UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ImmunoGen, Inc.

(Exact name of registrant as specified in its charter)

Massachusetts

(State or other jurisdiction of incorporation or organization)

04-2726691

(I.R.S. Employer Identification No.)

128 Sidney Street Cambridge, MA 02139 (617) 995-2500

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Mitchel Sayare
President and Chief Executive Officer
ImmunoGen, Inc.
128 Sidney Street
Cambridge, MA 02139
(617) 995-2500

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Jonathan L. Kravetz, Esq. Daniel T. Kajunski, Esq. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. One Financial Center Boston, MA 02111 (617) 542-6000

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. o

CALCULATION OF REGISTRATION FEE

| | | Proposed Maximum | Proposed Maximum | |
|---|----------------------------|-----------------------------|-----------------------------|-----------------------------------|
| Title of Each Class of Securities to be Registered | Amount to Be Registered | Offering Price Per Share | Aggregate Offering Price | Amount of Registration Fee (1) |
| Common Stock, \$.01 par value | (2) | (3) | \$ 75,000,000 | \$ 2,302.50 |

- (1) Calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended, based on the proposed maximum aggregate offering price.
- 2) There are being registered hereunder such indeterminate number of shares of common stock as shall have an aggregate initial offering price not to exceed \$75,000,000. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (3) The proposed maximum aggregate offering price per share of common stock will be determined from time to time by the registrant in connection with the issuance by the registrant of the common stock registered hereunder.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, dated July 11, 2007

PROSPECTUS

\$75,000,000

IMMUNOGEN, INC.

COMMON STOCK

| This prospectus will allow us to issue up to \$75,000,000 of our common stock from time to time at prices and on terms to be | e determined at or prior |
|---|--------------------------|
| to the time of the offering. We will provide you with specific terms of any offering in one or more supplements to this prospectus. Y | You should read this |
| document and any prospectus supplement carefully before you invest. | |
| | |

Our common stock is listed on the Nasdaq Global Market under the symbol "IMGN." On July 10, 2007, the last reported sale price of our common stock was \$5.72 per share. Prospective purchasers of common stock are urged to obtain current information as to the market prices of our common stock.

Investing in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks that we have described on page 3 of this prospectus under the caption "Risk Factors." We may include specific risk factors in supplements to this prospectus under the caption "Risk Factors." This prospectus may not be used to offer or sell our common stock unless accompanied by a prospectus supplement.

Our common stock may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any underwriters are involved in the sale of our common stock with respect to which this prospectus is being delivered, the names of such underwriters and any applicable commissions or discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such common stock and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

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

The date of this prospectus is , 2007.

TABLE OF CONTENTS

| | Page_ |
|---|-------|
| ABOUT THIS PROSPECTUS | 1 |
| <u>IMMUNOGEN, INC.</u> | 1 |
| RISK FACTORS | 3 |
| SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS | 3 |
| <u>USE OF PROCEEDS</u> | 4 |
| <u>PLAN OF DISTRIBUTION</u> | 4 |
| <u>LEGAL MATTERS</u> | 5 |
| <u>EXPERTS</u> | 5 |
| WHERE YOU CAN FIND MORE INFORMATION | 6 |
| INCORPORATION OF DOCUMENTS BY REFERENCE | 6 |
| | |

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may sell shares of our common stock, with a total value of up to \$75,000,000, in one or more offerings. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering.

This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained or incorporated by reference in this prospectus. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness. This prospectus, together with the applicable prospectus supplements and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. You should carefully read this prospectus, the applicable prospectus supplement, the information and documents incorporated herein by reference and the additional information under the heading "Where You Can Find More Information" before making an investment decision.

You should rely only on the information we have provided or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information we have incorporated herein by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

This prospectus may not be used to consummate sales of common stock, unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

Unless the context otherwise requires, "ImmunoGen," "the Company," "we," "us," "our" and similar names refer to ImmunoGen, Inc. and our subsidiaries.

IMMUNOGEN, INC.

We develop novel, targeted therapeutics for the treatment of cancer using our expertise in cancer biology, monoclonal antibodies ("antibodies") and small molecule cell-killing, or cytotoxic, agents. Our Tumor-Activated Prodrug, or TAP, technology uses antibodies to deliver a potent cytotoxic agent specifically to cancer cells. Our TAP technology is designed to enable the creation of highly effective, well-tolerated anticancer products.

We believe that our TAP technology and our expertise in antibodies will enable us to become a leader in the application of antibodies for the treatment of cancer. We plan to achieve this goal through the development of our own anticancer products and through outlicenses of our TAP technology to other companies. We currently have two TAP product candidates for which we own the rights to develop and commercialize: huN901-DM1 and huC242-DM4. HuN901-DM1 targets cancers that express the CD56 antigen, which include small-cell lung cancer, other cancers of neuroendocrine origin, and many cases of multiple myeloma as well as other hematological malignancies. This compound is in Phase I clinical testing for multiple myeloma and PhaseI/II clinical testing for small-cell lung cancer and other CD56 positive solid tumors. HuC242-DM4 targets cancers that express the CanAg antigen, which include gastric, colorectal, pancreatic, and other gastrointestinal cancers as well as many non-small cell lung cancers. This compound is being evaluated in a Phase I safety trial and we expect to initiate a Phase II clinical trial of this compound for the treatment of gastric cancer. Our outlicenses are designed to expand the number of anticancer therapeutics developed that can provide us a financial return by enabling the creation of TAP compounds with antibodies proprietary to other companies and therefore not available for our own product programs. Currently, two TAP compounds from these collaborations, AVE9633 and trastuzumab-DM1, are in clinical trials. AVE9633 is in Phase I clinical testing by sanofi-aventis for the treatment of acute myeloid leukemia and trastuzumab-DM1 is in Phase I clinical testing by Genentech for the treatment of HER2-expressing metastatic breast cancer. Genentech has indicated that they intend to initiate a Phase II clinical trial with this compound. A third collaborator compound, AVE 1642, is a naked antibody in Phase I clinical testing by sanofiaventis. This antibody targets the insulin-like growth factor 1 receptor or IGF-1R, which is an important survival pathway for many cancer-cell types. Our collaborative partners include: Amgen Inc. (formerly Abgenix, Inc.); Biogen Idec, Inc.; Biotest AG; Centocor, Inc. (a wholly owned subsidiary of Johnson & Johnson); Genentech, Inc.; and the sanofi-aventis Group. We also have a broader collaboration with sanofi-aventis.

1

We were organized as a Massachusetts corporation in March 1981. Our principal 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, where certain information about us is available. Please note that the information contained on the website is not a part of this document.

ImmunoGen is a trademark of ImmunoGen, Inc. Each of the other trademarks, trade names or service marks appearing in this prospectus belongs to its respective holder.

Our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and all amendments to such reports are made available free of charge through the Investor Information section of our website as soon as reasonably practicable after they have been filed or furnished with the SEC. We have adopted a Code of Corporate Conduct that applies to all our directors, officers and employees and a Code of Ethics that applies to our senior officers and financial personnel. Our Code of Corporate Conduct and Senior Officer and Financial Personnel Code of Ethics are available free of charge through the Investor Information section of our website.

RISK FACTORS

Investing in our common stock involves risk. The prospectus supplement applicable to each offering of our common stock will contain a discussion of the risks applicable to an investment in us. Prior to making a decision about investing in our common stock, you should carefully consider the specific factors discussed under the heading "Risk Factors" in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under the heading "Risk Factors" included in our most recent annual report on Form 10-K, which is on file with the SEC and is incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated herein by reference contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other important factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- successfully finding and managing the relationships with collaborative partners;
- the uncertainty as to whether our TAP compounds or those of our collaborators will succeed in entering human clinical trials and uncertainty as to the results of such trials;
- the risk that we and/or our collaborators may not be able to obtain regulatory approvals necessary to commercialize product candidates;
- the potential development by competitors of competing products and technologies;
- uncertainty whether our TAP technology will produce safe, effective and commercially viable products;
- · our ability to successfully protect our intellectual property;
- our reliance on third-party manufacturers to achieve supplies of our cell-killing agents;
- the risk that we may be unable to establish the manufacturing capabilities necessary to develop and commercialize our potential products;
- the adequacy of our liquidity and capital resources and our intended use of the proceeds of this offering, if any;
- governmental regulation of our activities, facilities, products and personnel;
- the dependence on key personnel;
- · uncertainties as to the extent of reimbursement for the costs of our potential products and related treatments by government and private health insurers and other organizations;
- the potential adverse impact of government-directed health care reform;
- · the risk of product liability claims; and
- economic conditions, both generally and those specifically related to the biotechnology industry.

In some cases, you can identify forward-looking statements by terms such as "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "would" and similar expressions intended to identify forward-looking statements. Forward-looking statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Because of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus may not transpire.

Given these uncertainties, you should not place undue reliance on these forward-looking statements. You should read this document, any supplements to this document and the documents that we reference in this prospectus with the understanding that our actual future results may be materially different from what we expect. Except as required by law, we do not undertake any obligation to update or revise any forward-looking statements contained in this prospectus and any supplements to this prospectus, whether as a result of new information, future events or otherwise.

3

USE OF PROCEEDS

We cannot assure you that we will receive any proceeds in connection with shares of common stock offered pursuant to this prospectus and the prospectus supplement applicable to a particular offering. Unless otherwise indicated in the applicable prospectus supplement, we intend to use any net proceeds from the sale of our common stock for our operations and for other general corporate purposes, including, but not limited to, working capital, development of our clinical and preclinical product candidates, intellectual property protection and enforcement, capital expenditures, investments and acquisitions. Pending use of the net proceeds as described above, we intend to invest the net proceeds in accordance with our investment policy guidelines,

which currently provide for investment of funds in cash equivalents, short-term high-quality highly liquid investment funds, United States government obligations, high grade and corporate notes and commercial paper.

PLAN OF DISTRIBUTION

We may offer the common stock from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the common stock (1) through underwriters or dealers, (2) through agents or (3) directly to one or more purchasers, or through a combination of such methods. We may distribute the common stock from time to time in one or more transactions at:

- · a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- · prices related to the prevailing market prices; or
- negotiated prices.

A prospectus supplement will describe the terms of the offering of our common stock, including:

- the number of shares of common stock we are offering;
- the name or names of any underwriters;
- any securities exchange or market on which the common stock may be listed;
- the purchase price or other consideration to be paid in connection with the sale of our common stock being offered and the proceeds we will receive from the sale;
- any over-allotment options pursuant to which the underwriters may purchase additional shares of common stock from us;
- any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation; and
- · any discounts or concessions allowed or reallowed or paid to dealers.

We may directly solicit offers to purchase the common stock. We may also designate agents to solicit offers to purchase the common stock from time to time. We will name in a prospectus supplement any agent involved in the offer or sale of our common stock. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

If we utilize a dealer in the sale of the common stock being offered by this prospectus, we will sell the common stock to the dealer, as principal. The dealer may then resell the common stock to the public at varying prices to be determined by the dealer at the time of resale.

If we utilize an underwriter in the sale of the common stock being offered, we will execute an underwriting agreement with the underwriter at the time of sale. In connection with the sale of the common stock, we, or the purchasers of our common stock for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the common stock to or through dealers, and the underwriter may compensate those dealers in the form of discounts, concessions or commissions. Subject to certain conditions, the underwriters will be obligated to purchase all of the shares of common stock offered by the prospectus supplement. We may change from time to time the public offering price and any discounts or concessions allowed or reallowed or paid to dealers.

4

Underwriters, dealers and agents participating in the distribution of the common stock may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, and any discounts and commissions received by them and any profit realized by them on resale of the common stock may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments they may be required to make in respect thereof.

Shares of our common stock sold pursuant to the registration statement of which this prospectus is a part will be authorized for quotation and trading on the Nasdaq Global Market. One or more underwriters may make a market in our common stock, but the underwriters will not be obligated to do so and may discontinue market making at any time without notice. We cannot give any assurance as to liquidity of the trading market for our common stock.

To facilitate the offering of the common stock, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock. This may include over-allotments or short sales of the common stock, which involve the sale by persons participating in the offering of more shares of common stock than we sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option. In addition, these persons may stabilize or maintain the price of the common stock by bidding for or purchasing the common stock in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in the offering may be reclaimed if the shares of common stock sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of our common stock at a level above that which might otherwise prevail in the open market. These transactions, if commenced, may be discontinued at any time.

Any underwriters who are qualified market makers on the Nasdaq Global Market may engage in passive market making transactions in the common stock on the Nasdaq Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be

identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

In compliance with guidelines of the National Association of Securities Dealers, or NASD, the maximum consideration or discount to be received by any NASD member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

The underwriters, dealers and agents may engage in other transactions with us, or perform other services for us, in the ordinary course of their business. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

LEGAL MATTERS

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, will pass upon the validity of the issuance of the common stock offered by this prospectus.

EXPERTS

The consolidated financial statements and schedule of ImmunoGen, Inc. appearing in ImmunoGen, Inc.'s Annual Report (Form 10-K) for the year ended June 30, 2006 and ImmunoGen Inc. management's assessment of the effectiveness of internal control over financial reporting as of June 30, 2006 included therein, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements, schedule, and management's assessment are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

5

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information at the SEC's public reference facilities at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference facilities. SEC filings are also available at the SEC's web site at http://www.sec.gov. Our common stock is listed on the Nasdaq Global Market, and you can read and inspect our filings at the offices of the National Association of Securities Dealers, Inc. at 1735 K Street, Washington, D.C. 20006.

This prospectus is only part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act of 1933, as amended, and therefore omits certain information contained in the registration statement. We have also filed exhibits and schedules with the registration statement that are excluded from this prospectus, and you should refer to the applicable exhibit or schedule for a complete description of any statement referring to any contract or other document. You may inspect a copy of the registration statement, including the exhibits and schedules, without charge, at the public reference room or obtain a copy from the SEC upon payment of the fees prescribed by the SEC.

We also maintain a web site at *www.immunogen.com*, through which you can access our SEC filings. The information set forth on our web site is not part of this prospectus.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with them, which means that we can disclose important information in this prospectus by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this prospectus and prior to the termination or completion of any offering of securities under this prospectus and accompanying prospectus supplements:

- · our annual report on Form 10-K for the fiscal year ended June 30, 2006, filed on August 28, 2006, as amended by Amendment No. 1 thereto, filed on September 11, 2006;
- our quarterly report on Form 10-Q for the quarter ended September 30, 2006, filed on November 3, 2006;
- our quarterly report on Form 10-Q for the quarter ended December 31, 2006, filed on February 8, 2007;
- our quarterly report on Form 10-Q for the quarter ended March 31, 2007, filed on May 9, 2007;
- our current report on Form 8-K, filed on September 5, 2006;
- our current report on Form 8-K, filed on September 11, 2006;
- our current report on Form 8-K, filed on October 4, 2006;
- · our current report on Form 8-K, filed on October 19, 2006;
- · our current report on Form 8-K, filed on November 8, 2006;
- our current report on Form 8-K, filed on November 13, 2006;

- · our current report on Form 8-K, filed on November 15, 2006;
- · our current report on Form 8-K, filed on December 6, 2006;
- our current report on Form 8-K, filed on December 11, 2006;
- our current report on Form 8-K, filed on December 15, 2006;
- · our current report on Form 8-K, filed on December 28, 2006;
- our current report on Form 8-K, filed on February 5, 2007;

6

- · our current report on Form 8-K, filed on March 9, 2007;
- our current report on Form 8-K, filed on March 23, 2007;
- our current report on Form 8-K, filed on April 6, 2007;
- our current report on Form 8-K, filed on May 2, 2007;
- our current report on Form 8-K, filed on May 4, 2007;
- our current report on Form 8-K, filed on May 18, 2007;
- · our current report on Form 8-K, filed on June 5, 2007;
- the description of our capital stock contained in our registration statement on Form 8-A, filed on September 25, 1989, as amended by Amendment No. 1 thereto, filed on November 15, 1989, under the Securities Exchange Act of 1934, as amended, including amendments or reports filed for the purpose of updating such description;
- the portions of our definitive proxy statement on Schedule 14A that are deemed "filed" with the SEC under the Securities Exchange Act of 1934, as amended, filed on October 6, 2006; and
- all of the filings that we make pursuant to the Securities Exchange Act of 1934, as amended, (1) after the date of the filing of the original registration statement and prior to the effectiveness of the registration statement and (2) until all of the common stock to which this prospectus relates has been sold or the offering is otherwise terminated, except in each case for information contained in any such filing where we indicate that such information is being furnished and is not considered "filed" under the Securities Exchange Act of 1934, as amended, which filings will be deemed to be incorporated by reference in this prospectus and the accompanying prospectus supplement and to be a part hereof from the date of filing of such documents.

The SEC file number for each of the documents listed above is 000-17999.

We will provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon the request of any such person, a copy of any or all of the information incorporated herein by reference (exclusive of exhibits to such documents unless such exhibits are specifically incorporated by reference herein). Requests, whether written or oral, for such copies should be directed to ImmunoGen, Inc., Attention: Investor Relations, 128 Sidney Street, Cambridge, MA 02139, (617) 995-2500.

You should rely only on information contained in, or incorporated by reference into, this prospectus and any prospectus supplement. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference in this prospectus. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

7

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth an itemization of the various expenses, all of which we will pay, in connection with the issuance and distribution of the common stock being registered. All of the amounts shown are estimated except the SEC Registration Fee.

| SEC Registration Fee | \$ 2,302.50 |
|------------------------------|--------------|
| NASD Filing Fee | 8,000.00 |
| Printing and Engraving Fees | 30,000.00 |
| Legal Fees and Expenses | 100,000.00 |
| Accounting Fees and Expenses | 60,000.00 |
| Miscellaneous | 30,000.00 |
| Total | \$230,302.50 |

Item 15. Indemnification of Directors and Officers.

Subdivision E of Part 8 of the Massachusetts Business Corporation Act (the "MBCA") authorizes the provisions, described below, contained in our Restated Articles of Organization and By-laws. In addition, Sections 8.30 and 8.42 of the MBCA provide that if an officer or director discharges his or her duties in good faith and with the care that a person in a like position would reasonably exercise under similar circumstances and in a manner the officer or director reasonably believes to be in the best interests of the corporation, he or she will not be liable for such action.

Article 6(d) of our Restated Articles of Organization also provides that the liability of our directors shall be limited to the fullest extent permitted by the MBCA and Section 6.6 of our By-Laws provides as follows:

"Section 6.6 Indemnification of Officers, Directors and Members of Scientific Advisory Board. The corporation shall indemnify and hold harmless each person, now or hereafter an officer or Director of the corporation, or a member of the Scientific Advisory Board, from and against any and all claims and liabilities to which he may be or become subject by reason of his being or having been an officer, Director or member of the Scientific Advisory Board of the corporation or by reason of his alleged acts or omissions as an officer, Director or member of the Scientific Advisory Board of the corporation, and shall indemnify and reimburse each such officer, Director and member of the Scientific Advisory Board against and for any and all legal and other expenses reasonably incurred by him in connection with any such claims and liabilities, actual or threatened, whether or not at or prior to the time which so indemnified, held harmless and reimbursed he has ceased to be an officer, Director or member of the Scientific Advisory Board of the corporation, except with respect to any matter as to which such officer, Director or member of the Scientific Advisory Board of the corporation shall have been adjudicated in any proceeding not to have acted in good faith in the reasonable belief that his action was in the best interest of the corporation; provided, however, that prior to such final adjudication the corporation may compromise and settle any such claims and liabilities and pay such expenses, if such settlement or payment or both appears, in the judgment of a majority of those members of the Board of Directors who are not involved in such matters, to be for the best interest of the corporation as evidenced by a resolution to that effect adopted after receipt by the corporation of a written opinion of counsel for the corporation, that, based on the facts available to such counsel, such officer, Director or member of the Scientific Advisory Board of the corporation has not been guilty of acting in a manner that would proh

Such indemnification may include payment by the corporation of expenses incurred in defending a civil or criminal action or proceeding in advance of the final disposition of such action or proceeding, upon receipt of an undertaking by the person indemnified to repay such payment if he shall be adjudicated not to be entitled to indemnification under this section.

The corporation shall similarly indemnify and hold harmless persons who serve at its express written request as directors or officers of another organization in which the corporation owns shares or of which it is a creditor.

The right of indemnification herein provided shall be in addition to and not exclusive of any other rights to which any officer, Director or member of the Scientific Advisory Board of the corporation, or any such persons who serve at its request as aforesaid, may otherwise be lawfully entitled. As used in this Section, the terms "officer," "Director," and "member of the Scientific Advisory Board" include their respective heirs, executors, and administrators."

II-1

We also carry insurance policies insuring our directors and officers against certain liabilities that they may incur in their capacity as directors and officers.

Any underwriting agreements that we may enter into will likely provide for the indemnification of us, our controlling persons, our directors and certain of our officers by the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Item 16. Exhibits

The exhibits to this registration statement are listed in the Exhibit Index to this registration statement, which Exhibit Index is hereby incorporated by reference.

Item 17. Undertakings

- (a) The undersigned registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or any decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission

- pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended, that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, as amended, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933, as amended, to any purchaser:

II-2

- (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933, as amended, shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933, as amended, to any purchaser in the initial distribution of the securities, in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, as amended, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934, as amended), that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (c) The undersigned registrant hereby undertakes (1) to use its best efforts to distribute prior to the opening of bids, to prospective bidders, underwriters, and dealers, a reasonable number of copies of a prospectus which at that time meets the requirements of Section 10(a) of the Securities Act of 1933, as amended, and relating to the securities offered at competitive bidding, as contained in the registration statement, together with any supplements thereto, and (2) to file an amendment to the registration statement reflecting the results of the bidding, the terms of the reoffering and related matters to the extent required by the applicable form, not later than the first use, authorized by the issuer after the opening of bids, of a prospectus relating to the securities offered at competitive bidding, unless no further public offering of such securities by the issuer and no reoffering of such securities by the purchasers is proposed to be made.

(d) Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the registrant, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933, as amended, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

II-4

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Cambridge, Massachusetts, on July 11, 2007.

IMMUNOGEN, INC.

By: /s/ Mitchel Sayare

Name: Mitchel Sayare

Title: President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of ImmunoGen, Inc., hereby severally constitute and appoint Mitchel Sayare and Daniel M. Junius, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities held on the dates indicated.

| Signature | Title | Date |
|--|---|---------------|
| /s/ Mitchel Sayare | Chairman, President and Chief Executive Officer (principal executive officer) | July 11, 2007 |
| /s/ Daniel M. Junius Daniel M. Junius | Executive Vice President and Chief Financial Officer (principal financial and accounting officer) | July 11, 2007 |
| /s/ David W. Carter David W. Carter | Director | July 11, 2007 |
| /s/ Stephen C. McCluski Stephen C. McCluski | Director | July 11, 2007 |
| /s/ Nicole Onetto Nicole Onetto | Director | July 11, 2007 |
| /s/ Mark Skaletsky Mark Skaletsky | Director | July 11, 2007 |
| /s/ Joseph Villafranca Joseph Villafranca | Director | July 11, 2007 |

EXHIBIT INDEX

| Exhibit Number | Description |
|-------------------|---|
| 1.1* | Form of Underwriting Agreement |
| 4.1 | Restated Articles of Organization (previously filed with the Commission as Exhibit 3.1 to, and incorporated herein by reference from, |
| | the Registrant's registration statement on Form S-1, as amended, filed on March 8, 1991 (Registration No.: 333-38883)). |
| 4.2 | Articles of Amendment to Restated Articles of Organization (previously filed with the Commission as Exhibit 3.1 to, and |
| | incorporated herein by reference from, the Registrant's quarterly report on Form 10-Q for the quarter ended December 31, 2001 |
| | (Commission File No.: 000-17999)). |
| 4.3 | Amended and Restated By-Laws (previously filed with the Commission as Exhibit 3.1 to, and incorporated herein by reference from, |
| | the Registrant's current report on Form 8-K filed on April 6, 2007 (Commission File No.: 000-17999)). |
| 4.4 | Form of Common Stock Certificate (previously filed with the Commission as Exhibit 4.2 to, and incorporated herein by reference |
| | from, the Registrant's registration statement on Form S-1, as amended, filed on November 15, 1989 (Registration No.: 333-31219)). |
| 5.1 | Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. with respect to the legality of the shares of common stock being |
| | registered. |
| 23.1 | Consent of Independent Registered Public Accounting Firm. |
| 23.2 | Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in the opinion filed as Exhibit 5.1). |
| 24.1 | Power of Attorney (included on the signature page of this registration statement). |

^{*} To be subsequently filed, if applicable, by an amendment to this registration statement or by a current report on Form 8-K.

July 11, 2007

ImmunoGen, Inc. 128 Sidney Street Cambridge, MA 02139

Ladies and Gentlemen:

We have acted as counsel to ImmunoGen, Inc., a Massachusetts corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission of a Registration Statement on Form S-3 (the "Registration Statement"), pursuant to which the Company is registering the issuance under the Securities Act of 1933, as amended (the "Securities Act"), of up to \$75,000,000 of shares (the "Shares") of its common stock, \$.01 par value per share (the "Common Stock"). This opinion is being rendered in connection with the filing of the Registration Statement. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

In connection with this opinion, we have examined the Company's articles of organization and bylaws, both as amended and currently in effect; such other records of the corporate proceedings of the Company and certificates of the Company's officers as we have deemed relevant; and the Registration Statement and the exhibits thereto.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies and the authenticity of the originals of such copies.

Members of our firm are admitted to the Bar of the Commonwealth of Massachusetts, and we do not express any opinion as to the laws of any other jurisdiction other than the United States Federal Laws and the reported judicial decisions interpreting those laws. To the extent that any applicable document is stated to be governed by the laws of another jurisdiction, we have assumed for purposes of this opinion that the laws of such jurisdiction are identical to the state laws of the Commonwealth of Massachusetts. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction. The Shares may be issued from time to time on a delayed or continuous basis, but this opinion is limited to the laws, including the rules and regulations thereunder, as in effect on the date hereof.

Based upon the foregoing, we are of the opinion that the Shares, when (i) specifically authorized for issuance by the Company's Board of Directors or an authorized committee thereof (the "Authorizing Resolutions"), (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, and provided no stop order shall have been issued by the Securities and Exchange Commission relating thereto, (iii) an appropriate Prospectus Supplement with respect to the applicable Shares has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder, (iv) if Shares are to be sold pursuant to a purchase, underwriting or similar agreement (an "Underwriting Agreement"), such Underwriting Agreement with respect to the applicable Shares has been duly authorized, executed and delivered by the Company and the other parties thereto, (v) the terms of the sale of the Shares have been duly established in conformity with the Company's articles of organization and bylaws, as amended and in effect at such time, and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding on the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, (vi) the Shares have been issued and sold as contemplated by the Registration Statement (including any Prospectus Supplement relating thereto), and (vii) the Company has received the consideration provided for in the Authorizing Resolutions and the Underwriting Agreement, if applicable, will be validly issued, fully paid and non-assessable.

It is understood that this opinion is to be used only in connection with the offer and sale of the Shares while the Registration Statement is in effect.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of this Firm's name therein and in the prospectus included therein under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Securities and Exchange Commission.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus of ImmunoGen, Inc. for the registration of up to \$75,000,000 of its Common Stock and to the incorporation by reference therein of our reports dated August 24, 2006, with respect to the consolidated financial statements and schedule of ImmunoGen, Inc., ImmunoGen, Inc. management's assessment of the effectiveness of internal control over financial reporting, and the effectiveness of internal control over financial reporting of ImmunoGen, Inc., included in its Annual Report (Form 10-K) for the year ended June 30, 2006, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts

July 9, 2007