

IMMUNOGEN INC
Form 424B3
May 27, 2004

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Filed Pursuant to Rule 424(b)(3)
Registration No. 333-100123

Prospectus Supplement
(To Prospectus dated January 22, 2003)

4,030,000 shares

Common stock

The selling stockholder named herein is selling all of the shares offered hereby to an institutional buyer. We will not receive any proceeds from the sale of shares by the selling stockholder.

Our common stock is traded on the Nasdaq National Market under the symbol "IMGN." On May 26, 2004, the closing sale price of our common stock on the Nasdaq National Market was \$7.96 per share.

| | Per share | Total |
|--|-----------|---------------|
| Public offering price | \$ 6.7125 | \$ 27,051,375 |
| Proceeds to selling stockholder, before expenses | \$ 6.7125 | \$ 27,051,375 |

Investing in our common stock involves a high degree of risk. See "Risk factors" beginning on page S-7.

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

The selling stockholder expects to deliver the shares of common stock to the institutional buyer on June 2, 2004.

May 27, 2004

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YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED IN THIS PROSPECTUS. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE YOU WITH INFORMATION THAT IS DIFFERENT FROM THAT CONTAINED IN THIS PROSPECTUS. THE SELLING STOCKHOLDER IS OFFERING TO SELL AND SEEKING OFFERS TO BUY SHARES OF OUR COMMON STOCK ONLY IN JURISDICTIONS WHERE OFFERS AND SALES ARE PERMITTED. THE INFORMATION CONTAINED IN THIS PROSPECTUS IS ACCURATE ONLY AS OF THE DATE OF THIS PROSPECTUS, REGARDLESS OF THE TIME OF DELIVERY OF THIS PROSPECTUS OR OF ANY SALE OF OUR COMMON STOCK. IN THIS PROSPECTUS, "IMMUNOGEN", "WE", "US" AND "OUR" REFER TO IMMUNOGEN, INC. AND OUR SUBSIDIARIES (UNLESS THE CONTEXT OTHERWISE REQUIRES).

Prospectus supplement summary

The following summary is qualified in its entirety by the more detailed information included elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus dated January 22, 2003. This summary does not contain all of the information that may be important to you. You should read the entire prospectus supplement and the accompanying prospectus, as well as the information incorporated by reference, before making an investment decision. See "Forward-Looking Statements" in the accompanying prospectus for information relating to statements contained in this prospectus supplement and in the prospectus that are not historical facts.

Business overview

Since our inception, we have been principally engaged in the development of novel targeted anticancer therapeutics. We believe our proprietary, tumor-activated prodrug, or TAP, technology enables tumor-targeting antibodies to deliver a cytotoxic agent specifically to cancer cells while avoiding damage to healthy tissue. The cytotoxic agent incorporated into our and our collaborators' TAP compounds in clinical testing is DM1. We developed DM1 from the naturally-occurring substance maytansine. In addition to our TAP technology, we also have significant expertise in the discovery and development of unconjugated antibodies for the treatment of cancer. Four compounds using our TAP technology have advanced to clinical testing for a variety of tumor types: huN901-DM1 and cantuzumab mertansine, which are wholly-owned by ImmunoGen; MLN2704, developed by Millennium Pharmaceuticals; and bivatuzumab mertansine, developed by Boehringer Ingelheim.

In addition to our own product development programs, we have entered into collaborative agreements with biotechnology and pharmaceutical companies enabling them to use our TAP technology with their proprietary antibodies to develop anticancer compounds. Currently, our collaborative partners include Abgenix, Inc., Aventis Pharmaceuticals, Inc., Boehringer Ingelheim International GmbH, Genentech, Inc. and Millennium Pharmaceuticals, Inc. We expect that substantially all of our revenue for the foreseeable future will result from payments under our collaborative arrangements. The compounds developed through these collaborations also contribute to the body of data available on our TAP technology.

In July 2003, we announced a discovery, development and commercialization collaboration with Aventis Pharmaceuticals, Inc. Under the terms of the agreement, Aventis obtained commercialization rights to three of the most advanced products in our preclinical pipeline and commercialization rights to certain new products developed during the research program portion of the collaboration. This collaboration allows us to access Aventis' cancer targets and their clinical development and commercialization capabilities. The terms of our other collaborative agreements vary, reflecting the value we add to the development of any particular product candidate; however, the agreements generally provide that we receive upfront and milestone payments, royalties on sales of any resulting products and reimbursement of our fully burdened cost to manufacture preclinical and clinical materials.

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Under certain agreements, we receive our fully burdened cost to manufacture preclinical and clinical materials plus a profit margin. Under the terms of the Aventis agreement, we also are entitled to receive committed research funding of approximately \$50.7 million during the three-year term of the research program, which began in September 2003. Should Aventis elect to exercise its contractual right to extend the term of the research program, we will receive additional research funding.

Our pipeline of product candidates includes compounds in development by ImmunoGen on a proprietary basis and compounds in development by our collaborative partners which are based on our proprietary technology.

| Compound | Antigen Target | Cancers with the Target | Stage | Developer/Partner |
|------------------------|---|---|----------------------|----------------------|
| huN901-DM1 | CD56 | Small cell lung cancer; neuroendocrine cancers; certain hematologic malignancies | Phase I/II | ImmunoGen |
| Cantuzumab mertansine | CanAg | Abdominal cancers including colorectal, pancreatic, and gastric cancers; many non-small-cell lung cancers | Phase I completed | ImmunoGen |
| MLN2704 | Prostate Specific Membrane Antigen (PSMA) | Prostate cancer | Phase I/II | Millennium |
| Bivatuzumab mertansine | CD44v6 | Head and neck cancers, breast cancers, certain hematologic malignancies | Phase I | Boehringer Ingelheim |
| Anti-CD33 TAP | CD33 | Acute myeloid leukemia | Preclinical | ImmunoGen/Aventis |
| Anti-IGF-IR antibody | IGF-IR | Solid tumors including lung, breast, prostate; certain hematologic malignancies | Preclinical | ImmunoGen/Aventis |
| Trastuzumab-DM1 | HER2 | HER2-positive tumors | Preclinical | Genentech |
| Others | | | Research/preclinical | ImmunoGen, partners |

We intend to advance our wholly owned lead compounds, huN901-DM1 and cantuzumab mertansine, through proof-of-concept clinical testing by ourselves.

huN901-DM1

huN901-DM1 consists of the N901 antibody, which we developed and humanized, linked to our DM1 cytotoxic agent. huN901-DM1 is currently in two clinical trials in relapsed small-cell lung cancer that were initiated by Vernalis: a Phase I/II study underway in the United States and a Phase I study underway in the United Kingdom. Vernalis will complete the Phase I clinical study

underway in the United Kingdom and will continue the Phase I/II clinical study underway in the United States until June 30, 2004. On January 8, 2004, we announced that, pursuant to the terms and conditions of the agreement between Vernalis and ourselves, Vernalis relinquished its rights to develop and commercialize huN901-DM1. We plan to initiate a proof-of-concept trial of huN901-DM1 in CD56-positive hematologic malignancies in the United States.

Cantuzumab mertansine

Cantuzumab mertansine consists of the humanized C242 monoclonal antibody linked to DM1. In Phase I clinical trials conducted by GlaxoSmithKline, the compound was found to be well tolerated and evidence of biologic activity was reported. We plan to initiate proof-of-concept testing of cantuzumab mertansine, or an improved version of the compound, in 2005.

MLN2704

Millennium licensed our maytansinoid technology to use in the development of TAP products for cancers expressing prostate-specific membrane antigen (PSMA) to develop MLN2704. MLN2704 is composed of Millennium's anti-PSMA MLN591 antibody and our DM1. On November 19, 2002, Millennium informed us that clinical trials of MLN2704 had been initiated. On October 9, 2003, Millennium announced it had initiated a second trial with the compound, a multi-dose Phase I/II study. This compound has been granted Fast Track status by the US FDA.

Bivatuzumab mertansine

Boehringer Ingelheim licensed our maytansinoid TAP technology for use with antibodies that target CD44, such as their anti-CD44v6 antibody. On October 8, 2002, Boehringer Ingelheim confirmed with us that clinical trials of the novel anticancer agent, bivatuzumab mertansine, composed of our DM1 and Boehringer Ingelheim's anti-CD44v6 antibody, had been initiated in late September 2002.

Recent developments

On January 8, 2004, we announced that, pursuant to the terms and conditions of the agreement between Vernalis and ourselves, Vernalis relinquished its rights to develop and commercialize huN901-DM1. As a result, we have regained the rights to develop and commercialize huN901-DM1. Vernalis will complete the Phase I clinical study currently underway in the United Kingdom and will continue the Phase I/II clinical study being conducted in the United States until June 30, 2004, at its own expense. We plan to initiate an additional clinical trial of huN901-DM1 in the United States in hematologic malignancies.

On January 8, 2004, we also announced our intention to advance our two wholly-owned clinical stage products, huN901-DM1 and cantuzumab mertansine, into Phase IIA proof-of-concept testing on our own. We intend to evaluate whether to outlicense all or part of the development and commercial rights to these compounds after proof-of-concept testing.

On March 17, 2004 Millennium announced that MLN2704 had been selected to participate in the Continuous Marketing Application Pilot 2 program being conducted by the FDA. According to the FDA, the CMA Pilot 2 program is an innovative program designed to facilitate scientific exchange between the sponsor and FDA during the Investigational New Drug phase of new drug development of Fast Track products.

On April 26, 2004, Aventis and Sanofi-Synthélabo S.A. announced that they had entered into an agreement to combine the operations of Aventis and Sanofi-Synthélabo through a merger of the two companies to create Sanofi-Aventis S.A. While this may result in altered developmental priorities at Sanofi-Aventis, Aventis' obligations with respect to committed research funding payable to us during the term of the research program are binding upon its successors.

On May 12, 2004, the Board of Directors of ImmunoGen terminated, effective immediately, the share repurchase program that it originally authorized in August 2002. Pursuant to this repurchase program, during the period August 2002 to June 2003, we repurchased 3,675,062 shares of our common stock for \$11.1 million.

To date, we have not generated revenues from commercial product sales and we expect to incur significant operating losses over the foreseeable future. For the nine months ended March 31, 2004 we had revenues of \$16.6 million and a net loss of \$6.2 million. As of March 31, 2004, we had approximately \$101.8 million in cash and marketable securities. In August 2003, we received \$12.0 million from Aventis, representing the non-refundable, upfront payment owed to us upon the execution of our collaboration agreement which we entered into during July, 2003. We anticipate that our current capital resources and future collaboration payments, including the committed research funding due to us under the Aventis agreement, will enable us to meet our current and projected operational expenses and capital expenditures for at least the next three to five fiscal years.

We do not anticipate that we will have a commercially-approved product within the foreseeable future. Research and development expenses are expected to increase significantly in the near term as we continue our preclinical and clinical development efforts.

The offering

| | |
|---|---|
| Common stock offered by the selling stockholder | 4,030,000 shares |
| Common stock outstanding before and after this offering | 40,724,572 shares |
| Risk Factors | See "Risk Factors" and other information included in or incorporated by reference in the accompanying prospectus and in this prospectus supplement for a discussion of factors you should carefully consider before deciding to invest in shares of common stock. |
| Dividend policy | We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings for funding growth and, therefore, do not anticipate that we will pay any cash dividends on our common stock in the foreseeable future. |
| Nasdaq National Market symbol | IMGN |

Information regarding the number of shares of common stock outstanding is as of May 12, 2004.

Selling stockholder

A total of 4,030,000 shares of our common stock are being offered for sale by the selling stockholder listed below. The following table provides information about the selling stockholder, including:

the number and percentage of outstanding shares of our common stock that the selling stockholder owned as of May 12, 2004;

how many shares are being offered by the selling stockholder for sale by this prospectus supplement; and

the number and percentage of outstanding shares of our common stock that the selling stockholder will own after the offering, assuming all shares covered by this prospectus supplement are sold.

| Name and address of beneficial owner | Beneficial ownership as of May 12, 2004 | | Shares offered | Beneficial ownership after offering | |
|--|--|---------|-------------------|--|---------|
| | Shares | Percent | | Shares | Percent |
| Shire Biochem Inc. 275 Armand-Frappier Blvd. Laval, Quebec PQ H7V4A7 Canada | 4,096,098 | 10.1% | 4,030,000 | 66,098 | 0.2% |

For additional information regarding Shire Biochem Inc., please see page 17 of the accompanying prospectus.

Use of proceeds

We will not receive any proceeds from the sale of common stock covered by this prospectus supplement.

Risk factors

The risks and uncertainties described below are those that we currently believe may materially affect our company. Additional risks and uncertainties that we are unaware of or that we currently deem immaterial also may become important factors that affect our Company.

If our TAP technology does not produce safe, effective and commercially viable products, our business will be severely harmed.

Our TAP technology is a novel approach to the treatment of cancer. None of our TAP product candidates has obtained regulatory approval and all of them are in early stages of development. Our TAP product candidates may not prove to be safe, effective or commercially viable treatments for cancer and our TAP technology may not result in any meaningful benefits to our current or potential collaborative partners. Furthermore, we are aware of only one antibody-drug conjugate that has obtained FDA approval and is based on technology similar to our TAP technology. If our TAP technology fails to generate product candidates that are safe, effective and commercially viable treatments for cancer, and fails to obtain FDA approval, our business is likely to be severely harmed.

Clinical trials for our product candidates will be lengthy and expensive and their outcome is uncertain.

Before obtaining regulatory approval for the commercial sale of any product candidates, we and/or our collaborative partners must demonstrate through preclinical testing and clinical trials that our product candidates are safe and effective for use in humans. Conducting clinical trials is a time-consuming, expensive and uncertain process and takes years to complete. Our most advanced product candidates are only in the Phase I or Phase I/II stage of clinical trials. Historically, the results from preclinical testing and early clinical trials often have not been predictive of results obtained in later clinical trials. Frequently, drugs that have shown promising results in preclinical or early clinical trials subsequently fail to establish sufficient safety and efficacy data necessary to obtain regulatory approval. At any time during the clinical trials, we, our collaborative partners, or the FDA might delay or halt any clinical trials for our product candidates for various reasons, including:

ineffectiveness of the product candidate;

discovery of unacceptable toxicities or side effects;

development of disease resistance or other physiological factors;

delays in patient enrollment; or

other reasons that are internal to the businesses of our collaborative partners, which reasons they may not share with us.

The results of clinical trials may fail to demonstrate the safety or effectiveness of our product candidates to the extent necessary to obtain regulatory approval or that commercialization of our product candidates is worthwhile. Any failure or substantial delay in successfully completing clinical trials and obtaining regulatory approval for our product candidates could severely harm our business.

If our collaborative partners fail to perform their obligations under our agreements, or determine not to continue with clinical trials for particular product candidates, our ability to develop and market potential products could be severely limited.

Our strategy for the development and commercialization of our product candidates depends, in large part, upon the formation of collaborative arrangements. Collaborations allow us to:

- generate cash flow and revenue;
- offset some of the costs associated with our internal research and development, preclinical testing, clinical trials and manufacturing;
- seek and obtain regulatory approvals;
- successfully commercialize existing and future product candidates; and
- develop antibodies for additional product candidates and discover additional cell surface markers for antibody development.

If we fail to secure or maintain successful collaborative arrangements, our development and marketing activities may be delayed or scaled back. In addition, we may be unable to negotiate other collaborative arrangements or, if necessary, modify our existing arrangements on acceptable terms. The development, regulatory approval and commercialization of our product candidates will depend primarily on the efforts of collaborative partners.

We have also entered into collaborations with Genentech, Abgenix, Millennium, Boehringer Ingelheim and Aventis. We cannot control the amount and timing of resources our partners may devote to our products. Our partners may separately pursue competing products, therapeutic approaches or technologies to develop treatments for the diseases targeted by us or our collaborative efforts. Even if our partners continue their contributions to the collaborative arrangements, they may nevertheless decide not to pursue the development or commercialization of any resulting products. Also, our partners may fail to perform their obligations under the collaborative agreements or may be slow in performing their obligations. Our partners can terminate our collaborative agreements under certain conditions. The decision to advance a product that is covered by a collaborative agreement through clinical trials and ultimately to commercialization is in the sole discretion of our collaborative partners. If any collaborative partner were to terminate or breach our agreement with it, or fail to complete its obligations to us in a timely manner, our anticipated revenue from the agreement and development and commercialization of our products could be severely limited. If we are not able to establish additional collaborations or any or all of our existing collaborations are terminated and we are not able to enter into alternative collaborations on acceptable terms, we may be required to undertake product development, manufacture and commercialization of our products ourselves, and we may not have the funds or capability to do this. If our collaborators fail to successfully develop and commercialize TAP products, our business will be severely harmed.

We depend on a small number of collaborators for a substantial portion of our revenue. The loss of or a material reduction in activity by any one of these collaborators could result in a substantial decline in revenue.

We have and will continue to have collaborations with a limited number of companies. As a result, our financial performance depends on the efforts and overall success of these companies. The failure of any one of our collaborative partners to perform its obligations under its agreement with us, including making any royalty, milestone or other payments to us, could have a material adverse effect on our financial condition. Further, any material reduction by any one of our collaborative partners in its level of commitment of resources, funding, personnel, and interest in continued development under its agreement with us could have a material adverse effect on our financial condition. Also, if consolidation trends in the healthcare industry continue, the number of our potential collaborators could decrease, which could have an adverse impact on our development efforts. If a present or future collaborator of ours were to be involved in a business combination, their continued pursuit and emphasis on our product development program could be delayed, diminished or terminated. For example, our collaborative agreement with Vernalis was terminated in January 2004, after British Biotech merged with Vernalis and Vernalis elected to relinquish its rights to develop and commercialize huN901-DM1, the product subject to the collaborative agreement. In addition, Aventis recently announced an agreement to merge with Sanofi-Synthelabo. We do not know what effect, if any, this will have on our collaboration with Aventis.

If our collaborators' requirements for clinical product that we manufacture for them are significantly lower than we have estimated, our financial results and condition could be significantly harmed.

We procure certain components of finished conjugate including ansamitocin P3, DM1, and linker on behalf of our collaborators. In order to meet our commitments to our collaborators, we are required to enter into agreements with third parties to produce these components well in advance of our production of clinical materials on behalf of our collaborators. If our collaborators do not require as much clinical material as we have contracted to produce, we may not be able to recover our investment in these components and we may suffer significant losses.

In April 2003, one of our collaborators informed us that it may explore alternative sources of ansamitocin P3 and/or DM1. If the collaborator finds and elects to use an alternative source, we may be required to write down excess inventory relating to this collaborator's product.

In addition, we run a pilot manufacturing facility. A significant portion of the cost for salaries of the personnel operating this facility, including the cost of manufacturing personnel, is charged to the cost of producing clinical materials on behalf of our collaborators. If we produce fewer batches of clinical materials for our collaborators, less of the cost of operating the pilot manufacturing facility will be charged to our collaborators and our financial condition could be significantly harmed.

We have a history of operating losses and expect to incur significant additional operating losses.

We have generated operating losses since our inception. As of March 31, 2004, we had an accumulated deficit of \$210.1 million. For the nine months ended March 31, 2004 and the fiscal years ended June 30, 2003, 2002 and 2001, we generated losses of \$6.2 million, \$20.0 million, \$14.6 million and \$15.3 million, respectively. We may never be profitable. We expect to incur substantial additional operating expenses over the next several years as our research, development, preclinical testing and collaborator support activities increase. We intend to continue to invest significantly in our products and bring more of the product development process in-house, which will be a time-consuming and expensive process. Further, we expect to invest significant resources supporting our existing collaborators as they work to develop, test and commercialize TAP and other antibody products, and we or our collaborators may encounter technological or regulatory difficulties as part of this development and commercialization process that we cannot overcome or remedy. We may also incur substantial marketing and other costs in the future if we decide to establish marketing and sales capabilities to commercialize our products. None of our product candidates has generated any commercial revenue and our only revenues to date have been primarily from upfront and milestone payments and clinical materials reimbursement from our collaborative partners. We do not expect to generate revenues from the commercial sale of our products in the foreseeable future, and we may never generate revenues from the commercial sale of products. Even if we do successfully develop products that can be marketed and sold commercially, we will need to generate significant revenues from those products to achieve and maintain profitability. Even if we do become profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis.

We and our collaborative partners are subject to extensive government regulations and we and our collaborative partners may not be able to obtain regulatory approvals.

We or our collaborative partners may not receive the regulatory approvals necessary to commercialize our product candidates, which could cause our business to be severely harmed. Our product candidates are subject to extensive and rigorous government regulation. The FDA regulates, among other things, the development, testing, manufacture, safety, record-keeping, labeling, storage, approval, advertising, promotion, sale and distribution of pharmaceutical products. If our potential products are marketed abroad, they will also be subject to extensive regulation by foreign governments. None of our product candidates has been approved for sale in the United States or any foreign market. The regulatory review and approval process, which includes preclinical studies and clinical trials of each product candidate, is lengthy, complex, expensive and uncertain. Securing FDA approval requires the submission of extensive preclinical and clinical data and supporting information to the FDA for each indication to establish the product candidate's safety and efficacy. Data obtained from preclinical and clinical trials are susceptible to varying interpretation, which may delay, limit or prevent regulatory approval. The approval process may take many years to complete and may involve ongoing requirements for post-marketing studies. In light of the limited regulatory history of monoclonal antibody-based therapeutics, regulatory approvals for our products may not be obtained without lengthy delays, if at all. Any FDA or other regulatory approvals of our

product candidates, once obtained, may be withdrawn. The effect of government regulation may be to:

- delay marketing of potential products for a considerable period of time;
- limit the indicated uses for which potential products may be marketed;
- impose costly requirements on our activities; and
- provide competitive advantage to other pharmaceutical and biotechnology companies.

We may encounter delays or rejections in the regulatory approval process because of additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. Failure to comply with applicable FDA or other applicable regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, total or partial suspension of production or injunction, as well as other regulatory action against our product candidates or us. Outside the United States, our ability to market a product is contingent upon receiving clearances from the appropriate regulatory authorities. This foreign regulatory approval process includes similar risks to those associated with the FDA approval process. In addition, we are, or may become, subject to various federal, state and local laws, regulations and recommendations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals and the use and disposal of hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research work. If we fail to comply with the laws and regulations pertaining to our business, we may be subject to sanctions, including the temporary or permanent suspension of operations, product recalls, marketing restrictions and civil and criminal penalties.

We may be unable to establish the manufacturing capabilities necessary to develop and commercialize our potential products.

Currently, we only have one in-house pilot scale manufacturing facility for the manufacture of products necessary for clinical testing. We do not have sufficient manufacturing capacity to manufacture all of our product candidates in quantities necessary for commercial sale. In addition, our manufacturing capacity may be insufficient to complete all clinical trials contemplated by us or our collaborators over time. We intend to rely in part on third-party contract manufacturers to produce sufficiently large quantities of drug materials that are and will be needed for clinical trials and commercialization of our potential products. Third-party manufacturers may not be able to meet our needs with respect to timing, quantity or quality of materials. If we are unable to contract for a sufficient supply of needed materials on acceptable terms, or if we should encounter delays or difficulties in our relationships with manufacturers, our clinical trials may be delayed, thereby delaying the submission of product candidates for regulatory approval and the market introduction and subsequent commercialization of our potential products. Any such delays may lower our revenues and potential profitability.

We may develop our manufacturing capacity in part by expanding our current facilities or building new facilities. Either of these activities would require substantial additional funds and we would need to hire and train significant numbers of employees to staff these facilities. We

may not be able to develop manufacturing facilities that are sufficient to produce drug materials for clinical trials or commercial use. We and any third-party manufacturers that we may use must continually adhere to Current Good Manufacturing Practices regulations enforced by the FDA through its facilities inspection program. If our facilities or the facilities of third-party manufacturers cannot pass a pre-approval plant inspection, the FDA approval of our product candidates will not be granted. In complying with these regulations and foreign regulatory requirements, we and any of our third-party manufacturers will be obligated to expend time, money and effort on production, record-keeping and quality control to assure that our potential products meet applicable specifications and other requirements. If we or any third-party manufacturer with whom we may contract fail to maintain regulatory compliance, we or the third party may be subject to fines and/or manufacturing operations may be suspended.

We have only one in-house pilot manufacturing facility, and any prolonged and significant disruption at that facility could impair our ability to manufacture products for clinical testing.

Currently, we are contractually obligated to manufacture Phase I and non-pivotal Phase II clinical products for certain of our collaborators. We manufacture this material in a pilot scale manufacturing facility. We only have one such manufacturing facility in which we can manufacture clinical products. Our current manufacturing facility contains highly specialized equipment and utilizes complicated production processes developed over a number of years that would be difficult, time-consuming and costly to duplicate. Any prolonged disruption in the operations of our manufacturing facility would have a significant negative impact on our ability to manufacture products for clinical testing on our own and would cause us to seek additional third-party manufacturing contracts, thereby increasing our development costs. Even though we carry manufacturing interruption insurance policies, we may suffer losses as a result of business interruptions that exceed the coverage available under our insurance policies. Certain events, such as natural disasters, fire, sabotage or business accidents, which could impact our current or future facilities, could have a significant negative impact on our operations by disrupting our product development efforts until such time as we are able to repair our facility or put in place third-party contract manufacturers to assume this manufacturing role.

We rely on single source suppliers to manufacture the primary component for our small molecule effector drug and DM1 itself. Any problems experienced by either supplier could negatively affect our operations.

We rely on third-party suppliers for some of the materials used in the manufacturing of our TAP product candidates and small molecule effector drugs. Our most advanced small molecule effector drug is DM1. DM1 is the cytotoxic agent used in all of our current TAP product candidates and the subject of most of our collaborations. One of the primary components required to manufacture DM1 is its precursor, ansamitocin P3. Currently, only one vendor manufactures and is able to supply us with this material. Any problems experienced by this vendor could result in a delay or interruption in the supply of ansamitocin P3 to us until this vendor cures the problem or until we locate an alternative source of supply. Any delay or interruption in our supply of ansamitocin P3 would likely lead to a delay or interruption in our manufacturing operations and preclinical and clinical trials of our product candidates, which could negatively affect our business. We also have an agreement with only one vendor to

convert ansamitocin P3 to DM1. Any problems experienced by this vendor could result in a delay or interruption in the supply of DM1 to us until this vendor cures the problem or until we locate an alternative source of supply. Any delay or interruption in our supply of DM1 could lead to a delay or interruption in our manufacturing operations and preclinical and clinical trials of our product candidates or our collaborators' product candidates, which could negatively affect our business.

Any inability to license from third parties their proprietary technologies or processes which we use in connection with the development and manufacture of our product candidates may impair our business.

Other companies, universities and research institutions have or may obtain patents that could limit our ability to use, manufacture, market or sell our product candidates or impair our competitive position. As a result, we would have to obtain licenses from other parties before we could continue using, manufacturing, marketing or selling our potential products. Any necessary licenses may not be available on commercially acceptable terms, if at all. If we do not obtain required licenses, we may not be able to market our potential products at all or we may encounter significant delays in product development while we redesign products or methods that could infringe on the patents held by others.

We may be unable to establish sales and marketing capabilities necessary to successfully commercialize our potential products.

We currently have no direct sales or marketing capabilities. We anticipate relying on third parties to market and sell most of our primary product candidates. If we decide to market our potential products through a direct sales force, we would need to either hire a sales force with expertise in pharmaceutical sales or contract with a third party to provide a sales force to meet our needs. We may be unable to establish marketing, sales and distribution capabilities necessary to commercialize and gain market acceptance for our potential products and be competitive. In addition, co-promotion or other marketing arrangements with third parties to commercialize potential products could significantly limit the revenues we derive from these potential products, and these third parties may fail to commercialize our potential products successfully.

If our or our collaborators' product candidates do not gain market acceptance, our business will suffer.

Even if clinical trials demonstrate the safety and efficacy of our product candidates and the necessary regulatory approvals are obtained, our product candidates may not gain market acceptance among physicians, patients, healthcare payors and the medical community. The degree of market acceptance of any product candidates that we develop will depend on a number of factors, including:

- the degree of clinical efficacy and safety;
- cost-effectiveness of our product candidates;
- their advantage over alternative treatment methods;
- reimbursement policies of government and third-party payors; and
- the quality of our or our collaborative partners' marketing and distribution capabilities for our product candidates.

Physicians will not recommend therapies using any of our future products until such time as clinical data or other factors demonstrate the safety and efficacy of those products as compared to conventional drug and other treatments. Even if the clinical safety and efficacy of therapies using our products is established, physicians may elect not to recommend the therapies for any number of other reasons, including whether the mode of administration of our products is effective for certain conditions, and whether the physicians are already using competing products that satisfy their treatment objectives. Physicians, patients, third-party payors and the medical community may not accept and use any product candidates that we, or our collaborative partners, develop. If our products do not achieve significant market acceptance, we will not be able to recover the significant investment we have made in developing such products and our business would be severely harmed.

We may be unable to compete successfully.

The markets in which we compete are well established and intensely competitive. We may be unable to compete successfully against our current and future competitors. Our failure to compete successfully may result in pricing reductions, reduced gross margins and failure to achieve market acceptance for our potential products. Our competitors include pharmaceutical companies, biotechnology companies, chemical companies, academic and research institutions and government agencies. Many of these organizations have substantially more experience and more capital, research and development, regulatory, manufacturing, sales, marketing, human and other resources than we do. As a result, they may:

- develop products that are safer or more effective than our product candidates;
- obtain FDA and other regulatory approvals or reach the market with their products more rapidly than we can, reducing the potential sales of our product candidates;
- devote greater resources to market or sell their products;
- adapt more quickly to new technologies and scientific advances;

initiate or withstand substantial price competition more successfully than we can;

have greater success in recruiting skilled scientific workers from the limited pool of available talent;

more effectively negotiate third-party licensing and collaboration arrangements; and

take advantage of acquisition or other opportunities more readily than we can.

A number of pharmaceutical and biotechnology companies are currently developing products targeting the same types of cancer that we target, and some of our competitors' products have entered clinical trials or already are commercially available. In addition, our product candidates, if approved and commercialized, will compete against well-established, existing, therapeutic products that are currently reimbursed by government health administration authorities, private health insurers and health maintenance organizations. We face and will continue to face intense competition from other companies for collaborative arrangements with pharmaceutical and biotechnology companies, for relationships with academic and research institutions, and for licenses to proprietary technology. In addition, we anticipate that we will face increased competition in the future as new companies enter our markets and as scientific developments surrounding antibody-based therapeutics for cancer continue to accelerate. While we will seek to expand our technological capabilities to remain competitive, research and development by others may render our technology or product candidates obsolete or noncompetitive or result in treatments or cures superior to any therapy developed by us.

If we are unable to protect our intellectual property rights adequately, the value of our technology and our product candidates could be diminished.

Our success depends in part on obtaining, maintaining and enforcing our patents and other proprietary rights and our ability to avoid infringing the proprietary rights of others. Patent law relating to the scope of claims in the biotechnology field in which we operate is still evolving, is surrounded by a great deal of uncertainty and involves complex legal, scientific and factual questions. To date, no consistent policy has emerged regarding the breadth of claims allowed in biotechnology patents. Accordingly, our pending patent applications may not result in issued patents. Although we own several patents, the issuance of a patent is not conclusive as to its validity or enforceability. Through litigation, a third party may challenge the validity or enforceability of a patent after its issuance. Also, patents and applications owned or licensed by us may become the subject of interference proceedings in the United States Patent and Trademark Office to determine priority of invention that could result in substantial cost to us. An adverse decision in an interference proceeding may result in our loss of rights under a patent or patent application. It is unclear how much protection, if any, will be given to our patents if we attempt to enforce them and they are challenged in court or in other proceedings. A competitor may successfully challenge our patents or a challenge could result in limitations of the patents' coverage. In addition, the cost of litigation or interference proceedings to uphold the validity of patents can be substantial. If we are unsuccessful in these proceedings, third parties may be able to use our patented technology without paying us licensing fees or royalties. Moreover, competitors may infringe our patents or successfully avoid them through design innovation. To prevent infringement or unauthorized use, we may need to file infringement claims, which are expensive and time-consuming. In an infringement proceeding a court may decide that a patent of ours is not valid. Even if the validity of our

patents were upheld, a court may refuse to stop the other party from using the technology at issue on the ground that its activities are not covered by our patents. Policing unauthorized use of our intellectual property is difficult, and we may not be able to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States.

In addition to our patent rights, we also rely on unpatented technology, trade secrets, know-how and confidential information. Third parties may independently develop substantially equivalent information and techniques or otherwise gain access to or disclose our technology. We may not be able to effectively protect our rights in unpatented technology, trade secrets, know-how and confidential information. We require each of our employees, consultants and corporate partners to execute a confidentiality agreement at the commencement of an employment, consulting or collaborative relationship with us. However, these agreements may not provide effective protection of our information or, in the event of unauthorized use or disclosure, they may not provide adequate remedies.

If we are forced to litigate or undertake other proceedings in order to enforce our intellectual property rights, we may be subject to substantial costs and liability or be prohibited from commercializing our potential products.

Patent litigation is very common in the biotechnology and pharmaceutical industries. Third parties may assert patent or other intellectual property infringement claims against us with respect to our technologies, products or other matters. Any claims that might be brought against us relating to infringement of patents may cause us to incur significant expenses and, if successfully asserted against us, may cause us to pay substantial damages and limit our ability to use the intellectual property subject to these claims. Even if we were to prevail, any litigation would be costly and time-consuming and could divert the attention of our management and key personnel from our business operations. Furthermore, as a result of a patent infringement suit, we may be forced to stop or delay developing, manufacturing or selling potential products that incorporate the challenged intellectual property unless we enter into royalty or license agreements. Furthermore, because some patent applications in the United States are maintained in secrecy until a patent issues, others may have filed patent applications for our technology covered by our pending applications. There are third-party patents, patent applications and other intellectual property relevant to our potential products that may block or compete with our products or processes. In addition, we sometimes undertake research and development with respect to potential products even when we are aware of third-party patents that may be relevant to our potential products, on the basis that such patents may be challenged or licensed by us. If our subsequent challenge to such patents were not to prevail, we may not be able to commercialize our potential products after having already incurred significant expenditures unless we are able to license the intellectual property on commercially reasonable terms. We may not be able to obtain royalty or license agreements on terms acceptable to us, if at all. Even if we were able to obtain licenses to such technology, some licenses may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. Ultimately, we may be unable to commercialize some of our potential products or may have to cease some of our business operations, which could severely harm our business.

We use hazardous materials in our business, and any claims relating to improper handling, storage or disposal of these materials could harm our business.

Our research and development activities involve the controlled use of hazardous materials, chemicals, biological materials and radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these materials and certain waste products. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards prescribed by applicable laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of such an accident, we could be held liable for any resulting damages, and any liability could exceed our resources. We may be required to incur significant costs to comply with these laws in the future. Failure to comply with these laws could result in fines and the revocation of permits, which could prevent us from conducting our business.

We face product liability risks and may not be able to obtain adequate insurance.

The use of our product candidates during testing or after approval entails an inherent risk of adverse effects, which could expose us to product liability claims. Regardless of their merit or eventual outcome, product liability claims may result in:

- decreased demand for our product;
- injury to our reputation and significant media attention;
- withdrawal of clinical trial volunteers;
- costs of litigation;
- distraction of management; and
- substantial monetary awards to plaintiffs.

We may not have sufficient resources to satisfy any liability resulting from these claims. We currently have \$5.0 million of product liability insurance for products which are in clinical testing. This coverage may not be adequate in scope to protect us in the event of a successful product liability claim. Further, we may not be able to maintain our current insurance or obtain general product liability insurance on reasonable terms and at an acceptable cost if we or our collaborative partners begin commercial production of our proposed product candidates. This insurance, even if we can obtain and maintain it, may not be sufficient to provide us with adequate coverage against potential liabilities.

We depend on our key personnel and we must continue to attract and retain key employees and consultants.

We depend on our key scientific and management personnel. Our ability to pursue the development of our current and future product candidates depends largely on retaining the services of our existing personnel and hiring additional qualified scientific personnel to perform research and development. We will also need to hire personnel with expertise in clinical testing, government regulation, manufacturing, marketing and finance. Attracting and retaining qualified personnel is and will continue to be critical to our success. We may not be

able to attract and retain personnel on acceptable terms given the competition for such personnel among biotechnology, pharmaceutical and healthcare companies, universities and non-profit research institutions. Failure to retain our existing key management and scientific personnel or to attract additional highly qualified personnel could delay the development of our product candidates and harm our business.

If we are unable to obtain additional funding when needed, we may have to delay or scale back some of our programs or grant rights to third parties to develop and market our products.

We will continue to expend substantial resources developing new and existing product candidates, including costs associated with research and development, acquiring new technologies, conducting preclinical and clinical trials, obtaining regulatory approvals and manufacturing products as well as providing certain support to our collaborators in the development of their products. We believe that our current working capital and future payments, if any, from our collaboration arrangements, including committed research funding that we expect to receive from Aventis pursuant to the terms of our collaboration agreement, will be sufficient to meet our current and projected operating and capital requirements for at least the next three to five years. However, we may need additional financing sooner due to a number of factors including:

if either we or any of our collaborators incur higher than expected costs or experience slower than expected progress in developing product candidates and obtaining regulatory approvals;

lower revenues than expected under our collaboration agreements; or

acquisition of technologies and other business opportunities that require financial commitments.

Additional funding may not be available to us on favorable terms, or at all. We may raise additional funds through public or private financings, collaborative arrangements or other arrangements. Debt financing, if available, may involve covenants that could restrict our business activities. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, scale back or eliminate expenditures for some of our development programs or grant rights to develop and market product candidates that we would otherwise prefer to internally develop and market. If we are required to grant such rights, the ultimate value of these product candidates to us may be reduced.

Fluctuations in our quarterly revenue and operating results may cause our stock price to decline.

Our operating results have fluctuated in the past and are likely to continue to do so in the future. Our revenue is unpredictable and may fluctuate due to the timing of non-recurring licensing fees, decisions of our collaborative partners with respect to our agreements with them, reimbursement for manufacturing services, the achievement of milestones and our receipt of the related milestone payments under new and existing licensing and collaboration agreements. Revenue historically recognized under our prior collaboration agreements may not be an indicator of revenue from any future collaborations. In addition, our expenses are

unpredictable and may fluctuate from quarter-to-quarter due to the timing of expenses, which may include obligations to manufacture or supply product or payments owed by us under licensing or collaboration agreements. It is possible that our quarterly operating results will not meet the expectations of securities analysts or investors, causing the market price of our common stock to decline. We believe that quarter to quarter comparisons of our operating results are not a good indicator of our future performance and should not be relied upon to predict the future performance of our stock price.

Price range of our common stock and dividend policy

ImmunoGen's Common Stock is quoted on the Nasdaq National Market under the symbol IMGN. The table below sets forth the high and low bid prices on the Nasdaq National Market for our Common Stock for each of the quarters indicated.

| | Fiscal Year 2004 | | Fiscal Year 2003 | | Fiscal Year 2002 | |
|---------------------------------------|------------------|----------|------------------|----------|------------------|----------|
| | High | Low | High | Low | High | Low |
| First Quarter | \$ 4.750 | \$ 4.350 | \$ 3.880 | \$ 2.020 | \$ 20.000 | \$ 7.250 |
| Second Quarter | 5.320 | 4.840 | 4.200 | 2.710 | 18.130 | 8.450 |
| Third Quarter | 6.750 | 6.640 | 3.490 | 2.070 | 17.000 | 9.820 |
| Fourth Quarter (through May 26, 2004) | 12.40 | 6.67 | 4.550 | 2.300 | 11.270 | 2.000 |

The Company has not paid any cash dividends on its Common Stock since its inception and does not intend to pay any cash dividends in the foreseeable future.

PROSPECTUS

IMMUNOGEN, INC.

4,096,098 SHARES OF COMMON STOCK
(PAR VALUE OF \$.01 PER SHARE)

We are registering 4,096,098 shares of our Common Stock for sale by the Selling Stockholder listed on page 17 of this prospectus.

We will not receive any of the proceeds from the sale of our Common Stock by the Selling Stockholder.

Our business involves significant risks. These risks are described under "Risk Factors" beginning on page 4.

Our Common Stock is listed on the Nasdaq National Market under the symbol "IMGN." On January 21, 2003, the closing sale price of our Common Stock on the Nasdaq National Market was \$3.11 per share.

Our address is ImmunoGen, Inc., 128 Sidney Street, Cambridge, Massachusetts 02139 and our telephone number is (617) 995-2500.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED ON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is January 22, 2003

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YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED IN THIS PROSPECTUS. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE YOU WITH INFORMATION THAT IS DIFFERENT FROM THAT CONTAINED IN THIS PROSPECTUS. THE SELLING STOCKHOLDER IS OFFERING TO SELL AND SEEKING OFFERS TO BUY SHARES OF OUR COMMON STOCK ONLY IN JURISDICTIONS WHERE OFFERS AND SALES ARE PERMITTED. THE INFORMATION CONTAINED IN THIS PROSPECTUS IS ACCURATE ONLY AS OF THE DATE OF THIS PROSPECTUS, REGARDLESS OF THE TIME OF DELIVERY OF THIS PROSPECTUS OR OF ANY SALE OF OUR COMMON STOCK. IN THIS PROSPECTUS, "IMMUNOGEN", "WE", "US" AND "OUR" REFER TO IMMUNOGEN, INC. AND OUR SUBSIDIARIES (UNLESS THE CONTEXT OTHERWISE REQUIRES).

Prospectus summary

The following is only a summary. You should carefully read the more detailed information contained in this prospectus, including information incorporated into this prospectus by reference. Our business involves significant risks. you should carefully consider the information under the heading "Risk factors" beginning on page 4.

ImmunoGen, Inc.

We are a leading developer of antibody-based cancer therapeutics. Our proprietary, tumor-activated prodrug, or TAP, technology combines extremely potent, small-molecule drugs with monoclonal antibodies that recognize and bind specifically to tumor cells. Our targeted delivery technology increases the potency of these cancer-specific antibodies, which allows our drugs to kill cancer cells with minimal harm to healthy tissue.

We believe that our TAP technology will enable us to become a leader in the development of innovative biopharmaceutical treatments for cancer. We plan to achieve this goal by carrying out a business model that leverages our proprietary methods of targeting cancer as well as our broad scientific capabilities and drug development expertise. We license our TAP technology to other companies for use with their antibodies. We also use our proprietary TAP technology in conjunction with our in-house antibody expertise to develop our own anti-cancer products. We currently have technology out-license agreements with Genentech, Inc., Millennium Pharmaceuticals, Inc., Abgenix, Inc. and Boehringer Ingelheim International GmbH that permit these companies to use our TAP technology with their antibodies to develop their own TAP products. We licensed certain rights to our two most advanced TAP products, cantuzumab mertansine (formerly referred to as huC242-DM1/SB408075) and huN901-DM1/BB-10901, to GlaxoSmithKline plc and British Biotech plc, respectively. Our technology out-license and product license agreements provide cash inflow to ImmunoGen through upfront and milestone payments, as well as royalties on any resulting product sales. These cash inflows partially finance the development of our internal products and the continued development of our TAP technology.

We are testing our two most advanced product candidates, cantuzumab mertansine and huN901-DM1/BB-10901, as single agents in Phase I studies with patients with colon, pancreatic, and non-small-cell lung cancer and in patients with small-cell lung cancer and certain tumors of neuroendocrine origin, respectively. Cantuzumab mertansine, which is currently partnered with GlaxoSmithKline, has been found to be well tolerated in two Phase I clinical trials and is currently being evaluated in a third Phase I clinical trial. Along with our partner, British Biotech, we are conducting two Phase I trials with our second product candidate, huN901-DM1/BB-10901, for the treatment of small-cell lung cancer at two clinical sites in the United States and two clinical sites in the United Kingdom. We retain worldwide manufacturing rights to huN901-DM1/BB-10901 and commercialization rights in North America and the rest of the world, excluding the European Union and Japan.

See "Risk Factors" below for a discussion of the status of our agreement with GlaxoSmithKline.

ImmunoGen was organized as a Massachusetts corporation in March 1981. Our principal executive offices are located at 128 Sidney Street, Cambridge, Massachusetts 02139, and our telephone number is (617) 995-2500. We maintain a web site at www.immunogen.com.

Risk factors

The risks and uncertainties described below are those that we currently believe may materially affect our company. Additional risks and uncertainties that we are unaware of or that we currently deem immaterial also may become important factors that affect our Company.

If our TAP technology does not produce safe, effective and commercially viable products, our business will be severely harmed.

Our TAP technology is a novel approach to the treatment of cancer. None of our TAP product candidates has obtained regulatory approval and all of them are in early stages of development. Our TAP product candidates may not prove to be safe, effective or commercially viable treatments for cancer and our TAP technology may not result in any meaningful benefits to our current or potential collaborative partners. Furthermore, we are aware of only one antibody-drug conjugate that has obtained FDA approval and is based on technology similar to our TAP technology. If our TAP technology fails to generate product candidates that are safe, effective and commercially viable treatments for cancer, and fails to obtain U.S. Food and Drug Administration, or FDA, approval, our business will be severely harmed.

Clinical trials for our product candidates will be lengthy and expensive and their outcome is uncertain.

Before obtaining regulatory approval for the commercial sale of any product candidates, we and our collaborative partners must demonstrate through preclinical testing and clinical trials that our product candidates are safe and effective for use in humans. Conducting clinical trials is a time consuming, expensive and uncertain process and may take years to complete. Our most advanced product candidates, cantuzumab mertansine and huN901-DM1/BB-10901, are only in the Phase I stage of clinical trials. Historically, the results from preclinical testing and early clinical trials have often not been predictive of results obtained in later clinical trials. Frequently, drugs that have shown promising results in preclinical or early clinical trials subsequently fail to establish sufficient safety and effectiveness data necessary to obtain regulatory approval. At any time during the clinical trials, we, our collaborative partners or the FDA might delay or halt any clinical trials for our product candidates for various reasons, including:

ineffectiveness of the product candidate;

discovery of unacceptable toxicities or side effects;

development of disease resistance or other physiological factors;

delays in patient enrollment; or

other reasons that are internal to the businesses of our collaborative partners, which reasons they may not share with us.

The results of the clinical trials may fail to demonstrate the safety or effectiveness of our product candidates to the extent necessary to obtain regulatory approval or that commercialization of our product candidates is worthwhile. Any failure or substantial delay in

successfully completing clinical trials and obtaining regulatory approval for our product candidates could severely harm our business.

If our collaborative partners fail to perform their obligations under our agreements, or determine not to continue with clinical trials for particular product candidates, our ability to develop and market potential products could be severely limited.

Our strategy for the development and commercialization of our product candidates depends, in large part, upon the formation of collaborative arrangements. Collaborations allow us to:

- generate cash flow and revenue;
- offset some of the costs associated with our internal research and development, preclinical testing, clinical trials and manufacturing;
- seek and obtain regulatory approvals;
- successfully commercialize existing and future product candidates; and
- develop antibodies for additional product candidates, and discover additional cell surface markers for antibody development.

If we fail to secure or maintain successful collaborative arrangements, our development and marketing activities may be delayed or scaled back. In addition, we may be unable to negotiate other collaborative arrangements or, if necessary, modify our existing arrangements on acceptable terms. We have entered into collaboration agreements with GlaxoSmithKline and British Biotech with respect to our two most advanced product candidates, cantuzumab mertansine and huN901-DM1/BB-10901, respectively. The development, regulatory approval and commercialization of our two clinical-stage product candidates depend primarily on the efforts of these collaborative partners. We have also entered into collaborations with Genentech, Abgenix, Millennium, and Boehringer Ingelheim. We cannot control the amount and timing of resources our partners may devote to our products. Our partners may separately pursue competing products, therapeutic approaches or technologies to develop treatments for the diseases targeted by us or our collaborative efforts. Even if our partners continue their contributions to the collaborative arrangements, they may nevertheless determine not to actively pursue the development or commercialization of any resulting products. Also, our partners may fail to perform their obligations under the collaboration agreements or may be slow in performing their obligations. Our partners can terminate our collaborative agreements under certain conditions. The decision to advance a product that is covered by a collaborative agreement through clinical trials and ultimately to commercialization is in the sole discretion of our collaborative partners. If any collaborative partner were to terminate or breach our agreement, or fail to complete its obligations to us in a timely manner, our anticipated revenue from the agreement and development and commercialization of our products could be severely limited. If we are not able to establish additional collaborations or any or all of our existing collaborations are terminated and we are not able to enter into alternative collaborations on acceptable terms, we may be required to undertake product development, manufacture and commercialization of our products ourselves, and we may not have the funds or capability to do this. If our collaborators fail to successfully develop and commercialize TAP products our business will be severely harmed.

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The outcome of our ongoing negotiations with GlaxoSmithKline relating to cantuzumab mertansine is uncertain and may ultimately be unfavorable to us.

In June 2002, GlaxoSmithKline informed us that they have elected not to advance cantuzumab mertansine into Phase II clinical development under the present terms of our license agreement with them. We expect to renegotiate the agreement with GlaxoSmithKline. However, renegotiation of the agreement will be time-consuming, and we may not be able to renegotiate the agreement on terms that are favorable to us. If we ultimately decide that entering into a renegotiated agreement with GlaxoSmithKline is not in our best interests, or we cannot reach satisfactory terms on a revised agreement, the rights to cantuzumab mertansine will be returned to us. This will mean that we will either proceed with clinical trials of cantuzumab mertansine on our own, which will be time-consuming and expensive, or find another collaborative partner that will undertake the clinical trials, which will require us to negotiate another collaborative agreement, possibly on terms that are less favorable to us than the existing GlaxoSmithKline agreement.

We depend on a small number of collaborators for a substantial portion of our revenue. The loss of, or a material reduction in activity by, any one of these collaborators could result in a substantial decline in revenue.

We have and will continue to have collaborations with a limited number of companies. As a result, our financial performance depends on the efforts and overall success of these companies. The failure of any one of our collaborative partners to perform its obligations under its agreement with us, including making any royalty, milestone or other payments to us, could have a material adverse effect on our financial condition. Further, any material reduction by any one of our collaborative partners in their level of commitment of resources, funding, personnel, and interest in continued development under its agreement with us could have a material adverse effect on our financial condition. Also, if consolidation trends in the healthcare industry continue, the number of our potential collaborators could decrease, which could have an adverse impact on our development efforts.

We have a history of operating losses and expect to incur significant additional operating losses.

We have generated operating losses since our inception. As of June 30, 2002, we had an accumulated deficit of \$183.9 million. We may never be profitable. We expect to incur substantial additional operating expenses over the next several years as our research, development, preclinical testing, clinical trial and collaborator support activities increase. We intend to continue to invest significantly in our products and bring more of the product development process in-house, which will be a time-consuming and expensive process. Further, we expect to invest significant resources supporting our existing collaborators as they work to develop, test and commercialize TAP products, and we or our collaborators may encounter technological or regulatory difficulties as part of this development and commercialization process that we cannot overcome or remedy. We may also incur substantial marketing and other costs in the future if we decide to establish marketing and sales capabilities to commercialize our products. None of our product candidates has generated any commercial revenue and our only revenues to date have been primarily from upfront and milestone payments and clinical materials reimbursement from our collaborative partners. We do not

expect to generate revenues from the commercial sale of our products in the foreseeable future, and we may never generate revenues from the commercial sale of products. Even if we do successfully develop products that can be marketed and sold commercially, we will need to generate significant revenues from those products to achieve and maintain profitability. Even if we do become profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis.

We are subject to extensive government regulations and we may not be able to obtain regulatory approvals.

We or our collaborative partners may not receive the regulatory approvals necessary to commercialize our product candidates, which could cause our business to be severely harmed. Our product candidates are subject to extensive and rigorous government regulation. The FDA regulates, among other things, the development, testing, manufacture, safety, record-keeping, labeling, storage, approval, advertising, promotion, sale and distribution of pharmaceutical products. If our potential products are marketed abroad, they will also be subject to extensive regulation by foreign governments. None of our product candidates has been approved for sale in the United States or any foreign market. The regulatory review and approval process, which includes preclinical studies and clinical trials of each product candidate, is lengthy, complex, expensive and uncertain. Securing FDA approval requires the submission of extensive preclinical and clinical data and supporting information to the FDA for each indication to establish the product candidate's safety and efficacy. Data obtained from preclinical and clinical trials are susceptible to varying interpretation, which may delay, limit or prevent regulatory approval. The approval process may take many years to complete and may involve ongoing requirements for post-marketing studies. In light of the limited regulatory history of monoclonal antibody-based therapeutics, regulatory approvals for our products may not be obtained without lengthy delays, if at all. Any FDA or other regulatory approvals of our product candidates, once obtained, may be withdrawn. The effect of government regulation may be to:

- delay marketing of potential products for a considerable period of time;
- limit the indicated uses for which potential products may be marketed;
- impose costly requirements on our activities; and
- provide competitive advantage to other pharmaceutical and biotechnology companies.

We may encounter delays or rejections in the regulatory approval process because of additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. Failure to comply with applicable FDA or other applicable regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, total or partial suspension of production or injunction, as well as other regulatory action against our product candidates or us. Outside the United States, our ability to market a product is contingent upon receiving clearances from the appropriate regulatory authorities. This foreign regulatory approval process includes all of the risks associated with the FDA approval process. In addition, we are, or may become, subject to various federal, state and local laws, regulations and recommendations

relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals and the use and disposal of hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research work. If we fail to comply with the laws and regulations pertaining to our business, we may be subject to sanctions, including the temporary or permanent suspension of operations, product recalls, marketing restrictions and civil and criminal penalties.

We may be unable to establish the manufacturing capabilities necessary to develop and commercialize our potential products.

Currently, we only have one pilot scale manufacturing facility for the manufacture of products necessary for clinical testing. We do not have sufficient manufacturing capacity to manufacture all of our product candidates in quantities necessary for commercial sale. In addition, our manufacturing capacity may be inadequate to complete all clinical trials contemplated by us over time. We intend to rely in part on third-party contract manufacturers to produce sufficiently large quantities of drug materials that are and will be needed for clinical trials and commercialization of our potential products. Third-party manufacturers may not be able to meet our needs with respect to timing, quantity or quality of materials. If we are unable to contract for a sufficient supply of needed materials on acceptable terms, or if we should encounter delays or difficulties in our relationships with manufacturers, our clinical trials may be delayed, thereby delaying the submission of product candidates for regulatory approval and the market introduction and subsequent commercialization of our potential products. Any such delays may lower our revenues and potential profitability.

We may develop our manufacturing capacity in part by expanding our current facilities or building new facilities. Either of these activities would require substantial additional funds and we would need to hire and train significant numbers of employees to staff these facilities. We may not be able to develop manufacturing facilities that are sufficient to produce drug materials for clinical trials or commercial use. We and any third-party manufacturers that we may use must continually adhere to Current Good Manufacturing Practices regulations enforced by the FDA through its facilities inspection program. If our facilities or the facilities of third-party manufacturers cannot pass a pre-approval plant inspection, the FDA approval of our product candidates will not be granted. In complying with these regulations and foreign regulatory requirements, we and any of our third-party manufacturers will be obligated to expend time, money and effort on production, record-keeping and quality control to assure that our potential products meet applicable specifications and other requirements. If we or any third-party manufacturer with whom we may contract fail to maintain regulatory compliance, we or the third party may be subject to fines and/or manufacturing operations may be suspended.

We have only one in-house pilot manufacturing facility, and any prolonged and significant disruption at that facility could hurt our ability to manufacture products for clinical testing.

Currently, we are contractually obligated to manufacture Phase I and non-pivotal Phase II clinical products for certain of our collaborators. We manufacture this material in a pilot scale manufacturing facility. We only have one such manufacturing facility in which we can manufacture clinical products. Our current manufacturing facility contains highly specialized equipment and utilizes complicated production processes developed over a number of years

that would be difficult, time-consuming and costly to duplicate. Any prolonged disruption in the operations of our manufacturing facility would have a significant negative impact on our ability to manufacture products for clinical testing on our own and would cause us to seek additional third-party manufacturing contracts, thereby increasing our development costs. Even though we carry manufacturing interruption insurance policies, we may suffer losses as a result of business interruptions that exceed the coverage available under our insurance policies. Certain events, such as natural disasters, fire, sabotage or business accidents, which could impact our current or future facilities, could have a significant negative impact on our operations by disrupting our product development efforts until such time as we are able to repair our facility or put in place third-party contract manufacturers to assume this manufacturing role.

Any inability to license from third parties their proprietary technologies or processes which we use in connection with the development and manufacture of our TAP product candidates may impair our business.

Other companies, universities and research institutions have or may obtain patents that could limit our ability to use, manufacture, market or sell our product candidates or impair our competitive position. As a result, we would have to obtain licenses from other parties before we could continue using, manufacturing, marketing or selling our potential products. Any necessary licenses may not be available on commercially acceptable terms, if at all. If we do not obtain required licenses, we may not be able to market our potential products at all or we may encounter significant delays in product development while we redesign products or methods that could infringe on the patents held by others.

We rely on single source suppliers to manufacture the primary component for our small molecule effector drug and DM1 itself. Any problems experienced by either supplier could negatively affect our operations.

We rely on third-party suppliers for some of the materials used in the manufacturing of our TAP product candidates and small molecule effector drugs. Our most advanced small molecule effector drug is DM1. DM1 is the cytotoxic agent used in all of our current TAP product candidates and the subject of most of our collaborations. One of the primary components required to manufacture DM1 is its precursor, ansamitocin P3. Currently, only one vendor manufactures and is able to supply us with this material. Any problems experienced by this vendor could result in a delay or interruption in the supply of ansamitocin P3 to us until this vendor cures the problem or until we locate an alternative source of supply. Any delay or interruption in our supply of ansamitocin P3 would likely lead to a delay or interruption in our manufacturing operations and preclinical and clinical trials of our product candidates, which could negatively affect our business. We also have an agreement with only one vendor to convert ansamitocin P3 to DM1. Any problems experienced by this vendor could result in a delay or interruption in the supply of DM1 to us until this vendor cures the problem or until we locate an alternative source of supply. Any delay or interruption in our supply of DM1 would likely lead to a delay or interruption in our manufacturing operations and preclinical and clinical trials of our product candidates or our collaborators' product candidates, which could negatively affect our business.

We may be unable to establish sales and marketing capabilities necessary to successfully commercialize our potential products.

We currently have no direct sales or marketing capabilities. We anticipate relying on third parties to market and sell most of our primary product candidates. If we decide to market our potential products through a direct sales force, we would need to either hire a sales force with expertise in pharmaceutical sales or contract with a third party to provide a sales force to meet our needs. We may be unable to establish marketing, sales and distribution capabilities necessary to commercialize and gain market acceptance for our potential products and be competitive. In addition, co-promotion or other marketing arrangements with third parties to commercialize potential products could significantly limit the revenues we derive from these potential products, and these third parties may fail to commercialize our potential products successfully.

If our product candidates do not gain market acceptance, our business will suffer.

Even if clinical trials demonstrate the safety and efficacy of our product candidates and the necessary regulatory approvals are obtained, our product candidates may not gain market acceptance among physicians, patients, healthcare payors and the medical community. The degree of market acceptance of any product candidates that we develop will depend on a number of factors, including:

the degree of clinical efficacy and safety;

cost-effectiveness of our product candidates;

their advantage over alternative treatment methods;

reimbursement policies of government and third-party payors; and

the quality of our or our collaborative partners' marketing and distribution capabilities for our product candidates.

Physicians will not recommend therapies using any of our future products until such time as clinical data or other factors demonstrate the safety and efficacy of those products as compared to conventional drug and other treatments. Even if the clinical safety and efficacy of therapies using our products is established, physicians may elect not to recommend the therapies for any number of other reasons, including whether the mode of administration of our products is effective for certain conditions, and whether the physicians are already using competing products that satisfy their treatment objectives. Physicians, patients, third-party payors and the medical community may not accept and use any product candidates that we, or our collaborative partners, develop. If our products do not achieve significant market acceptance, we will not be able to recover the significant investment we have made in developing such products and our business would be severely harmed.

We may be unable to compete successfully.

The markets in which we compete are well established and intensely competitive. We may be unable to compete successfully against our current and future competitors. Our failure to compete successfully may result in pricing reductions, reduced gross margins and failure to

achieve market acceptance for our potential products. Our competitors include pharmaceutical companies, biotechnology companies, chemical companies, academic and research institutions and government agencies. Many of these organizations have substantially more experience and more capital, research and development, regulatory, manufacturing, sales, marketing, human and other resources than we do. As a result, they may:

develop products that are safer or more effective than our product candidates;

obtain FDA and other regulatory approvals or reach the market with their products more rapidly than we can, reducing the potential sales of our product candidates;

devote greater resources to market or sell their products;

adapt more quickly to new technologies and scientific advances;

initiate or withstand substantial price competition more successfully than we can;

have greater success in recruiting skilled scientific workers from the limited pool of available talent;

more effectively negotiate third-party licensing and collaboration arrangements; and

take advantage of acquisition or other opportunities more readily than we can.

A number of pharmaceutical and biotechnology companies are currently developing products targeting the same types of cancer that we target, and some of our competitors' products have entered clinical trials or already are commercially available. In addition, our product candidates, if approved and commercialized, will compete against well-established, existing, therapeutic products that are currently reimbursed by government health administration authorities, private health insurers and health maintenance organizations. We face and will continue to face intense competition from other companies for collaborative arrangements with pharmaceutical and biotechnology companies, for relationships with academic and research institutions, and for licenses to proprietary technology. In addition, we anticipate that we will face increased competition in the future as new companies enter our markets and as scientific developments surrounding prodrug and antibody-based therapeutics for cancer continue to accelerate. While we will seek to expand our technological capabilities to remain competitive, research and development by others may render our technology or product candidates obsolete or noncompetitive or result in treatments or cures superior to any therapy developed by us.

If we are unable to protect our intellectual property rights adequately, the value of our TAP technology and our product candidates could be diminished.

Our success depends in part on obtaining, maintaining and enforcing our patents and other proprietary rights and our ability to avoid infringing the proprietary rights of others. Patent law relating to the scope of claims in the biotechnology field in which we operate is still evolving, is surrounded by a great deal of uncertainty and involves complex legal, scientific and factual questions. To date, no consistent policy has emerged regarding the breadth of claims allowed in biotechnology patents. Accordingly, our pending patent applications may not result in issued patents. Although we own several patents, the issuance of a patent is not conclusive as to its validity or enforceability. Through litigation, a third party may challenge the validity or

enforceability of a patent after its issuance. Also, patents and applications owned or licensed by us may become the subject of interference proceedings in the United States Patent and Trademark Office to determine priority of invention that could result in substantial cost to us. An adverse decision in an interference proceeding may result in our loss of rights under a patent or patent application. It is unclear how much protection, if any, will be given to our patents if we attempt to enforce them and they are challenged in court or in other proceedings. A competitor may successfully challenge our patents or, a challenge could result in limitations of the patents' coverage. In addition, the cost of litigation or interference proceedings to uphold the validity of patents can be substantial. If we are unsuccessful in these proceedings, third parties may be able to use our patented technology without paying us licensing fees or royalties. Moreover, competitors may infringe our patents or successfully avoid them through design innovation. To prevent infringement or unauthorized use, we may need to file infringement claims, which are expensive and time-consuming. In an infringement proceeding a court may decide that a patent of ours is not valid. Even if the validity of our patents were upheld, a court may refuse to stop the other party from using the technology at issue on the ground that its activities are not covered by our patents. Policing unauthorized use of our intellectual property is difficult, and we may not be able to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States.

In addition to our patent rights, we also rely on unpatented technology, trade secrets and confidential information. Others may independently develop substantially equivalent information and techniques or otherwise gain access to or disclose our technology. We may not be able to effectively protect our rights in unpatented technology, trade secrets and confidential information. We require each of our employees, consultants and corporate partners to execute a confidentiality agreement at the commencement of an employment, consulting or collaborative relationship with us. However, these agreements may not provide effective protection of our information or, in the event of unauthorized use or disclosure, they may not provide adequate remedies.

If we are forced to litigate or undertake other proceedings in order to enforce our intellectual property rights, we may be subject to substantial costs and liability or be prohibited from commercializing our potential products.

Patent litigation is very common in the biotechnology and pharmaceutical industries. Third parties may assert patent or other intellectual property infringement claims against us with respect to our technologies, products or other matters. Any claims that might be brought against us relating to infringement of patents may cause us to incur significant expenses and, if successfully asserted against us, may cause us to pay substantial damages and limit our ability to use the intellectual property subject to these claims. Even if we were to prevail, any litigation would be costly and time-consuming and could divert the attention of our management and key personnel from our business operations. Furthermore, as a result of a patent infringement suit, we may be forced to stop or delay developing, manufacturing or selling potential products that incorporate the challenged intellectual property unless we enter into royalty or license agreements. Furthermore, because some patent applications in the United States are maintained in secrecy until a patent issues, others may have filed patent applications for technology covered by our pending applications. There are third-party patents, patent applications and other intellectual property relevant to our potential products that may

block or compete with our products or processes. In addition, we sometimes undertake research and development with respect to potential products even when we are aware of third-party patents that may be relevant to our potential products, on the basis that such patents may be challenged or licensed by us. If our subsequent challenge to such patents were not to prevail, we may not be able to commercialize our potential products after having already incurred significant expenditures unless we are able to license the intellectual property on commercially reasonable terms. We may not be able to obtain royalty or license agreements on terms acceptable to us, if at all. Even if we were able to obtain licenses to such technology, some licenses may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. Ultimately, we may be unable to commercialize some of our potential products or may have to cease some of our business operations, which could severely harm our business.

We use hazardous materials in our business, and any claims relating to improper handling, storage or disposal of these materials could harm our business.

Our research and development activities involve the controlled use of hazardous materials, chemicals, biological materials and radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these materials and certain waste products. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards prescribed by applicable laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of such an accident, we could be held liable for any resulting damages, and any liability could exceed our resources. We may be required to incur significant costs to comply with these laws in the future. Failure to comply with these laws could result in fines and the revocation of permits, which could prevent us from conducting our business.

We face product liability risks and may not be able to obtain adequate insurance.

The use of our product candidates during testing or after approval entails an inherent risk of adverse effects, which could expose us to product liability claims. Regardless of their merit or eventual outcome, product liability claims may result in:

- decreased demand for our product;
- injury to our reputation and significant media attention;
- withdrawal of clinical trial volunteers;
- costs of litigation;
- distraction of management; and
- substantial monetary awards to plaintiffs.

We may not have sufficient resources to satisfy any liability resulting from these claims. We currently have \$5.0 million of product liability insurance for products, which are in clinical testing. This coverage may not be adequate in scope to protect us in the event of a successful product liability claim. Further, we may not be able to maintain our current insurance or obtain

general product liability insurance on reasonable terms and at an acceptable cost if we or our collaborative partners begin commercial production of our proposed product candidates. This insurance, even if we can obtain and maintain it, may not be sufficient to provide us with adequate coverage against potential liabilities.

We depend on our key personnel and we must continue to attract and retain key employees and consultants.

We depend on our key scientific and management personnel. Our ability to pursue the development of our current and future product candidates depends largely on retaining the services of our existing personnel and hiring additional qualified scientific personnel to perform research and development. We will also need to hire personnel with expertise in clinical testing, government regulation, manufacturing, business development, marketing and finance. Attracting and retaining qualified personnel will be critical to our success. We may not be able to attract and retain personnel on acceptable terms given the competition for such personnel among biotechnology, pharmaceutical and healthcare companies, universities and non-profit research institutions. Failure to retain our existing key management and scientific personnel or to attract additional highly qualified personnel could delay the development of our product candidates and harm our business.

If we are unable to obtain additional funding when needed, we may have to delay or scale back some of our programs or grant rights to third parties to develop and market our products.

We will continue to expend substantial resources developing new and existing product candidates, including costs associated with research and development, acquiring new technologies, conducting preclinical and clinical trials, obtaining regulatory approvals and manufacturing products as well as supporting our collaborators in the development of their TAP products. We believe that our current working capital and future payments, if any, from our collaboration arrangements will be sufficient to meet our operating and capital requirements for at least the next three years. However, we may need additional financing sooner due to a number of factors including:

if either we or any of our collaborators incur higher than expected costs or experience slower than expected progress in developing product candidates and obtaining regulatory approvals;

lower revenues than expected under our collaboration agreements; or

acquisition of technologies and other business opportunities that require financial commitments.

Additional funding may not be available to us on favorable terms, or at all. We may raise additional funds through public or private financings, collaborative arrangements or other arrangements. Debt financing, if available, may involve covenants that could restrict our business activities. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, scale back or eliminate expenditures for some of our development programs or grant rights to develop and market product candidates that we

would otherwise prefer to internally develop and market. If we are required to grant such rights, the ultimate value of these product candidates to us may be reduced.

Fluctuations in our quarterly revenue and operating results may cause our stock price to decline.

Our operating results have fluctuated in the past and are likely to continue to do so in the future. Our revenue is unpredictable and may fluctuate due to the timing of non-recurring licensing fees, decisions of our collaborative partners with respect to our agreements with them, reimbursement for manufacturing services, the achievement of milestones and our receipt of the related milestone payments under new and existing licensing and collaboration agreements. Revenue historically recognized under our prior collaboration agreements may not be an indicator of revenue from any future collaborations. In addition, our expenses are unpredictable and may fluctuate from quarter-to-quarter due to the timing of expenses, which may include obligations to manufacture or supply product or payments owed by us under licensing or collaboration agreements. It is possible that in the future, our quarterly operating results will not meet the expectations of securities analysts or investors, causing the market price of our common stock to decline. We believe that quarter-to-quarter comparisons of our operating results are not a good indicator of our future performance and should not be relied upon to predict the future performance of our stock price.

We do not intend to pay cash dividends on our common stock.

We have not paid cash dividends since our inception and do not intend to pay cash dividends in the foreseeable future. Therefore, shareholders will have to rely on appreciation in our stock price in order to achieve a gain on an investment.

Forward-looking statements

This prospectus, including the sections entitled "Prospectus Summary" and "Risk Factors," contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements relate to future events or our future financial and operating performance and involve known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from that expressed or implied by these forward-looking statements. These risks and other factors include, among other things, those listed under "Risk Factors" and elsewhere in this prospectus. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue," "our future success depends," "seek to continue" or the negative of these terms or other comparable terminology. Actual events or results may differ materially. In evaluating these statements, you should specifically consider various factors, including the risks outlined under "Risk Factors." These factors may cause our actual results to differ materially from any forward-looking statement.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of these statements. We do not intend to update any of the forward-looking statements after the date of this prospectus to conform these statements to actual results except as required by law.

Use of proceeds

We will not receive any of the proceeds from the sale of our Common Stock offered by this prospectus by the Selling Stockholder.

Selling stockholder

We issued the shares of Common Stock to the Selling Stockholder upon its exercise, on July 29, 2002, of warrants for shares of our Common Stock. The warrants were issued to a predecessor of the Selling Stockholder in connection with a collaboration arrangement among that predecessor, ImmunoGen, Inc. and ImmunoGen, Inc.'s 97%-owned subsidiary, Apoptosis Technology, Inc., entered into in July of 1997. The dollar amount of the warrants equaled \$11.125 million and the exercise price equaled the average closing price of our Common Stock for the five trading days prior to the exercise date, or \$2.716 per share. The warrants became exercisable on July 31, 2000 and were to expire on July 31, 2002. The Selling Stockholder has demand registration rights as to the shares of Common Stock underlying the warrants pursuant to a Registration Rights Agreement dated July 31, 1997, to which it is a successor in interest.

The following table shows information, as of September 24, 2002, with respect to the Selling Stockholder, the amount of our Common Stock it beneficially owns and the number of shares that may be offered under this prospectus. The information is based solely on information provided by or on behalf of the Selling Stockholder.

The Selling Stockholder may offer all, some or none of the Common Stock. Thus, we cannot estimate the amount of the Common Stock that will be held by the Selling Stockholder upon termination of any sale. For purposes of this table, however, we have assumed that, after completion of the offering, none of the shares of Common Stock covered by this prospectus will be held by the Selling Stockholder.

| Name of Selling Stockholder | Number Of Shares Owned Prior To The Offering | Maximum Number Of Shares Offered | Shares Owned After the Offering(1) | |
|-----------------------------|--|-------------------------------------|--|---------|
| | | | Number | Percent |
| Shire BioChem Inc. | 4,096,098 | 4,096,098 | 0 | 0 |

(1) Number of shares and percentage owned after the completion of the offering assumes that all of the shares held by the Selling Stockholder and being offered under this prospectus are sold, that the shares are sold to unaffiliated third parties and that the Selling Stockholder acquires no additional shares of Common Stock before completion of this offering.

Plan of distribution

We are registering the shares of Common Stock on behalf of the Selling Stockholder, including its pledgees, donees, transferees or other successors in interest. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market prices, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected at various times in one or more of the following transactions (which may include block transactions), or in other kinds of transactions:

transactions on the Nasdaq National Market or on any national securities exchange or U.S. inter-dealer system of a registered national securities association on which our Common Stock may be listed or quoted at the time of sale;

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in the over-the-counter market;

in private transactions and transactions otherwise than on these exchanges or systems or in the over-the-counter market;

by pledge to secure debt and other obligations;

through the writing of options, whether the options are listed on an options exchange or otherwise;

in connection with the writing of non-traded and exchange-traded call options, in hedge transactions and in settlement of other transactions in standardized or over-the-counter options;

through a combination of any of the above transactions; or

any other method permitted by law.

The Selling Stockholder and its successors, including their transferees, pledgees or donees or their successors, may sell the Common Stock directly to purchasers or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the Selling Stockholder or the purchasers. These discounts, concessions or commissions as to any particular underwriter, broker-dealer or agent may be in excess of those customary in the types of transactions involved.

In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under that rule rather than pursuant to this prospectus.

From time to time the Selling Stockholder may engage in puts and calls and other transactions in securities of the ImmunoGen, Inc. or derivatives thereof, and may sell and deliver the shares in connection therewith. From time to time the Selling Stockholder may pledge its shares pursuant to the margin provisions of its customer agreement with its broker, if any. Upon a default by the Selling Stockholder, the broker may offer and sell the pledged shares of Common Stock from time to time.

The Selling Stockholder and any brokers participating in such sales may be deemed to be underwriters within the meaning of the Securities Act. There can be no assurance that the Selling Stockholder will sell any or all of the shares of Common Stock offered hereunder.

All proceeds from any sales will be the property of the Selling Stockholder, who will bear the expense of the underwriting discounts and selling commissions, if any, and its own legal fees.

Legal matters

The validity of the shares of Common Stock offered hereby is being passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts.

Experts

The consolidated financial statements of ImmunoGen, Inc. at June 30, 2002 and for the year then ended, appearing in our Annual Report (Form 10-K), have been audited by Ernst & Young LLP, independent auditors, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements as of June 30, 2001 and for each of the two years in the period ended June 30, 2001 incorporated in this Registration Statement on Form S-3 by reference to the Annual Report on Form 10-K for the year ended June 30, 2002 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

Incorporation of certain information by reference

The Securities and Exchange Commission allows us to "incorporate by reference" the information we file with them, which means that we can disclose important information to you by referring you to those documents that we have previously filed with the Commission or documents that we will file with the Commission in the future. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the Commission will automatically update and supersede this information. We incorporate by reference the documents listed below, and any future filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, until the termination of this offering. The documents we incorporate by reference are:

- (a) our Annual Report on Form 10-K for the fiscal year ended June 30, 2002 filed with the Commission on September 20, 2002;
- (b) our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2002 and our amended Quarterly Report on Form 10-Q/A for the fiscal quarter ended December 31, 2001;
- (c) our Current Reports on Form 8-K filed with the Commission on October 15, 2002, November 12, 2002, November 21, 2002 and January 14, 2003;
- (d) our proxy materials on Schedule 14A as filed with the Commission on October 11, 2002; and
- (e) the description of our capital stock contained in our registration statement on Form 8-A under the Securities Exchange Act of 1934 (File No. 0-17999), including amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address and number: ImmunoGen, Inc., Attention: Investor Relations, 128 Sidney Street, Cambridge, Massachusetts 02139; telephone number (617) 995-2500.

To the extent that any statements contained in a document incorporated by reference are modified or superseded by any statements contained in this prospectus, such statements shall not be deemed incorporated in this prospectus except as so modified or superseded.

All documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act and prior to the termination of this offering are incorporated by reference and will become a part of this prospectus from the date such documents are filed. Any statement contained in this prospectus or in a document incorporated by reference is modified or superseded for purposes of this prospectus to the extent that a statement contained in any subsequently filed document modifies or supersedes such statement.

Where you can find additional information

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any materials we file with the Commission at the Commission's public reference room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for more information on its public reference rooms. The Commission also maintains an Internet Website at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the Commission, including the ImmunoGen, Inc.

Our Common Stock is quoted on the Nasdaq National Market. You may inspect reports and other information concerning us at the offices of the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C.

We have filed with the Commission a registration statement (which contains this prospectus) on Form S-3 under the Securities Act of 1933. The registration statement relates to the Common Stock offered by the Selling Stockholder. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules to the registration statement. Please refer to the registration statement and its exhibits and schedules for further information with respect to us and our Common Stock. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete and, in each instance, we refer you to the copy of that contract or document filed as an exhibit to the registration statement. You may read and obtain a copy of the registration statement and its exhibits and schedules from the Commission, as described above.

4,030,000 shares

Common stock

Prospectus Supplement

May 27, 2004

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