where You Can Find More Information, including our consolidated financial statements and related notes.

RISK FACTORS

This offering involves a high degree of risk. Before you invest in our common stock, you should carefully read and consider the following risk factors. If any of these risks actually occur, our business, operating results or financial condition could be harmed. This could cause the trading price of our stock to decline, and you could lose all or part of your investment.

Risks Related to Our Business

We expect to continue to operate at a loss and may never become profitable, which could result in a decline in the value of our common stock and a loss of your investment.

Substantially all of our revenue has been derived under collaborative research and development agreements relating to the development of our potential product candidates. We have incurred, and will continue to incur for the foreseeable future, significant expense to develop our research and development programs, conduct preclinical studies and clinical trials, seek regulatory approval for our product candidates and provide general and administrative support for these activities. As a result, we have incurred significant net losses since inception, and we expect to continue to incur substantial additional losses in the future. As of March 31, 2004, we had an accumulated deficit of approximately \$221 million. We may never generate profits and, if we do become profitable, we may be unable to sustain or increase profitability.

All of our product candidates are in early-stage clinical trials or preclinical development, and if we are unable to successfully develop and commercialize our product candidates we will be unable to generate sufficient capital to maintain our business.

In July 2003, we initiated a confirmatory Phase II clinical trial for our cystic fibrosis product candidate in the United States. In December 2003, we initiated a Phase I clinical trial for our AIDS vaccine product candidate in Europe. In March 2004, we initiated a Phase I clinical

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trial for our rheumatoid arthritis product candidate in the United States and Canada. Our product candidates for cancer have been evaluated in Phase I and Phase II clinical trials. We will not generate any product revenue for at least several years and then only if we can successfully develop and commercialize our product candidates.

Commercializing our potential products depends on successful completion of additional research and development and testing, in both preclinical development and clinical trials. Clinical trials may take several years or more to complete. The commencement, cost and rate of completion of our clinical trials may vary or be delayed for many reasons, including the risks discussed elsewhere in this section. If we are unable to successfully complete preclinical and clinical development of some or all of our product candidates in a timely manner, we may be unable to generate sufficient product revenue to maintain our business.

Even if our potential products succeed in clinical trials and are approved for marketing, these products may never achieve market acceptance. If we are unsuccessful in commercializing our product candidates for any reason, including greater effectiveness or economic feasibility of competing products or treatments, the failure of the medical community or the public to accept or use any products based on gene delivery, inadequate marketing and distribution capabilities or other reasons discussed elsewhere in this section, we will be unable to generate sufficient product revenue to maintain our business.

The regulatory approval process for our product candidates is costly, time-consuming and subject to unpredictable changes and delays, and our product candidates may never receive regulatory approval.

To our knowledge, no gene therapy products have received regulatory approval for marketing from the U.S. Food and Drug Administration, or FDA, or any similar state or foreign regulatory agencies. Because our product candidates involve new and unproven technologies, we believe that the regulatory approval process may proceed more slowly compared to clinical trials involving traditional drugs. The FDA and applicable state and foreign regulators must conclude at each stage of clinical testing that our clinical data suggest acceptable levels of safety in order for us to proceed to the next stage of clinical trials. In addition, gene therapy clinical trials conducted at institutions that receive funding for recombinant DNA research from the National Institutes of Health, or NIH, are subject to review by the NIH's Office of Biotechnology Activities Recombinant DNA Advisory Committee, or RAC. Although NIH guidelines do not have regulatory status, the RAC review process can impede the initiation of the trial, even if the FDA has reviewed the trial and approved its initiation. Moreover, before a clinical trial can begin at an NIH-funded institution, that institution's Institutional Biosafety Committee must review the proposed clinical trial to assess the safety of the trial.

The regulatory process for our product candidates is costly, time-consuming and subject to unpredictable delays. The clinical trial requirements of the FDA, NIH and other agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use of the potential products. In addition, regulatory requirements governing gene and cell therapy products have changed frequently and may change in the future. Accordingly, we cannot predict how long it will take or how much it will cost to obtain regulatory approvals for clinical trials or for manufacturing or marketing our potential products. Some or all of our product candidates may

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never receive regulatory approval. A product candidate that appears promising at an early stage of research or development may not result in a commercially successful product. Our clinical trials may fail to demonstrate the safety and efficacy of a product candidate or a product candidate may generate unacceptable side effects or other problems during or after clinical trials. Should this occur, we may have to delay or discontinue development of the product candidate, and the corporate partner that supports development of that product candidate may terminate its support. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

If we are unable to raise additional capital when needed, we will be unable to conduct our operations and develop our potential products.

Because internally generated cash flow will not fund development and commercialization of our product candidates, we will require substantial additional financial resources. Our future capital requirements will depend on many factors, including:

the rate and extent of scientific progress in our research and development programs;

the timing, costs and scope of, and our success in, conducting clinical trials, obtaining regulatory approvals and pursuing patent prosecutions;

competing technological and market developments

the timing and costs of, and our success in, any commercialization activities and facility expansions, if and as required; and

the existence and/or outcome of any litigation or administrative proceedings involving our intellectual property.

As of March 31, 2004, we had approximately \$41.1 million in cash and cash equivalents. We expect that our cash resources at March 31, 2004 and the funding expected from IAVI to fund 2004 work activities under our AIDS vaccine collaboration will be sufficient to fund our operations until at least the beginning of 2006. We are evaluating opportunities to obtain additional capital to fund our operations beyond that time. Additional sources of financing could involve one or more of the following:

extending or expanding our current collaborations;

entering into additional product development collaborations;

selling or licensing our technology or product candidates;

borrowing under loan or equipment leasing arrangements;

issuing equity in the public or private markets; or

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issuing debt.

Additional funding may not be available to us on reasonable terms, if at all.

The funding that we expect to receive from IAVI depends on continued scientific progress under the collaboration and IAVI's ability and willingness to continue or extend the collaboration. If we are unable to successfully access additional capital, we may need to scale back, delay or terminate one or more of our key development programs, curtail capital expenditures or reduce other operating activities. We may also be required to relinquish some rights to our technology or product candidates or grant or take licenses on unfavorable terms, either of which would reduce the ultimate value to us of our technology or product candidates.

If we are unable to obtain or maintain licenses for necessary third-party technology on acceptable terms or to develop alternative technology, we may be unable to develop and commercialize our product candidates.

We have entered into exclusive and nonexclusive license agreements that give us and our partners rights to use technologies owned or licensed by commercial and academic organizations in the research, development and commercialization of our potential products. For example, we have a gene transfer technology license agreement with Amgen Inc., or Amgen, as the successor to Immunex Corporation, or Immunex, under which we have license rights to certain Immunex proprietary technology specifically applicable to gene therapy applications. In a February 2004 letter, Amgen has taken the position that we are not licensed, either exclusively or nonexclusively, to use Immunex intellectual property covering TNFR:Fc or therapeutic uses for TNFR:Fc. We have responded with a letter confirming our confidence that the gene transfer technology license agreement provides us with an exclusive worldwide license to use the gene construct coding for TNFR:Fc for gene therapy applications. We have had and expect to have further communications with Amgen regarding our differences. Notwithstanding our confidence, it is possible that a resolution of those differences, through litigation or otherwise, could cause delay or discontinuation of our development of our product candidate, tgAAC94, or our inability to commercialize any resulting product.

We believe that we will need to obtain additional licenses to use patents and unpatented technology owned or licensed by others for compositions, methods, processes to manufacture compositions, processes to manufacture and purify gene delivery product candidates and other technologies and processes for our present and potential product candidates. If we are unable to maintain our current licenses for third-party technology or obtain additional licenses on acceptable terms, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates. In addition, the license agreements for technology for which we hold exclusive licenses typically contain provisions that require us to meet minimum development milestones in order to maintain the license on an exclusive basis for some or all fields of the license. We also have license agreements for some of our technologies, which may require us to sublicense certain of our rights. If we do not meet these requirements, our licensor may convert all or a portion of the license to a nonexclusive license or, in some cases, terminate the license.

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In many cases, patent prosecution of our licensed technology is controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

the scope of rights granted under the license agreement and other interpretation-related issues;

the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;

the sublicensing of patent and other rights under our collaborative development relationships;

the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and

the priority of invention of patented technology.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

Litigation involving intellectual property, product liability or other claims and product recalls could strain our resources, subject us to significant liability, damage our reputation or result in the invalidation of our proprietary rights.

As our product development efforts progress, especially in potentially significant markets such as AIDS or rheumatoid arthritis therapies, the risk increases that others may claim that our processes and potential products infringe on their intellectual property rights. In addition, administrative proceedings, litigation or both may be necessary to enforce our intellectual property rights or determine the rights of others. Defending or pursuing these claims, regardless of their merit, would be costly and would likely divert management's attention and resources away from our operations. If there were to be an adverse outcome in litigation or an interference proceeding, we could face potential liability for significant damages or be required to obtain a license to the patented process or technology at issue, or both. If we are unable to obtain a license on acceptable terms, or to develop or obtain alternative technology or processes, we may be unable to manufacture or market any product or potential product that uses the affected process or technology.

Clinical trials and the marketing of any potential products may expose us to liability claims resulting from the testing or use of our products. Gene therapy treatments are new and unproven, and potential known and unknown side effects of gene therapy may be serious and potentially

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life-threatening. Product liability claims may be made by clinical trial participants, consumers, healthcare providers or other sellers or users of our products. Although we currently maintain liability insurance, the costs of product liability and other claims against us may exceed our insurance coverage. In addition, we may require increased liability coverage as additional product candidates are used in clinical trials and commercialized. Liability insurance is expensive and may not continue to be available on acceptable terms. A product liability or other claim or product recall not covered by or exceeding our insurance coverage could significantly harm our financial condition. In addition, adverse publicity resulting from a product recall or a liability claim against us, one of our partners or another gene therapy company could significantly harm our reputation and make it more difficult to obtain the funding and collaborative partnerships necessary to maintain our business.

If we lose IAVI as a funding partner, we may be unable to develop our AIDS vaccine product candidate.

A significant portion of our operating and clinical trial expenses are funded through our collaborative agreements with IAVI. We have a collaborative development agreement with IAVI, which expires in December 2006, that we expect to provide us with funding to reimburse research and development and manufacturing expenses we incur in connection with the collaboration. In addition, our collaboration with IAVI provides funding for our Phase I clinical trial for our AIDS vaccine product candidate. IAVI has the right to terminate the collaboration or its obligation to provide funding at any time for any reason with 90 days notice, which would significantly affect our operating activities.

If we were to lose the collaborative funding relationship with IAVI and were unable to obtain alternative sources of funding for the AIDS vaccine product candidate covered by the IAVI collaboration, we may be unable to continue our research and development or clinical program for this product candidate. In addition, the loss of significant amounts of collaborative or clinical trial funding could cause the delay, reduction or termination of the related research and development programs, and a reduction in capital expenditures and other operating activities necessary to support general operations. Such a reduction could further impede our ability to develop our product candidates.

If our partners or scientific consultants terminate, reduce or delay our relationships with them, we may be unable to develop our potential products.

Our partners provide funding, manage regulatory filings, aid and augment our internal research and development efforts and provide access to important intellectual property and know-how. Their activities include, for example, support in processing the regulatory filings of our product candidates and funding clinical trials. Our outside scientific consultants and contractors perform research, develop technology and processes to advance and augment our internal efforts and provide access to important intellectual property and know-how. Their activities include, for example, clinical evaluation of our product candidates, product development activities performed under our research collaborations, research under sponsored research agreements and contract manufacturing services. Collaborations with established pharmaceutical and biotechnology companies and academic, research and public health organizations often provide a measure of validation of our product development efforts in the

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eyes of securities analysts, investors and the medical community. The development of certain of our potential products, and therefore the success of our business, depends on the performance of our partners, consultants and contractors. If they do not dedicate sufficient time, regulatory or other technical resources to the research and development programs for our product candidates or if they do not perform their obligations as expected, we may experience delays in, and may be unable to continue, the preclinical or clinical development of those product candidates. Each of our collaborations and scientific consulting relationships concludes at the end of the term specified in the applicable agreement unless we and our partners agree to extend the relationship. Any of our partners may decline to extend the collaboration, or may be willing to extend the collaboration only with a significantly reduced scope, for a number of scientific or business reasons. Competition for scientific consultants and partners in gene therapy is intense. We may be unable to successfully maintain our existing relationships or establish additional relationships necessary for the development of our product candidates on acceptable terms, if at all. If we are unable to do so, our research and development programs may be delayed or we may lose access to important intellectual property or know-how.

If we do not attract and retain qualified personnel, we may be unable to develop and commercialize some of our potential products.

Our future success depends in large part on our ability to attract and retain key technical and management personnel. All of our employees, including our executive officers, can terminate their employment with us at any time. We have programs in place designed to retain personnel, including competitive compensation packages and programs to create a positive work environment. Other companies, research and academic institutions and other organizations in our field compete intensely for employees, however, and we may be unable to retain our existing personnel or attract additional qualified employees and consultants. If we experience significant turnover or difficulty in recruiting new personnel, our research and development of product candidates could be delayed and we could experience difficulty in generating sufficient revenue to maintain our business.

The success of our clinical trials and preclinical studies may not be indicative of results in a large number of patients of either safety or efficacy.

The successful results of our technology in preclinical studies using animal models may not be predictive of the results that we will see in our clinical trials. In addition, results in early-stage clinical trials are based on limited numbers of patients and generally test for drug safety rather than efficacy. Our reported progress and results from our early phases of clinical testing of our product candidates may not be indicative of progress or results that will be achieved from larger populations, which could be less favorable. Moreover, we do not know if the favorable results we have achieved in clinical trials will have a lasting effect. If a larger group of patients does not experience positive results, or if any favorable results do not demonstrate a beneficial effect, our product candidate for cystic fibrosis, or any other potential products that we advance to clinical trials, may not receive approval from the FDA for further clinical trials or commercialization.

Failure to recruit patients could delay or prevent clinical trials of our potential products, which could delay or prevent the development of potential products.

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Identifying and qualifying patients to participate in clinical trials of our potential products is critically important to our success. The timing of our clinical trials depends on the speed at which we can recruit patients to participate in testing our product candidates. We have experienced delays in some of our clinical trials, and we may experience similar delays in the future. If patients are unwilling to participate in our gene therapy trials because of negative publicity from adverse events in the biotechnology or gene therapy industries or for other reasons, including competitive clinical trials for similar patient populations, the timeline for recruiting patients, conducting trials and obtaining regulatory approval of potential products will be delayed. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of the clinical trials altogether.

We may be unable to adequately protect our proprietary rights domestically or overseas, which may limit our ability to successfully market any product candidates.

Our success depends substantially on our ability to protect our proprietary rights and operate without infringing on the proprietary rights of others. We own or license patents and patent applications, and will need to license additional patents, for genes, processes, practices and techniques critical to our present and potential product candidates. If we fail to obtain and maintain patent or other intellectual property protection for this technology, our competitors could market competing products using those genes, processes, practices and techniques. The patent process takes several years and involves considerable expense. In addition, patent applications and patent positions in the field of biotechnology are highly uncertain and involve complex legal, scientific and factual questions. Our patent applications may not result in issued patents and the scope of any patent may be reduced both before and after the patent is issued. Even if we secure a patent, the patent may not provide significant protection and may be circumvented or invalidated.

We also rely on unpatented proprietary technology and technology that we have licensed on a nonexclusive basis. While we take precautions to protect our proprietary unpatented technology, we may be unable to meaningfully protect this technology from unauthorized use or misappropriation by a third party. Our competitors could also obtain rights to our nonexclusively licensed proprietary technology. In any event, other companies may independently develop equivalent proprietary information and techniques. If our competitors develop and market competing products using our unpatented or nonexclusively licensed proprietary technology or substantially similar technology, our products, if successfully developed, could suffer a reduction in sales or be forced out of the market.

If we do not develop adequate manufacturing, sales, marketing and distribution capabilities, either alone or with our business partners, we will be unable to generate sufficient product revenue to maintain our business.

We currently do not have the physical capacity to manufacture large-scale quantities of our potential products. This could limit our ability to conduct large clinical trials of a product candidate and to commercially launch a successful product candidate. In order to manufacture product at such scale, we will need to expand or improve our current facilities and staff or supplement them through the use of contract providers. If we are unable to obtain and maintain

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the necessary manufacturing capabilities, either alone or through third parties, we will be unable to manufacture our potential products in quantities sufficient to sustain our business. Moreover, we are unlikely to become profitable if we, or our contract providers, are unable to manufacture our potential products in a cost-effective manner.

In addition, we have no experience in sales, marketing and distribution. To successfully commercialize any products that may result from our development programs, we will need to develop these capabilities, either on our own or with others. We intend to enter into collaborations with other entities to utilize their mature marketing and distribution capabilities, but we may be unable to enter into marketing and distribution agreements on favorable terms, if at all. If our current or future collaborative partners do not commit sufficient resources to timely marketing and distributing our future products, if any, and we are unable to develop the necessary marketing and distribution capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business.

Post-approval manufacturing or product problems or failure to satisfy applicable regulatory requirements could prevent or limit our ability to market our products.

Commercialization of any products will require continued compliance with FDA and other federal, state and local regulations. For example, our current manufacturing facility, which is designed for manufacturing our AAV vectors for clinical and development purposes, is subject to the Good Manufacturing Practices requirements and other regulations of the FDA, as well as to other federal, state and local regulations such as the Occupational Health and Safety Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act and the Environmental Protection Act. Any future manufacturing facilities that we may construct for large-scale commercial production will also be subject to regulation. We may be unable to obtain regulatory approval for or maintain in operation this or any other manufacturing facility. In addition, we may be unable to attain or maintain compliance with current or future regulations relating to manufacture, safety, handling, storage, record keeping or marketing of potential products. If we fail to comply with applicable regulatory requirements or discover previously unknown manufacturing, contamination, product side effects or other problems after we receive regulatory approval for a potential product, we may suffer restrictions on our ability to market the product or be required to withdraw the product from the market.

Risks Related to Our Industry

Adverse events in the field of gene therapy could damage public perception of our potential products and negatively affect governmental approval and regulation.

Public perception of our product candidates could be harmed by negative events in the field of gene therapy. For example, in late 2002, two patients in a French academic clinical trial being treated for x-linked severe combined immunodeficiency in a gene therapy trial using a retroviral vector developed leukemia. Patient deaths, related and unrelated to gene therapy, have occurred in other clinical trials. These adverse events and the resulting publicity, as well as any other adverse events in the field of gene therapy that may occur in the future, could result in a decrease in demand for any products that we may develop. The commercial success of our product candidates will depend in part on public acceptance of the use of gene therapy for

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preventing or treating human diseases. If public perception is influenced by claims that gene therapy is unsafe, our product candidates may not be accepted by the general public or the medical community. The public and the medical community may conclude that our technology is unsafe.

Future adverse events in gene therapy or the biotechnology industry could also result in greater governmental regulation, unfavorable public perception, stricter labeling requirements and potential regulatory delays in the testing or approval of our potential products. Any increased scrutiny could delay or increase the costs of our product development efforts or clinical trials.

Our use of hazardous materials exposes us to liability risks and regulatory limitations on their use, either of which could reduce our ability to generate product revenue.

Our research and development activities involve the controlled use of hazardous materials, including chemicals, biological materials and radioactive compounds. Our safety procedures for handling, storing and disposing of these materials must comply with federal, state and local laws and regulations, including, among others, those relating to solid and hazardous waste management, biohazard material handling, radiation and air pollution control. We may be required to incur significant costs in the future to comply with environmental or other applicable laws and regulations. In addition, we cannot eliminate the risk of accidental contamination or injury from hazardous materials. If a hazardous material accident were to occur, we could be held liable for any resulting damages, and this liability could exceed our financial resources. Accidents unrelated to our operations could cause federal, state or local regulatory agencies to restrict our access to hazardous materials needed in our research and development efforts, which could result in delays in our research and development programs. Paying damages or experiencing delays caused by restricted access could reduce our ability to generate revenue and make it more difficult to fund our operations.

The intense competition and rapid technological change in our market may result in pricing pressures and failure of our potential products to achieve market acceptance.

We face increasingly intense competition from a number of commercial entities and institutions that are developing gene therapy and cell therapy technologies. Our competitors include early-stage and more established gene delivery companies, other biotechnology companies, pharmaceutical companies, universities, research institutions and government agencies developing gene therapy products or other biotechnology-based therapies designed to treat the diseases on which we focus. We also face competition from companies using more traditional approaches to treating human diseases, such as surgery, medical devices and pharmaceutical products. As our product candidates become commercial gene therapy products that may affect commercial markets of the analogous protein or traditional pharmaceutical therapy, disputes including lawsuits, demands, threats or patent challenges may arise in an effort to slow our development. In addition, we compete with other companies to acquire products or technology from research institutions or universities. Many of our competitors have substantially more financial and infrastructure resources and larger research and development staffs than we do. Many of our competitors also have greater experience and capabilities than we do in:

research and development;

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clinical trials;

obtaining FDA and other regulatory approvals;

manufacturing; and

marketing and distribution.

In addition, the competitive positions of other companies, institutions and organizations, including smaller competitors, may be strengthened through collaborative relationships. Consequently, our competitors may be able to develop, obtain patent protection for, obtain regulatory approval for, or commercialize new products more rapidly than we do, or manufacture and market competitive products more successfully than we do. This could limit the prices we could charge for the products that we are able to market or result in our products failing to achieve market acceptance.

Gene therapy is a rapidly evolving field and is expected to continue to undergo significant and rapid technological change and competition. Rapid technological development by our competitors, including development of technologies, products or processes that are more effective or more economically feasible than those we have developed, could result in our actual and proposed technologies, products or processes losing market share or becoming obsolete.

Healthcare reform measures and the unwillingness of third-party payors to provide adequate reimbursement for the cost of our products could impair our ability to successfully commercialize our potential products and become profitable.

Sales of medical products and treatments depends substantially, both domestically and abroad, on the availability of reimbursement to the consumer from third-party payors. Our potential products may not be considered cost-effective by third-party payors, who may not provide coverage at the price set for our products, if at all. If purchasers or users of our products are unable to obtain adequate reimbursement, they may forego or reduce their use of our products. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

Increasing efforts by governmental and third-party payors, such as Medicare, private insurance plans and managed care organizations, to cap or reduce healthcare costs will affect our ability to commercialize our product candidates and become profitable. We believe that third-party payors will attempt to reduce healthcare costs by limiting both coverage and level of reimbursement for new products approved by the FDA. There have been and will continue to be a number of federal and state proposals to implement government controls on pricing, the adoption of which could affect our ability to successfully commercialize our product candidates. Even if the government does not adopt any such proposals or reforms, their announcement could impair our ability to raise capital.

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Risks Related to Our Common Stock

Concentration of ownership of our common stock may give certain shareholders significant influence over our business.

A small number of investors own a significant number of shares of our common stock. As of March 31, 2004, Biogen, Inc. and Elan Corporation plc, or Elan, and its affiliates each held approximately 12.1 million shares of our common stock, or 14.9% of our current common shares outstanding. This concentration of stock ownership may allow these shareholders to exercise significant control over our strategic decisions and block, delay or substantially influence all matters requiring shareholder approval, such as:

election of directors;

amendment of our charter documents; or

approval of significant corporate transactions, such as a change of control of Targeted Genetics.

The interests of these shareholders may conflict with the interests of other holders of our common stock with regard to such matters. Furthermore, this concentration of ownership of our common stock could allow these shareholders to delay, deter or prevent a third party from acquiring control of Targeted Genetics at a premium over the then-current market price of our common stock, which could result in a decrease in our stock price.

Market fluctuations or volatility could cause the market price of our common stock to decline and limit our ability to raise capital.

The stock market in general and the market for biotechnology-related companies in particular have experienced extreme price and volume fluctuations, often unrelated to the operating performance of the affected companies. The market price of the securities of biotechnology companies, particularly companies such as ours without earnings and product revenue, has been highly volatile and is likely to remain so in the future. Any report of clinical trial results that are below the expectations of financial analysts or investors could result in a decline in our stock price. We believe that in the past, similar levels of volatility have contributed to the decline in the market price of our common stock, and may do so again in the future. Trading volumes of our common stock can increase dramatically, resulting in a volatile market price for our common stock. In addition, the trading price of our common stock could decline significantly as a result of sales of a substantial number of shares of our common stock, or the perception that significant sales could occur.

For example, on March 31, 2004, we and Elan entered into a termination agreement that permits Elan to sell shares of our common stock, subject to certain exceptions, under the trading volume limitations of Rule 144(e)(1) promulgated under the Securities Act of 1933, as amended, or the Securities Act. The trading volume limitations for Elan are reduced over time subject to the terms of the termination agreement. In addition, Elan has registration rights with respect to its holdings pursuant to a registration rights agreement dated July 21, 1999. Both the termination

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agreement and the registration rights agreement permit Elan to sell quantities of stock, which could adversely impact the price of our common stock.

In the past, securities class action litigation has been brought against companies that experience volatility in the market price of their securities. Market fluctuations in the price of our common stock could also adversely affect our collaborative opportunities and our future ability to sell equity securities at a price we deem appropriate. As a result, you could lose all or part of your investment.

Our future capital-raising activities could involve the issuance of equity securities, which would dilute your investment and could result in a decline in the trading price of our common stock.

To meet all or a portion of our long-term funding requirements, we may sell securities in the public or private equity markets if and when conditions are favorable, even if we do not have an immediate need for additional capital at that time. Raising funds through the issuance of equity securities will dilute the ownership of our existing shareholders. Furthermore, we may enter into financing transactions at prices that represent a substantial discount to market price. A negative reaction by investors and securities analysts to any discounted sale of our equity securities could result in a decline in the trading price of our common stock.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Our disclosure and analysis in this prospectus, the applicable prospectus supplement and the documents incorporated by reference into this prospectus and the applicable prospectus supplement contain forward-looking statements, which provide information regarding our current expectations, plans, objectives and forecasts of future events. Words such as may, will, believe, estimate, anticipate, plan, expect, may affect and intend, or concerning potential or opportunity and similar expressions or the negative thereof, are intended to identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. Forward-looking statements include, without limitation:

statements about our product development and commercialization goals and expectations;

potential market opportunities;

our plans for and anticipated results of our clinical development activities;

the potential advantage of our product candidates;

statements about our future capital requirements, the sufficiency of our capital resources to meet those requirements and the expected composition of our capital resources; and

other statements that are not historical facts.

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Forward-looking statements are based on the judgment of management at the time the statements are made. Inaccurate assumptions and known and unknown risks and uncertainties can affect the accuracy of forward-looking statements. Our actual results could differ materially from those stated in or implied by forward-looking statements for a number of reasons, including the risks described in the sections of this prospectus and the applicable prospectus supplement entitled Risk Factors, in our other public filings, press releases and statements by our management. Other factors besides those described in this prospectus, the applicable prospectus supplement and in our other public filings, press releases and statements by our management could also affect actual results.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this prospectus or the applicable prospectus supplement. We undertake no obligation to publicly update any forward-looking statement to reflect new information, events or circumstances, whether anticipated or unanticipated, or to conform the statement to actual results or changes in our expectations. You should, however, review the factors, risks and other information we provide in the reports we file from time to time with the SEC.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use any net proceeds from the sale of common stock offered by this prospectus for additional working capital and other general corporate purposes, as well as the possible acquisition of or investment in complementary businesses and technologies, through joint ventures, development agreements or otherwise. As of the date of this prospectus, we are not a party to any contract, commitment or letter of intent with respect to such acquisition or investment. Until we have used the net proceeds, we may invest them in short-term marketable securities.

PLAN OF DISTRIBUTION

Distributions by the Company

We may sell the common stock offered by this prospectus in one or more transactions:

to or through underwriters;

through dealers, agents or institutional investors;

directly to purchasers; or

through a combination of these methods.

We may sell the common stock at a fixed price or prices that may change, at prevailing market prices, at prices relating to prevailing market prices or at negotiated prices. Each time we sell common stock in a particular offering, we will provide a prospectus supplement or, if required, amend this prospectus, to disclose the following information with respect to that offering:

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the material terms of the distribution, including the number of shares and the consideration to be paid;

the identity of any underwriters, dealers, agents or purchasers that will purchase the common stock;

the amount of any compensation, discounts or commissions to be received by underwriters, dealers or agents;

the nature of any transactions by underwriters, dealers or agents during the offering that are intended to stabilize or maintain the market price of the common stock; and

the terms of any indemnification provisions.

Underwriters, dealers, agents or other purchasers may sell the common stock at a fixed price or prices that may change, at prices set at or relating to prevailing market prices or at negotiated prices.

Underwriters

We may sell all or a portion of the shares offered by this prospectus in one or more transactions to or through underwriters. In connection with the sale of our common stock, underwriters, dealers or agents may receive compensation from us, or from the purchasers of the common stock for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters, dealers, agents or purchasers that participate in the distribution of the common stock, and any broker-dealers or other persons acting on behalf of parties that participate in the distribution of the common stock, are underwriters under the Securities Act. Any discounts or commissions they receive and any profit on the resale of the common stock they receive constitute underwriting discounts and commissions under the Securities Act. Any person deemed to be an underwriter under the Securities Act may be subject to statutory liabilities, including those under Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Only underwriters named in the applicable prospectus supplement, if any, will be underwriters of the common stock offered through that prospectus supplement. Any underwriters used in an offering will acquire the common stock for their own account and may resell the common stock from time to time in one or more transactions, at a fixed public offering price or at varying prices determined at the time of sale. We may offer the common stock to the public through underwriting syndicates represented by managing underwriters or through underwriters without a syndicate. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time.

Agents; Direct Sales

We may designate agents to distribute the common stock offered by this prospectus. Unless the applicable prospectus supplement states otherwise, any such agent will act on a best-

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efforts basis for the period of appointment. We may authorize dealers or other persons acting as our agents to solicit offers by institutional investors to purchase the common stock from us under contracts that provide for payment and delivery on a future date. We may enter into agreements directly with purchasers that provide for the sale of the common stock over a period of time by means of draw-downs at our election, which the purchaser would be obligated to accept under specified conditions. Under a draw-down agreement, we may sell common stock at a per-share purchase price discounted from the market price of our common stock. We may also enter into agreements for sales of common stock based on combinations of or variations from these methods. We will describe in the applicable prospectus supplement the terms and conditions of any such agreements and any related commissions we will pay. Agents and underwriters may also engage in transactions with us or perform services for us in the ordinary course of business.

Stabilization Activities

In connection with a firm commitment underwritten offering of our common stock, underwriters and purchasers that are deemed to be underwriters under the Securities Act may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. For example, they may:

over-allot in connection with the offering, creating a syndicate short position for their own account;

bid for and purchase our common stock in the open market to cover short positions or to stabilize the price of our common stock; or

reclaim selling concessions allowed for distributing our common stock in the offering if the underwriters repurchase previously distributed common stock in transactions to cover short positions, stabilization transactions or otherwise.

Any of these activities may stabilize or maintain the market price above independent market levels. These activities may be conducted only in conjunction with a firm commitment underwritten offering. Underwriters are not required to engage in these activities and may terminate any such activity at any time. In engaging in any such activities, underwriters will be subject to the applicable provisions of the Securities Act and the Exchange Act and the rules and regulations under those acts. Regulation M under the Securities Act, for example, may restrict the ability of any person engaged in the distribution of the common stock to engage in market-making activities with respect to the common stock, and the anti-manipulation rules under the Exchange Act may also apply to market sales of the common stock. These provisions may affect the marketability of the common stock and the ability of any person to engage in market-making activities with respect to the common stock.

Indemnification

We may agree to indemnify underwriters, dealers, agents or other purchasers against civil liabilities they may incur in connection with the offer and sale of the common stock offered by this prospectus, including liabilities under the Securities Act. We may also agree to contribute to payments that these persons may be required to make with respect to these liabilities.

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WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement under the Securities Act relating to the common stock being offered by this prospectus. As permitted by the SEC rules, this prospectus omits some information included in the registration statement. For a more complete understanding of the common stock and this offering, you should refer to the registration statement, including its exhibits.

We file annual, quarterly and current reports, as well as registration and proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 with under the Securities Act with respect to the shares of common stock we are offering under this prospectus. SEC rules allow us to incorporate by reference into this prospectus the information we file with the SEC, which means we can disclose important information to you by referring you to those documents. The information included in the following documents is incorporated by reference and is considered to be a part of this prospectus:

1. Our quarterly report on Form 10-Q for the quarter ended March 31, 2004, filed with the SEC on April 30, 2004;
2. Our annual report on Form 10-K for the year ended December 31, 2003, filed with the SEC on March 12, 2004;
3. Our current reports on Form 8-K filed with the SEC on April 6, 2004, March 18, 2004, February 4, 2004, January 27, 2004, January 22, 2004, and January 13, 2004;
4. Our definitive proxy statement dated March 22, 2004, relating to our May 20, 2004 annual meeting of shareholders; and
5. The description of our common stock contained in our registration statements on Form 8-A filed on April 26, 1994 and October 22, 1996 under Section 12(g) of the Exchange Act, including any amendments or reports filed for the purpose of updating that description.

We also incorporate by reference all documents we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, (a) after the filing date of the initial registration statement of which this prospectus is a part and before the effectiveness of the registration statement and (b) after the effectiveness of the registration statement and before all of the shares registered under the registration statement are sold. The most recent information that we file with the SEC automatically updates and supersedes older information. The information contained in any such filing will be deemed to be part of this prospectus as of the date on which the document is filed, and any older information that has been modified or superseded will not be deemed to be a part of this prospectus. Unless specifically stated to the contrary, none of the information that we disclose under Item 9 or 12 of any Current Report on Form 8-K that we may from time to time furnish to the SEC will be incorporated by reference into, or otherwise included in, this prospectus.

Upon request, we will provide without charge to each person who receives a prospectus, including any beneficial owner, a copy of the information that has been incorporated by

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reference into this prospectus or the applicable prospectus supplement. Please direct your request, either in writing or by telephone, to the Secretary, Targeted Genetics Corporation, 1100 Olive Way, Suite 100, Seattle, Washington 98101, (206) 623-7612.

You may also inspect and copy the registration statement and other documents that we have filed with the SEC, at prescribed rates, at the public reference facility maintained by the SEC at Room 1024, 450 Fifth Street, N.W., Washington, D.C. 20549. You may obtain information regarding the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the registration statement and other documents we have filed with the SEC are publicly available through the SEC's website at <http://www.sec.gov> or through our website at www.targetedgenetics.com.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the common stock will be passed on for us by Orrick, Herrington & Sutcliffe LLP, Seattle, Washington.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, have audited our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2003, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.