IMMUNOGEN INC
Form 424B5
May 20, 2011

Use these links to rapidly review the document

**Prospectus**

Table of Contents

**Filed pursuant to Rule 424(b)(5)**
**Registration No. 333-174335**

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and we are not soliciting an offer to buy these securities in any state or other jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 19, 2011

**PROSPECTUS SUPPLEMENT**
(to Prospectus dated May 19, 2011)

# Shares

# Common Stock

We are offering shares of our common stock. Our common stock is listed on The NASDAQ Global Select Market under the symbol "IMGN." On May 18, 2011, the last reported sale price of our common stock on The NASDAQ Global Select Market was $13.06 per share.

**Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page S-10 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.**

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

| | PER SHARE | TOTAL |
|---|---|---|
| Public Offering Price | $ | $ |
| Underwriting Discounts and Commissions | $ | $ |
| Proceeds to ImmunoGen, before expenses | $ | $ |

Delivery of shares of common stock is expected to be made on or about May , 2011. We have granted the underwriters an option for a period of 30 days to purchase up to an additional shares of our common stock solely to cover over-allotments.

*Sole Book-Running Manager*

**Jefferies**

*Co-Managers*

**Oppenheimer & Co.**

**RBC Capital Markets**

**William Blair & Company**

**Canaccord Genuity**

**Morgan Joseph TriArtisan**

Prospectus Supplement dated May , 2011

Table of Contents

**Table of Contents**

**Prospectus Supplement**



**Prospectus**



**You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the underwriters have authorized anyone to provide you with information different from that contained in this prospectus or any accompanying free writing prospectus. We are offering to sell, and seeking offers to buy, common stock only in jurisdictions where offers and sales are permitted. If anyone provides you with different or inconsistent information, you should not rely on it. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The information contained in this prospectus supplement, the accompanying prospectus and any accompanying free writing prospectus is accurate only as of the date of this prospectus supplement, the accompanying prospectus and any such accompanying free writing**

Table of Contents

**prospectus, regardless of the time of delivery of this prospectus supplement, the accompanying prospectus, any such accompanying free writing prospectus or of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement entitled "Where You Can Find More Information" and "Incorporation of Documents by Reference."**

**No action is being taken in any jurisdiction outside the United States to permit a public offering of the common stock or possession or distribution of this prospectus supplement, the accompanying prospectus or any free writing prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement, the accompanying prospectus or any free writing prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus supplement, the accompanying prospectus and any accompanying free writing prospectus applicable to that jurisdiction.**

Table of Contents

**About this Prospectus Supplement**

On May 19, 2011, we filed with the Securities and Exchange Commission, or SEC, a registration statement on Form S-3 (File No. 333-174335) utilizing a shelf registration process relating to the securities described in this prospectus supplement, which registration statement was automatically effective upon filing. Under this shelf registration process, we may, from time to time, sell common stock and other securities, of which this offering is a part.

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this common stock offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the prospectus. The second part, the accompanying prospectus, gives more general information, some of which does not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined.

If the description of the offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in the accompanying prospectus the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless we have indicated otherwise, or the context otherwise requires, references in this prospectus supplement and the accompanying prospectus to "ImmunoGen," "the Company," "we," "us" and "our" or similar terms are to ImmunoGen, Inc. and its subsidiaries.

Table of Contents

## Prospectus Supplement Summary

*This summary highlights information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that you should consider before deciding to invest in our common stock. You should read this entire prospectus supplement and the accompanying prospectus carefully, including the "Risk Factors" section contained in this prospectus supplement, our consolidated financial statements and the related notes thereto and the other documents and information incorporated by reference in this prospectus supplement and the accompanying prospectus and the information included in any free writing prospectus that we have authorized for use in connection with this offering.*

### Company Overview

We develop novel, targeted therapeutics for the treatment of cancer using our expertise in cancer biology, monoclonal antibodies, highly potent cytotoxic, or cell-killing, agents, and the design of linkers that enable these agents to be stably attached to the antibodies while in the blood stream and released in their fully active form after delivery to a cancer cell. An anti-cancer compound made using our Targeted Antibody Payload, or TAP, technology consists of a monoclonal antibody that binds specifically to an antigen target found on cancer cells with multiple copies of one of our proprietary cell-killing agents attached using one of our engineered linkers. Its antibody component enables a TAP compound to bind specifically to cancer cells that express a particular target antigen, the highly potent cytotoxic agent serves to kill the cancer cell and the engineered linker controls the release and activation of the cytotoxic agent inside the cancer cell. Our TAP technology is designed to enable the creation of highly effective, well-tolerated anti-cancer product candidates.

We believe that our TAP technology and our expertise in the development and humanization of monoclonal antibodies will enable us to become a leader in the application of antibody-based anti-cancer compounds. We plan to achieve this goal through the development of our own anti-cancer products and through collaborations with other companies, including industry leaders in oncology. There are now six TAP compounds and one therapeutic, or "naked," antibody candidate, in clinical trials from our own programs and from several of our collaborations with other companies. Our collaborators currently include: Amgen, Bayer HealthCare, Biotest, Genentech (a member of the Roche Group), Novartis and Sanofi.

On April 28, 2011, we reported our financial results for the third quarter of fiscal year 2011, ended March 31, 2011, including a balance of cash and marketable securities of approximately $115.8 million.

Table of Contents

**Our Product Candidates**

There are six TAP compounds and one therapeutic, or "naked" antibody in clinical trials through our own programs and our collaborations with other companies. We expect as many as six more TAP compounds to enter the clinic by mid-2012. The following table lists the current and projected stage of development of our most advanced product candidates currently in or projected to be in clinical or preclinical development:

| | Stage Today | Projected Stage Mid-2012 |
|---|---|---|
| **Compounds in Development Through Collaborative Partners** | | |
| Lorvotuzumab mertansine (IMGN901) | Phase I | Phase II |
| IMGN388 | Phase I | Phase II |
| IMGN529 | Preclinical | Phase I |
| IMGN853 | Preclinical | Phase I |
| Next ImmunoGen-developed compound | Research | Preclinical |
| **Compounds in Development by ImmunoGen** | | |
| Trastuzumab emtansine (T-DM1) | Phase III | Pre-registration |
| SAR3419 | Phase I | Phase II |
| SAR650984* | Phase I | Phase I |
| SAR566658 | Phase I | Phase I |
| BT-062 | Phase I | Phase II |
| Next partner compound 1 | Preclinical | Phase I |
| Next partner compound 2 | Preclinical | Phase I |
| Next partner compound 3 | Preclinical | Phase I |
| Next partner compound 4 | Preclinical | Phase I |
| Next partner compound 5 | Research | Preclinical |

* Therapeutic antibody compound.

**Trastuzumab Emtansine (T-DM1) Most Advanced TAP Compound**

The most advanced compound in development using our TAP technology is trastuzumab emtansine, which is also known as T-DM1. T-DM1 consists of trastuzumab, which is the active component of Roche's marketed anti-cancer compound Herceptin®, combined with one of our cell-killing agents attached using one of our engineered linkers. T-DM1 is in global development by Roche for the treatment of HER2+ breast cancer, or BC, under a license between us and Genentech. Roche markets Herceptin, which had global sales of approximately 5.4 billion Swiss francs (approximately US$6 billion) in 2010 (based on public reports from Roche and current exchange rates).

We believe that the anti-cancer activity of T-DM1 reported in clinical testing to date is compelling. Clinical efficacy results for T-DM1 in HER2+ metastatic BC to date include:

/*/

*Third-line use* In a 110-patient Phase II clinical trial assessing T-DM1 for third-line treatment, the objective response rate, or ORR, was 35%. ORR is the proportion of patients in the trial receiving the particular treatment regimen who had substantial and durable tumor shrinkage, which known as an objective response by the Response Evaluation Criteria in Solid Tumors, or RECIST, criteria. To qualify for enrollment in this trial, patients must have previously been treated with Tykerb® (lapatinib) plus Xeloda® (capecitabine) as well as with Herceptin, a taxane and an anthracycline. Median progression-free survival, or PFS, was 6.9 months. Roche reported the final results from this trial at the European Society for Medical Oncology, or ESMO, 2010 annual meeting.

Table of Contents

/*/

*First-line use* A randomized, 137-patient Phase II clinical trial was conducted in the first-line setting comparing T-DM1 used alone to Herceptin plus a taxane, which is standard first-line treatment for this cancer. In this trial, ORR was 47.8% among T-DM1-treated patients compared with 41.4% among patients treated with Herceptin plus a taxane. Roche reported these preliminary results at the ESMO 2010 annual meeting. Roche has since reported that the patients treated with T-DM1 had a significantly longer median PFS than those randomized to treatment with Herceptin in addition to a taxane. The details of the PFS data as well as the mature ORR data are expected to be reported in the second half of 2011.

When used as a second-line treatment for HER2+ metastatic BC, Tykerb plus Xeloda (approved drugs for the treatment of HER2+ metastatic BC) achieves a 24% ORR and 6.3-month time to progression, according to the Tykerb labeling. When used as a first-line treatment for this cancer, Herceptin plus a taxane achieves a 38% ORR and 6.7-month time to progression, according to the Herceptin labeling.

In the first-line, 137 patient Phase II clinical trial comparing T-DM1 with Herceptin plus a taxane, T-DM1 also offered potential tolerability advantages over the Herceptin plus chemotherapy treatment regimen. Grade 3 or greater adverse events, which are the more severe side effects, were reported in 37.3% of T-DM1-treated patients compared with 75.0% of patients treated with Herceptin plus a taxane. The most common side effects (of any grade) reported with T-DM1 were also commonly reported with Herceptin plus a taxane, while the most common side effects reported with Herceptin plus a taxane were observed less frequently with T-DM1. The following table shows the incidence of certain adverse events observed in both treatment arms of this Phase II clinical trial:

| | Incidence | |
|---|---|---|
| **Adverse Events** | **T-DM1** | **Herceptin + Docetaxel (a taxane)** |
| **T-DM1 top adverse events (any grade)** | | |
| Nausea | 47.8% | 39.7% |
| Fatigue | 46.3% | 46.2% |
| Temperature increase | 35.8% | 20.6% |
| **Herceptin plus docetaxel top adverse events (any grade)** | | |
| Alopecia | 1.5% | 66.2% |
| Neutropenia | 7.5% | 57.4% |
| Diarrhea | 10.4% | 45.6% |

T-DM1 is also being studied in the following clinical trials:

/*/

*Second-line use* A Phase III clinical trial (EMILIA) that compares T-DM1 used alone to Tykerb used together with Xeloda as second-line therapy for HER2+ metastatic BC began in February 2009. According to Roche, 551 patients had been enrolled in the trial as of December 31, 2010. Roche has indicated this trial is expected to enroll 980 patients and utilize PFS and overall survival as co-primary endpoints. Roche expects to report PFS results in 2012 and, if results are favorable, it intends to apply for marketing approval of T-DM1 for second-line use in the United States and Europe with these data in 2012. Roche also plans to include in these submissions the findings from the 110 patient third-line Phase II clinical trial to support approval of T-DM1 in the third-line setting as well. In the United States, Roche expects to seek accelerated approval of T-DM1 with only the PFS data from EMILIA, and then to seek full marketing approval using the overall survival data from EMILIA when available. Roche anticipates seeking full marketing approval of T-DM1 in Europe based on only the PFS data from EMILIA.

Table of Contents

/*/

*First-line use* A Phase III clinical trial (MARIANNE) to assess T-DM1 as a first-line treatment for HER2+ metastatic BC began in July 2010. This trial compares T-DM1 used alone and T-DM1 used together with pertuzumab to Herceptin used together with a taxane. The primary endpoint of MARIANNE is PFS. If results from MARIANNE are favorable, Roche expects to submit a Biologics License Application to the US Food and Drug Administration, or FDA, for T-DM1 for first-line use in 2014. Roche has indicated that patient enrollment in MARIANNE is proceeding very well.

/*/

*Adjuvant/neoadjuvant* A Phase II clinical trial that assesses the safety of T-DM1 in the HER2+ BC adjuvant/neoadjuvant setting began in October 2010. Roche expects to enroll 135 patients in this trial.

In addition to further data from the first-line, 137 patient Phase II clinical trial in the second half of 2011, T-DM1 data is also expected to be reported at the San Antonio Breast Cancer Symposium in December 2011. We believe that T-DM1 has the potential to be a valuable new therapeutic for the treatment of patients with HER2+ cancer. With approval of T-DM1 possible as early as 2013 (assuming filing for marketing approval in 2012), we would be entitled to royalties from sales of T-DM1, if any.

**Lorvotuzumab Mertansine (IMGN901) Our Lead Wholly Owned Compound**

Our most advanced wholly owned compound is lorvotuzumab mertansine, which we also call IMGN901. The target for this TAP compound, CD56, is found on various cancers, including cancers with significant unmet medical needs. CD56 is found on small-cell lung cancer, or SCLC, Merkel cell carcinoma, or MCC, and multiple myeloma. Both metastatic SCLC and MCC are highly aggressive cancers with limited treatment options today, and although more treatment options are available for multiple myeloma, there remains a need for new, effective, well-tolerated therapies. IMGN901 has received orphan drug designation in the United States and Europe for SCLC, MCC and multiple myeloma. Based on scientific literature and/or our own studies, we believe that CD56 is expressed in approximately 100% of SCLC and MCC cases and approximately 70% of multiple myeloma cases. Based on American Cancer Society estimates, we believe that approximately 31,000 new cases of SCLC and 20,000 new cases of multiple myeloma were diagnosed in the United States in 2010. Based on other published data, we believe approximately 1,900 new cases of MCC were diagnosed in the United States in 2010.

We are evaluating IMGN901 for the treatment of CD56+ cancers, focusing on SCLC, MCC and multiple myeloma when used in combination with existing anti-cancer agents. The clinical trials underway are designed to establish value and the fastest path to market for this product candidate.

**Evaluation for SCLC** In early-stage clinical trials assessing IMGN901 used as a single agent, IMGN901 showed evidence of anti-cancer activity in SCLC at doses that were generally well tolerated. In the fourth quarter of 2010, we initiated a Phase I/II clinical trial, called Study 007, to evaluate IMGN901 as a first-line treatment for SCLC when used in combination with etoposide/carboplatin, the current first-line standard of care for this cancer. The Phase I arm of this trial is designed to establish the maximum tolerated dose of IMGN901 when used in combination with etoposide/carboplatin and is open to any patient for whom treatment with etoposide/carboplatin is appropriate.

Once the maximum tolerated dose is established, we plan to initiate the Phase II arm of this trial. In the Phase II arm, enrollment will be limited to patients with previously untreated SCLC. Patients are expected to be randomized to treatment with either etoposide/carboplatin plus IMGN901, at the dose established in the Phase I arm of the trial, or etoposide/carboplatin alone. We plan to use a 2:1 randomization schedule, enabling 60 patients to receive etoposide/carboplatin plus IMGN901 and 30 patients to receive etoposide/carboplatin alone. Patients in both groups will receive up to six cycles of treatment with etoposide/carboplatin. The patients who also receive IMGN901 have the option of continuing to receive this compound after their treatment with etoposide/carboplatin has ended.

Table of Contents

We anticipate completion of the Phase I arm and start of the Phase II arm of this trial during the second half of 2011. We intend to report the findings from the Phase I arm of the trial at a medical conference in the fourth quarter of 2011. We anticipate we may also include in the presentation the Phase II data, if any, available at that time.

The primary endpoint of the Phase I arm of the trial is establishing the maximum tolerated dose of IMGN901 used in combination with etoposide/carboplatin. The primary endpoint of the Phase II arm of the trial is PFS, with secondary endpoints that include PFS at six months, overall survival at 12 months, time to progression, overall survival and ORR. We believe the randomized Phase II arm of the trial is designed to provide clear information on the benefit IMGN901 can provide in the treatment of SCLC.

**Evaluation for MCC** Metastatic MCC is a rare and aggressive cancer with no approved therapies. The length of survival after diagnosis is often quite short, with available data suggesting median survival is in the range of about seven months. Thirteen patients with MCC received IMGN901 as a single agent in a completed Phase I clinical trial. Two of these patients had a complete disappearance of their tumors, or a complete response to treatment, and their cancer has not recurred. Three other patients had no significant change in the number or size of their tumors, or stable disease, for a clinically relevant period of time. Taken together, IMGN901 as a single agent had a clinical benefit rate of approximately 38% among these patients (two complete responses plus the three stable disease patients among thirteen MCC patients treated).

We believe development of IMGN901 for MCC is potentially a faster route to market than its development as a treatment for other cancers. We are currently planning to initiate a pivotal trial with IMGN901 in the second half of 2012 for the treatment of MCC when used in combination with etoposide/carboplatin. We intend to use the dose information established in the Phase I arm of Study 007 for this trial, which we believe will need to be randomized but can be of a manageable size. We intend to make our decision regarding initiating this trial based on several factors, including the initial findings in Study 007, the potential return/cost of this trial and regulatory considerations in both the United States and Europe.

**Evaluation for Multiple Myeloma** In a Phase I clinical trial assessing IMGN901 used as a single agent, IMGN901 showed evidence of anti-cancer activity for multiple myeloma at doses that were generally well tolerated. We initiated another Phase I clinical trial in late 2009 to evaluate IMGN901 used in combination with Revlimid® (lenalidomide) and dexamethasone, which is a current standard care for this cancer. The dose-finding phase of this trial is designed to establish the maximum tolerated dose of IMGN901 when used in combination with Revlimid/dexamethasone, and is open to patients with CD56+ multiple myeloma that has been treated with at least one prior therapy.

Initial data from this trial were reported at the American Society of Hematology, or ASH, annual meeting in December 2010. These data were initial findings in the first seven patients treated in the trial and we believe they are encouraging. These relapsed patients had received a median of three prior chemotherapy regimens, and most had previously received a stem-cell transplant. Of these patients, six experienced clinical benefit with two very good partial responses, three partial responses and one stable disease. These six patients were still on the trial drug candidate at the time of data cut off for the presentation.

Once the maximum tolerated dose is established, we plan to limit enrollment in the expansion phase of this trial to patients with previously untreated multiple myeloma. The primary endpoints of the expansion phase are expected to be ORR and duration of response. We believe this trial will provide information on the benefit IMGN901 can provide in the treatment of multiple myeloma.

Additional data from the dose-finding phase of this trial has been accepted for presentation at American Society of Clinical Oncology, or ASCO, annual meeting in the second quarter of 2011. We also expect to report additional data from this trial at the ASH annual meeting in the fourth quarter of 2011.

Table of Contents

**Other Product Candidates**

**IMGN388** is a TAP compound that targets an integrin found on many types of solid tumors and also on vascular endothelial cells in the process of forming new blood vessels, or angiogenesis. Angiogenesis is needed for a tumor to grow. IMGN388 is in Phase I clinical testing, and we expect to report additional data from this trial at a medical conference in the fourth quarter of 2011. The Centocor Ortho Biotech division of Johnson & Johnson has certain opt-in rights with respect to this compound.

**IMGN529** is expected to be our next clinical-stage compound. We expect to submit an investigational new drug, or IND, application to the FDA for this product candidate in mid-2011.

This TAP compound is a potential next generation therapy for non-Hodgkin's lymphoma, or NHL, and for chronic lymphocytic lymphoma, or CLL. Its target, CD37, has an expression profile similar to that of CD20, the target of Rituxan®, on NHL subtypes. IMGN529's CD37-targeting antibody component has strong pro-apoptotic, or natural cell killing properties, antibody dependent cellular cytotoxicity and complement-dependent cytotoxicity activity, which we believe enables this antibody to effectively kill cancer cells as observed in preclinical testing. The antibody retains its anti-cancer properties after attachment of our potent cell-killing agent, which we believe provides IMGN529 with an additional, and highly effective, method of killing cancer cells. In *in vitro* preclinical testing, the antibody component in IMGN529 demonstrated comparable or greater potency against human B-cell cancer cells to that of Rituxan. We believe IMGN529 is a highly differentiated compound for NHL and CLL because it is, to our knowledge, the only compound in development for these cancers that includes an active antibody component as well as a potent cytotoxic agent.

**IMGN853** is expected to be our next clinical-stage compound after IMGN529. We expect to submit an IND to the FDA for this TAP compound in the first quarter of 2012. IMGN853 targets folate receptor 1, or FOLR1, which is over expressed on many cases of ovarian cancer and also on other types of solid tumors. IMGN853 consists of a FOLR1-targeting antibody with one of our potent cell-killing agents attached using one of the new engineered linkers we developed for cancers with multi-drug resistance.

**Other Product Candidates in Development Through Our Collaborations**

**SAR3419** is in development by Sanofi. We created this TAP compound, including its antibody component, and licensed it to Sanofi as part of a broader collaboration. SAR3419 targets CD19 and is a potential new treatment for NHL. We believe that the findings from the first clinical trial conducted with the compound were encouraging. In that trial, SAR3419 was administered once every three weeks for a maximum of six doses. We expect the first findings from the Phase I trial to be reported at the ASCO annual meeting in June 2011 and the final data to be reported in the fourth quarter of 2011. Sanofi has stated that it expects to initiate Phase II clinical testing with SAR3419 in the second half of 2011.

**BT-062** was created by Biotest under a license agreement that grants Biotest the exclusive right to use our maytansinoid TAP technology with antibodies that target CD138, an antigen found on multiple myeloma and certain other cancers. BT-062 is in clinical testing for the treatment of multiple myeloma. We believe that the findings from the first clinical trial conducted with the compound were encouraging. In that trial, BT-062 was administered once every three weeks. A Phase I/II trial is now underway that assesses the compound when dosed more frequently. We have opt-in rights with respect to BT-062 in the United States.

**SAR650894** advanced into Phase I clinical testing in 2010 through our collaboration with Sanofi. It consists of a CD38-targeting antibody with potent anti-cancer activity and does not have a separate cytotoxic agent attached. Sanofi is developing it for the treatment of certain hematological malignancies.

**SAR566658** also advanced into clinical testing in 2010 through our collaboration with Sanofi. It targets an antigen found on many cases of ovarian cancer and certain other carcinomas. It is currently in Phase I clinical testing for the treatment of solid tumors that express this antigen.

Table of Contents

We expect four additional TAP compounds to advance into clinical testing by mid-2012 through our collaborations with other companies, with IND filing and acceptance to occur for several of these programs.

**Business Development**

We selectively out-license restricted access to our TAP technology to other companies to provide us with cash to fund our own product programs and to expand the utilization of our technology. These agreements typically provide the licensee with rights to use our TAP technology with any of its antibodies and apply them to a defined target to develop products. The licensee is generally responsible for the development, clinical testing, manufacturing, registration and commercialization of any resulting product candidate. In return, we receive some combination of an upfront payment, payments on regulatory and possibly commercial milestones and royalties on any commercial sales.

Partner interest in accessing our technology is often driven by the company seeking to leverage its investment in developing or obtaining antibodies, by the data validating our approach and by the barriers preventing other companies from replicating our technology.

Our most recent out-license was entered into with Novartis. This agreement included a $45 million upfront payment as well as potential milestones of $200 million per target and royalties on sales of resultant products.

Other companies with one or more licenses to use our TAP technology include Amgen, Bayer HealthCare, Biotest, Genentech and Sanofi. Amgen, Bayer HealthCare, Genentech, Novartis and Sanofi are all leading companies in oncology.

We continue to conduct research to develop additional cell-killing agents and linkers to further strengthen our position in the field, and expect over the next several years to be involved in numerous clinical trials for existing and new product candidates ranging from early stage to registration trials. We believe our continued focus on development of additional applications of our TAP technology could provide additional opportunities for partnerships and collaborations.

**Our TAP Technology**

We developed our TAP technology to achieve highly effective, well tolerated anti-cancer drugs. Terms used to refer to our field include armed antibodies, empowered antibodies and antibody-drug conjugates, or ADCs. Our TAP technology and/or antibody expertise has generated over $300 million in payments to us from our partners since 2000. Our existing collaboration and license agreements with partners have the potential to generate additional milestone payments and royalties to us on a number of compounds.

Traditional chemotherapy agents typically kill any rapidly dividing cell, including healthy cells, which can result in significant adverse side effects and limit their ability to be dosed to full efficacy. Monoclonal antibodies can be created that bind specifically to targets found on cancer cells and, therefore, offer the potential to selectively target cancer cells. The invention of such antibodies has led to the creation of some successful anti-cancer therapeutics such as Rituxan and Herceptin. For many of the antigens found on cancer cells, however, the binding of a manufactured antibody to that antigen in and of itself has little, if any, anti-cancer effect.

Our TAP technology makes use of the targeting ability of monoclonal antibodies without needing the antibody to have meaningful anti-cancer activity on its own. A TAP compound consists of a tumor-targeting antibody with one of our highly potent cell-killing agents attached using one of our engineered linkers. The antibody serves to deliver our potent cell-killing agent specifically to cancer cells, to help minimize damage to healthy tissue. The cell-killing agent serves to kill the cancer cell. We believe our agents are far more potent than traditional chemotherapies. Our engineered linkers serve to keep the cell-killing agent attached

Table of Contents

to the antibody while the TAP compound is circulating in the bloodstream and then control its release once the TAP compound has bound to and entered a cancer cell.

**Corporate Information**

We were organized as a Massachusetts corporation in March 1981. Our principal offices are located at 830 Winter Street, Waltham, Massachusetts 02451, and our telephone number is (781) 895-0600. We maintain a web site at *www.immunogen.com*, where certain information about us is available. Please note that the information contained on the web site is not a part of this prospectus supplement.

Herceptin® is a registered trademark of Genentech, a member of the Roche Group. Rituxan® is a registered trademark of Biogen Idec Inc. Tykerb® is a registered trademark of GlaxoSmithKline plc. Xeloda® is a registered trademark of Roche. Revlimid® is a registered trademark of Celgene Corporation. Other brands, names and trademarks contained in this prospectus supplement, the accompanying prospectus or the documents incorporated by reference herein and therein are the property of their respective owners.

Table of Contents

**The Offering**

| | |
|---|---|
| Common stock offered by us | shares |
| Common stock to be outstanding after the offering | shares (or shares if the over-allotment option is exercised in full) |

**Over-allotment Option**

We have granted the underwriters an option to purchase up to additional shares of our common stock to cover over-allotments, if any. This option is exercisable, in whole or in part, for a period of 30 days from the date of this prospectus supplement.

**Use of Proceeds**

We intend to use the net proceeds from this offering for our operations, including, but not limited to, general corporate purposes, which may include research and development expenditures, clinical trial expenditures, manufacture and supply of drug substance and drug products, acquisitions of new technologies, capital expenditures and working capital. See "Use of Proceeds" on page S-12.

**NASDAQ Global Select Market Listing**

Our common stock is listed on The NASDAQ Global Select Market under the symbol "IMGN."

**Risk Factors**

An investment in our common stock involves a high degree of risk. See "Risk Factors" beginning on page S-10 of this prospectus supplement.

**Outstanding Shares**

The number of shares to be outstanding after this offering is based on 68,120,705 shares of common stock outstanding as of March 31, 2011. It does not include:

/*/ 6,849,844 shares of our common stock issuable upon exercise of stock options outstanding as of March 31, 2011 under our stock option plans as of that date, at a weighted average exercise price of $6.63;

/*/ 262,860 shares of our common stock issuable upon redemption of deferred stock units by non-employee directors as of March 31, 2011; and

/*/ 4,508,547 shares of our common stock available as of March 31, 2011 for future grant or issuance pursuant to our stock-based plans for employees, directors and consultants.

Unless otherwise indicated, all information in this prospectus supplement assumes that the underwriters will not exercise the over-allotment option granted to them by us.

Table of Contents

## Risk Factors

*An investment 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 described below and discussed under the section captioned "Risk Factors" contained in our Annual Report on Form 10-K for the year ended June 30, 2010, as filed with the SEC on August 27, 2010, and our Quarterly Reports for the quarters ended September 30, 2010, December 31, 2010 and March 31, 2011, filed with the SEC on October 29, 2010, February 8, 2011 and May 5, 2011, respectively, which are incorporated by reference in the prospectus supplement and the accompanying prospectus in their entirety, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operation or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.*

**Risks Related to This Offering**

**We may allocate the net proceeds from this offering in ways that you and other shareholders may not approve.**

We intend to use the net proceeds from this offering for general corporate purposes, which may include:

/*/
research and development expenditures;

/*/
clinical trial expenditures;

/*/
manufacture and supply of drug substance and drug products;

/*/
acquisitions of new technologies, including through in-licensing or collaborations;

/*/
capital expenditures; and

/*/
working capital.

Our management will have broad discretion as to the application of these net proceeds and could use them for purposes other than those contemplated at the time of this offering. In addition, if our management decides to invest all or part of the net proceeds of this offering, such investments may lose all or part of their valve. Our shareholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds from this offering and our management could spend the net proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock.

**You will experience immediate dilution in the book value per share of the common stock you purchase.**

Because the price per share of our common stock being offered is substantially higher than the book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. After giving effect to the sale by us of shares of common stock in this offering, and based on the public offering price of $ per share in this offering and a net tangible book value per share of our common stock of $0.95 as of March 31, 2011, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of $ per share in the as adjusted net tangible book value of our common stock. If the underwriters exercise their over-allotment option you will experience additional dilution. See "Dilution" on page S-13 for a more detailed discussion of the dilution you will incur in connection with this offering.

In addition, we have a significant number of stock options and deferred stock units. To the extent that outstanding stock options have been or may be exercised, outstanding deferred stock units are settled, or other securities are issued, investors purchasing our common stock in this

offering may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders or result in downward pressure on the price of our common stock.

Table of Contents

**Special Note Regarding Forward-Looking Statements**

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements relate to future events and our future financial performance.

These forward-looking statements are identified by their use of terms and phrases, such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "predict," "project," "will," "tracking" and other similar terms and phrases, including references to assumptions. These statements are contained in the "Risk Factors" section, as well as other sections of this prospectus supplement.

Forward-looking statements in this prospectus supplement include, but are not limited to:

/*/

our and our collaborators' expectations regarding clinical trials, development timelines, regulatory filings and market potential for, IMGN901, IMGN388, IMGN529, IMGN853, T-DM1, SAR3419, SAR650984, SAR566658, BT-062 and other drug candidates in research or under development by us and our collaborators;

/*/

Roche's plans to submit a marketing application to the FDA for T-DM1 for the treatment of second-line and later HER2+ metastatic BC in the United States;

/*/

our beliefs regarding the timing of Roche receiving marketing approval for T-DM1;

/*/

Roche's expectations regarding receiving trial results and interim data relating to trials for T-DM1;

/*/

Roche's expectation regarding commencement of additional clinical trials;

/*/

expectations regarding Roche's ability to file a marketing application for T-DM1 as second-line treatment in HER2+ metastatic BC with the FDA and in the European Union during 2012 and as a first-line treatment with the FDA in 2014;

/*/

our belief that T-DM1 has the potential to be a valuable new pharmaceutical for the treatment of patients with HER2+ metastatic BC and that lorvotuzumab mertansine has the potential to be the first effective antibody-based therapy for certain targeted cancers;

/*/

our plans relating to clinical trial timing, clinical trial design and the route to market for lorvotuzumab mertansine;

/*/

our expectations regarding reporting interim data from one or more of our clinical trials of lorvotuzumab mertansine;

/*/

our expectations and those of our collaboration partners to report data on ongoing clinical trials with respect to our other product candidates at medical conferences and other venues through 2011 and 2012;

/*/

our expectations regarding the advancement of six compounds into clinical testing in 2011 and 2012 through our collaborations and with respect to our wholly owned programs;

/*/

our expectations regarding the potential uses of our TAP technology in enabling effective antibody-based therapies to be developed for many more types of cancers and our ability to conduct numerous clinical trials for existing and new product candidates in the future;

/*/

our expectations regarding our operating and capital requirements;

/*/

our expectation of the amount and timing of future revenues, potential development, clinical and regulatory milestones, expenses, dividends, investments and other items affecting the results of our operations; and

/*/

our expected uses of the net proceeds from this offering.

These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from those contemplated by our forward-looking statements. These known and unknown risks, uncertainties and other factors are described in detail in the "Risk Factors" section and in other sections of this prospectus supplement and our Annual Report on Form 10-K for the fiscal year ended June 30, 2010 and our subsequent Quarterly Reports on Form 10-Q. We disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Table of Contents

**Use of Proceeds**

We estimate that the net proceeds we will receive from this offering, based on the public offering price of $ per share, will be approximately $ million, after deducting the underwriting discounts and commission and estimated offering expenses payable by us, or approximately $ million if the underwriters exercise their over-allotment option in full.

We intend to use the net proceeds from this offering for our operations, including, but not limited to, general corporate purposes, which may include research and development expenditures, clinical trial expenditures, manufacture and supply of drug substance and drug products, acquisitions of new technologies, capital expenditures and working capital.

We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. The amounts and timing of these expenditures will depend on a number of factors, such as whether and when we receive any regulatory approvals for our product candidates, our ability to enter into additional collaboration, licensing or similar transactions, the timing and progress of our research and development efforts, technological advances and the competitive environment for our product candidates. As a result, our management will have broad discretion to allocate the net proceeds from this offering. We have no current plans, commitments or agreements with respect to any acquisitions and may not make any acquisitions. Pending application of the net proceeds as described above, we intend to invest the net proceeds of the offering in short-term, investment-grade, interest-bearing securities.

Table of Contents

**Dilution**

If you purchase our common stock in this offering, your interest will be diluted to the extent of the difference between the public offering price per share and the net tangible book value per share of our common stock after this offering. We calculate net tangible book value per share by subtracting our total liabilities from our total tangible assets and dividing the difference by the number of outstanding shares of our common stock. Total tangible assets excludes deferred debt costs included in other assets on our condensed consolidated balance sheets at March 31, 2011.

Our net tangible book value at March 31, 2011 was $64.8 million, or $0.95 per share, based on 68.1 million shares of our common stock outstanding as of that date. After giving effect to the sale of shares of common stock by us at the public offering price of $ per share, less the underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value at March 31, 2011 would have been $ million, or $ per share. This represents an immediate increase in the as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to investors in this offering. The following table illustrates this per share dilution:

| | | |
|---|---|---|
| Public offering price per share | | $ |
| Net tangible book value per share as of March 31, 2011 | $ 0.95 | |
| Increase in net tangible book value per share attributable to new investors purchasing shares in this offering | $ | |
| As adjusted net tangible book value per share after this offering | | $ |
| Dilution per share to new investors purchasing shares in this offering | | $ |

If the underwriters exercise their over-allotment option in full, the as adjusted net tangible book value would increase to approximately $ million, or $ per share, representing an increase in net tangible book value per share to existing stockholders of approximately $ per share, and there would be an immediate dilution of approximately $ per share to new investors.

The above discussion and table are based on 68,120,705 shares of common stock outstanding as of March 31, 2011 and do not include:

/*/

6,849,844 shares of our common stock issuable upon exercise of stock options outstanding as of March 31, 2011 under our stock option plans as of that date, at a weighted average exercise price of $6.63;

/*/

262,860 shares of our common stock issuable upon redemption of deferred stock units by non-employee directors as of March 31, 2011; and

/*/

4,508,547 shares of our common stock available as of March 31, 2011 for future grant or issuance pursuant to our stock-based plans for employees, directors and consultants.

To the extent that outstanding options are exercised or outstanding deferred stock units are settled, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders.

Table of Contents

**Price Range of Common Stock**

Our common stock is listed on The NASDAQ Global Select Market under the symbol "IMGN." The last reported sale price for our common stock on May 18, 2011 was $13.06 per share. The table below sets forth closing information on the range of high and low closing prices for our common stock during the periods indicated.

| | High | Low |
|---|---|---|
| **Fiscal Year ended June 30, 2009** | | |
| First Quarter | $ 5.64 | $ 3.09 |
| Second Quarter | 4.66 | 2.95 |
| Third Quarter | 7.10 | 3.98 |
| Fourth Quarter | 8.65 | 6.57 |
| **Fiscal Year ended June 30, 2010** | | |
| First Quarter | $ 9.99 | $ 7.14 |
| Second Quarter | 8.89 | 6.69 |
| Third Quarter | 8.27 | 6.35 |
| Fourth Quarter | 10.46 | 7.79 |
| **Fiscal Year ended June 30, 2011** | | |
| First Quarter | $ 9.77 | $ 5.16 |
| Second Quarter | 9.94 | 6.24 |
| Third Quarter | 9.85 | 8.26 |
| Fourth Quarter (through May 18, 2011) | 13.58 | 8.98 |

**Dividend Policy**

We have never declared or paid any cash dividends on our common stock, and we currently expect that future earnings, if any, will be retained for use in our business. Accordingly, we do not expect to pay cash dividends on our common stock in the foreseeable future.

Table of Contents

## Underwriting

Subject to the terms and conditions set forth in the underwriting agreement dated May , 2011, between us and the underwriters named below, we have agreed to sell to the underwriters and the underwriters have severally agreed to purchase from us the number of shares of common stock indicated in the table below:

| Underwriters | Number of Shares |
|---|---|
| Jefferies & Company, Inc. | |
| Oppenheimer & Co. Inc. | |
| RBC Capital Markets, LLC | |
| William Blair & Company, LLC | |
| Canaccord Genuity Inc. | |
| Morgan Joseph TriArtisan LLC | |
| Total | |

Jefferies & Company, Inc. is acting as sole book-running manager of this offering and as representative of the underwriters named above.

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares if any of them are purchased, except as described below under "Option to Purchase Additional Shares." If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that they currently intend to make a market in the shares. However, the underwriters are not obligated to do so and may discontinue any market-making activities at any time without notice. No assurance can be given as to the liquidity of the trading market for the shares.

The underwriters are offering the shares subject to their acceptance of the shares from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

### Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of $ per share. After the offering, the public offering price and concession may be reduced by the representative. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus supplement.

Table of Contents

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

| | Per Share | Total Without Option to Purchase Additional Shares | Total With Option to Purchase Additional Shares |
|---|---|---|---|
| Public offering price | $ | $ | $ |
| Underwriting discounts and commissions paid by us | $ | $ | $ |
| Proceeds to us, before expenses | $ | $ | $ |

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $315,000.

**Listing**

Our shares are listed on The NASDAQ Global Select Market under the trading symbol "IMGN".

**Option to Purchase Additional Shares**

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to an aggregate of additional shares of common stock at the public offering price set forth on the cover page of this prospectus supplement, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus supplement.

**No Sales of Similar Securities**

We have agreed, subject to certain exceptions, including relating to issuances of stock upon exercise of stock options and limited issuances to collaborators, vendors, manufacturers, distributors, customers or other similar parties, that we will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of, directly or indirectly, or file with the SEC a registration statement under the Securities Act of 1933, as amended, relating to, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock, whether any such transaction described in clauses (i) and (ii) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, without the prior written consent of Jefferies & Company, Inc. for a period of 90-days after the date of this prospectus supplement.

In addition, our directors and executive officers have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which these persons, with limited exceptions, for a period of 90-days after the date of this prospectus supplement, may not, without the prior written consent of Jefferies & Company, Inc., (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer

Table of Contents

or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing (including, without limitation, common stock which may be deemed to be beneficially owned by such directors and executive officers in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant), (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock, or (iii) make any demand for or exercise any right with respect to the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock, whether any such transaction described in clauses (i) and (ii) above is to be settled by delivery of common stock or such other securities, in cash or otherwise.

The foregoing restrictions will not apply to the transfers of or sale of shares of our common stock by our directors and executive officers, among other exceptions, pursuant to (i) any preexisting contract, instruction or plan meeting the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, or 10b5-1 Plan, or (ii) a 10b5-1 Plan established by one of our executive officers after the date of this prospectus supplement, pursuant to which such executive officer may transfer or sell up to 50,000 shares of our common stock during the 90-day restricted period.

These restrictions on us and each of our executive officers and directors terminate after the close of trading of the shares of common stock on and including the 90-days after the date of this prospectus supplement. However, subject to certain exceptions, in the event that either:

/*/

during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to us occurs, or prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day restricted period,

/*/

then in either case the expiration of the 90-day restricted period will be extended until the expiration of the 18-day period beginning on the date of the issuance of an earnings release or the occurrence of the material news or event, as applicable, unless Jefferies & Company, Inc. waives, in writing, such an extension.

Jefferies & Company, Inc. may, in its sole discretion and at any time or from time to time before the termination of the 90-day period, without public notice, release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our stockholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

**Stabilization**

The underwriters have advised us that, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in transactions, including over-allotment, stabilizing bids, syndicate covering transactions or the imposition of penalty bids, which may have the effect of stabilizing or maintaining the market price of our common stock at a level above that which might otherwise prevail in the open market. Over-allotment involves syndicate sales in excess of the offering size, which creates a syndicate short position. Establishing short sales positions may involve either "covered" short sales or "naked" short sales. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares of common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of common stock or purchasing shares of common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares. "Naked" short sales are sales in excess of the option to purchase additional shares of common stock. The underwriters must

Table of Contents

close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of common stock in the open market after pricing that could adversely affect investors who purchase in this offering. A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the shares of common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the shares of common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member. Neither we nor any of the underwriters makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

**Electronic Distribution**

This prospectus supplement and the accompanying prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than this prospectus supplement and the accompanying prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus supplement or the accompanying prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

**Affiliations**

Certain of the underwriters and their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve our securities and/or instruments. The underwriters and certain of their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Table of Contents

## Notice to Investors

**European Economic Area**

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (as defined below) (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, or the Relevant Implementation Date, an offer of our common stock to the public may not be made in that Relevant Member State prior to the publication of a prospectus in relation to our common stock which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive if they have been implemented in the Relevant Member State:

a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;

b) to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000 and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;

c) to fewer than 100 natural or legal persons per Relevant Member State (other than qualified investors as defined in the Prospectus Directive); or

d) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of our common stock to the public" in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common stock to be offered so as to enable an investor to decide to purchase or subscribe for our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression "Prospectus Directive" means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

**United Kingdom**

Shares of our common stock may not be offered or sold and will not be offered or sold to any persons in the United Kingdom other than to persons whose ordinary activities involve them acquiring, holding, managing or disposing of investments (as principal or as agent) for the purposes of their businesses or otherwise in circumstances which have not resulted or will not result in an offer to the public in the United Kingdom within the meaning of the Financial Services and Markets Act 2000, or the FSMA.

In addition, any invitation or inducement to engage in investment activity (within the meaning of section 21 of the FSMA) in connection with the issue or sale of shares of our common stock may only be communicated or caused to be communicated in circumstances in which Section 21(1) of the FSMA does not apply to us. Without limitation to the other restrictions referred to herein, this prospectus supplement and the accompanying prospectus are directed only at (1) persons outside the United Kingdom or (2) persons who:

a) are qualified investors as defined in section 86(7) of FSMA, being persons falling within the meaning of article 2.1(e)(i), (ii) or (iii) of the Prospectus Directive; and

Table of Contents

b) are either persons who fall within article 19(1) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or Order, or are persons who fall within article 49(2)(a) to (d) ("high net worth companies, unincorporated associations, etc.") of the Order; or

c) to whom it may otherwise lawfully be communicated in circumstances in which Section 21(1) of the FSMA does not apply.

Without limitation to the other restrictions referred to herein, any investment or investment activity to which this prospectus supplement and the accompanying prospectus relate is available only to, and will be engaged in only with, such persons, and persons within the United Kingdom who receive this communication (other than persons who fall within (2) above) should not rely or act upon this communication.

**Italy**

This prospectus supplement and the accompanying prospectus have not been and will not be filed with or cleared by the Italian securities exchange commission (Commissione Nazionale per le societa e la Borsa, or the CONSOB) pursuant to Legislative Decree No. 58 of 24 February 1998 (as amended, the Finance Law) and to CONSOB Regulation No. 11971 of 14 May 1999 (as amended, the Issuers Regulation). Accordingly, copies of this prospectus supplement and the accompanying prospectus or any other document relating to our common stock may not be distributed, made available or advertised in Italy, nor may our common stock be offered, purchased, sold, promoted, advertised or delivered, directly or indirectly, to the public other than (i) to Professional Investors (such being the persons and entities as defined pursuant to article 31(2) of CONSOB Regulation No. 11522 of 1 July 1998, as amended, the Intermediaries Regulation) pursuant to article 100 of the Finance Law; (ii) to prospective investors where the offer of our common stock relies on the exemption from the investment solicitation rules pursuant to, and in compliance with, the conditions set out by article 100 of the Finance Law and article 33 of the Issuers Regulation, or by any applicable exemption; provided that any such offer, sale, promotion, advertising or delivery of our common stock or distribution of this prospectus supplement and the accompanying prospectus, or any part thereof, or of any other document or material relating to our common stock in Italy is made: (a) by investment firms, banks or financial intermediaries authorized to carry out such activities in the Republic of Italy in accordance with the Finance Law, the Issuers Regulation, Legislative Decree No. 385 of 1 September 1993, as amended, the Intermediaries Regulation, and any other applicable laws and regulations; and (b) in compliance with any applicable notification requirement or duty which may, from time to time, be imposed by CONSOB, Bank of Italy or by any other competent authority.

**Germany**

Any offer or solicitation of securities within Germany must be in full compliance with the German Securities Prospectus Act (Wertpapierprospektgesetz, or the WpPG). The offer and solicitation of securities to the public in Germany requires the publication of a prospectus that has to be filed with and approved by the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, or the BaFin). This prospectus supplement and the accompanying prospectus have not been and will not be submitted for filing and approval to the BaFin and, consequently, will not be published. Therefore, this prospectus supplement and the accompanying prospectus do not constitute a public offer under the WpPG. This prospectus supplement, the accompanying prospectus and any other document relating to our common stock, as well as any information contained therein, must therefore not be supplied to the public in Germany or used in connection with any offer for subscription of our common stock to the public in Germany, any public marketing of our common stock or any public solicitation for offers to subscribe for or otherwise acquire our common stock. This prospectus supplement, the accompanying prospectus and other

Table of Contents

offering materials relating to the offer of our common stock are strictly confidential and may not be distributed to any person or entity other than the designated recipients hereof.

**France**

This prospectus supplement and the accompanying prospectus have not been prepared in the context of a public offering of financial securities in France within the meaning of Article L.411-1 of the French Code Monétaire et Financier and Title I of Book II of the Règlement Général of the Autorité des marchés financiers, or the AMF, and therefore has not been and will not be filed with the AMF for prior approval or submitted for clearance to the AMF. Consequently, the shares of our common stock may not be, directly or indirectly, offered or sold to the public in France and offers and sales of the shares of our common stock may only be made in France to qualified investors (investisseurs qualifiés) acting for their own, as defined in and in accordance with Articles L.411-2 and D.411-1 to D.411-4, D.734-1, D.744-1, D.754-1 and D.764-1 of the French Code Monétaire et Financier. None of this prospectus supplement, the accompanying prospectus or any other offering material may be released, issued or distributed to the public in France or used in connection with any offer for subscription on sale of the shares of our common stock to the public in France. The subsequent direct or indirect retransfer of the shares of our common stock to the public in France may only be made in compliance with Articles L.411-1, L.411-2, L.412-1 and L.621-8 through L.621-8-3 of the French Code Monétaire et Financier.

**Sweden**

This is not a prospectus under, and has not been prepared in accordance with the prospectus requirements provided for in, the Swedish Financial Instruments Trading Act (lagen (1991:980) om handel med finasiella instrument) nor any other Swedish enactment. Neither the Swedish Financial Supervisory Authority nor any other Swedish public body has examined, approved, or registered this document.

**Switzerland**

The shares of our common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares of our common stock or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Issuer, the shares of our common stock have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares of our common stock will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA and the offer of shares of our common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares of our common stock.

**Hong Kong**

No shares of our common stock have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies

Table of Contents

Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus supplement has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus supplement may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus supplement and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

**Singapore**

This prospectus supplement has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

a)
a corporation (which is not an accredited investor as defined under Section 4A of the SFA) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

b)
a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor,

shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the Offer Shares under Section 275 of the SFA except:

i)
to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than $200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions, specified in Section 275 of the SFA;

ii)
where no consideration is given for the transfer; or

iii)
where the transfer is by operation of law.

Table of Contents

## Legal Matters

The validity of the shares of common stock offered hereby will be passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts. Latham & Watkins LLP, San Diego, California will act as counsel to the underwriters in connection with this offering.

## Experts

The consolidated financial statements of ImmunoGen, Inc. appearing in ImmunoGen, Inc.'s Annual Report (Form 10-K) for the year ended June 30, 2010 (including the schedule appearing therein), and the effectiveness of ImmunoGen, Inc.'s internal control over financial reporting as of June 30, 2010 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements and schedule are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

Table of Contents

## 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*.

This prospectus supplement and the accompanying prospectus are 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 omit certain information contained in the registration statement. We have also filed exhibits and schedules with the registration statement that are excluded from this prospectus supplement, 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 supplement.

## 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 supplement by referring to those documents. The information incorporated by reference is considered to be part of this prospectus supplement, and information that we file later with the SEC will automatically update and supersede the information in this prospectus supplement. We incorporate by reference the following documents (unless otherwise noted, the SEC file number for each of the documents listed below is 000-17999):

/*/ our Annual Report on Form 10-K, for the fiscal year ended June 30, 2010, filed with the SEC on August 27, 2010;

/*/ our Quarterly Report on Form 10-Q, for the quarterly period ended September 30, 2010, filed with the SEC on October 29, 2010;

/*/ our Quarterly Report on Form 10-Q, for the quarterly period ended December 31, 2010, filed with the SEC on February 8, 2011;

/*/ our Quarterly Report on Form 10-Q, for the quarterly period ended March 31, 2011, filed with the SEC on May 5, 2011;

/*/ our Current Report on Form 8-K filed with the SEC on July 7, 2010;

/*/ our Current Report on Form 8-K filed with the SEC on September 24, 2010;

/*/ our Current Report on Form 8-K filed with the SEC on November 18, 2010;

/*/ our Current Report on Form 8-K filed with the SEC on December 3, 2010;

/*/

our Current Report on Form 8-K filed with the SEC on December 23, 2010;

/*/

our Current Report on Form 8-K furnished to the SEC on February 22, 2011;

/*/

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 4, 2010;

/*/

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; and

Table of Contents

/*/

all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this prospectus supplement and prior to the termination of this offering (except for information contained in any such filing where we indicate that such information is being furnished and/or is not considered "filed" under the Securities Exchange Act of 1934, as amended) shall be deemed to be incorporated by reference in this prospectus supplement and to be a part hereof from the date of filing such reports and other documents.

We will provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus supplement 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, 830 Winter Street, Waltham, Massachusetts 02451, (781) 895-0600.

Table of Contents

**PROSPECTUS**

# COMMON STOCK
# PREFERRED STOCK
# DEBT SECURITIES
# WARRANTS
# UNITS

This prospectus will allow us to issue, from time to time at prices and on terms to be determined at or prior to the time of the offering, any combination of the securities in this prospectus, either individually or in units. We may also offer common stock or preferred stock upon conversion of the debt securities, common stock upon conversion of the preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants. In addition, this prospectus may be used to offer securities for the account of persons other than us. We will provide you with specific terms of any offering in one or more supplements to this prospectus. This prospectus may not be used to offer or sell our securities unless accompanied by a prospectus supplement. You should read this prospectus and any prospectus supplement, as well as any documents incorporated by reference into this prospectus or any prospectus supplement, carefully before you invest.

Our common stock is listed on The NASDAQ Global Select Market under the symbol "IMGN." On May 18, 2011, the last reported sale price of our common stock was $13.06 per share. Prospective purchasers of our securities are urged to obtain current information as to the market prices of our securities, where applicable.

**Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, 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."**

Our securities may be sold directly to investors, through agents designated from time to time or to or through underwriters or dealers. If any underwriters are involved in the sale of our securities 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 securities 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 May 19, 2011.

Table of Contents

**TABLE OF CONTENTS**

Table of Contents

## 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, shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in units, may be offered in one or more offerings. This prospectus provides you with a general description of the securities that may be offered. Each time a type or series of securities is offered under this prospectus, 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 offer a security that is not registered and described in this prospectus. 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 supplements, the information and documents incorporated herein and therein 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 or any applicable prospectus supplement. 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 or any applicable prospectus supplement. 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 and therein 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 applicable prospectus supplement or any sale of a security.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus or any applicable prospectus supplement were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

This prospectus may not be used to consummate sales of our securities, 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.

Table of Contents

## PROSPECTUS SUMMARY

*The following is a summary of our business and the offering of our securities under this prospectus. We urge you to read this entire prospectus, including the more detailed consolidated financial statements, notes to the consolidated financial statements and other information incorporated by reference from our other filings with the SEC or included in any applicable prospectus supplements. Investing in our securities involves risks. Therefore, carefully consider the risk factors in any prospectus supplements and in our most recent annual and quarterly filings with the SEC, as well as other information in this prospectus and any prospectus supplements and the documents incorporated by reference herein or therein, before purchasing our securities. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities.*

**About ImmunoGen, Inc.**

Since our inception, we have been principally engaged in the development of novel, targeted therapeutics for the treatment of cancer using our expertise in cancer biology, manufactured antibodies, highly potent small-molecule cytotoxic, or cell-killing, agents and designing engineered linkers. Our Targeted Antibody Payload, or TAP, technology uses antibodies to deliver a potent cytotoxic agent specifically to targeted cancer cells to minimize damage to healthy tissue. A TAP compound consists of a tumor-targeting manufactured antibody with one of our proprietary cell-killing agents attached using one of our engineered linkers. The antibody component enables a TAP compound to bind specifically to cancer cells that express its target antigen, the highly potent cytotoxic agent serves to kill the cancer cell and the engineered linker controls the release of the cytotoxic agent inside the cancer cell. We use our expertise and proprietary technologies to develop targeted anticancer compounds for our own product pipeline. We also establish partnerships with other companies around our TAP technology and antibody expertise.

The most advanced TAP compound is trastuzumab emtansine, which is also known as T-DM1. T-DM1 is in advanced clinical testing for the treatment of HER2+ metastatic breast cancer through our collaboration with Genentech, Inc., a member of the Roche Group, which licensed the exclusive right to use certain of our cell-killing agents with antibodies that target HER2. Four other compounds SAR3419, SAR566658, SAR650984 and BT-062 are in early clinical testing through our collaborations with Sanofi (3) and Biotest AG (1), respectively. SAR650984 is a non-conjugated therapeutic, or "naked," antibody compound, and the other three drug candidates are TAP compounds.

Our lead wholly owned drug candidate is lorvotuzumab mertansine, or IMGN901, which is a TAP compound in early clinical testing for the treatment of CD56-expressing cancers, including small-cell lung cancer, Merkel cell carcinoma and multiple myeloma. Our earlier-stage drug candidate, IMGN388, is a TAP compound in initial clinical testing for the treatment of solid tumors. Our lead preclinical compounds are IMGN529 and IMGN853, which are potential new therapies for non-Hodgkin's lymphoma and for ovarian and other folate receptor 1-overexpressing cancers, respectively. We have additional targeted, antibody-based compounds in our research pipeline.

We were organized as a Massachusetts corporation in March 1981. Our principal offices are located at 830 Winter Street, Waltham, MA 02451, and our telephone number is (781) 895-0600. 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 prospectus.

Table of Contents

## RISK FACTORS

Investing in our securities involves risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in us. Prior to making a decision about investing in our securities, 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. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The SEC encourages companies to disclose forward-looking information so that investors can better understand a company's future prospects and make informed investment decisions. This prospectus and the documents we have filed with the SEC that are incorporated herein by reference contain such "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995.

Words such as "may," "anticipate," "estimate," "expects," "projects," "intends," "plans," "believes," "tracking" and words and terms of similar substance used in connection with any discussion of future operating or financial performance, identify forward-looking statements. Forward-looking statements represent management's present judgment regarding future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. These risks include, but are not limited to, risks and uncertainties regarding our preclinical studies, our ability to conduct clinical trials of our product candidates and the results of such trials, as well as risks and uncertainties relating to litigation, government regulation and third-party reimbursement, economic conditions, markets, products, competition, intellectual property, services and prices, key employees, future capital needs, dependence on our collaborators and their ability to develop TAP compounds and other factors. Please also see the discussion of risks and uncertainties under "Risk Factors" contained in this prospectus and in any supplements to this prospectus and in our most recent annual report on Form 10-K, as revised or supplemented by subsequent quarterly reports on Form 10-Q, as well as any amendments thereto, as filed with the SEC and which are incorporated herein by reference.

In light of these assumptions, risks and uncertainties, the results and events discussed in the forward-looking statements contained in this prospectus or in any document incorporated herein by reference might not occur. Investors are cautioned not to place undue reliance on the forward-looking statements, which speak only as of the date of this prospectus or the date of the document incorporated by reference in this prospectus. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise. All subsequent forward-looking statements attributable to us or to any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section.

## RATIO OF EARNINGS TO FIXED CHARGES

Any time debt securities are offered pursuant to this prospectus, we will provide a table setting forth our ratio of earnings to fixed charges on a historical basis in the applicable prospectus supplement, if required.

Table of Contents

## USE OF PROCEEDS

Except as provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities by us through this prospectus for general corporate purposes. Except as provided in the applicable prospectus supplement, we will not receive any proceeds in the event that securities are sold by a selling securityholder. Additional information on the use of net proceeds from the sale of securities covered by this prospectus may be set forth in the prospectus supplement relating to the specific offering.

## DESCRIPTION OF COMMON STOCK

We are authorized to issue 100,000,000 shares of common stock, par value $.01 per share. On May 18, 2011, we had 68,450,675 shares of common stock outstanding and approximately 487 shareholders of record.

The following summary of certain provisions of our common stock does not purport to be complete. You should refer to our restated articles of organization and our amended and restated by-laws, both of which are included as exhibits to the registration statement we have filed with the SEC in connection with this offering. The summary below is also qualified by provisions of applicable law.

### General

Holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the shareholders, and do not have cumulative voting rights. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by our board of directors out of funds legally available for dividend payments. All shares of common stock outstanding as of the date of this prospectus and, upon issuance and sale, all shares of common stock that we may offer pursuant to this prospectus, will be fully paid and nonassessable. The holders of common stock have no preferences or rights of conversion, exchange, pre-emption or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. In the event of any liquidation, dissolution or winding-up of our affairs, holders of common stock will be entitled to share ratably in our assets that are remaining after payment or provision for payment of all of our debts and obligations and after liquidation payments to holders of outstanding shares of preferred stock, if any.

### Transfer Agent and Registrar

As of the date of this prospectus, the transfer agent and registrar for our common stock is Mellon Investor Services, LLC. We expect that as of May 25, 2011, Broadridge Corporate Issuer Solutions, Inc. will be the transfer agent and registrar of our common stock.

### The NASDAQ Global Select Market

Our common stock is listed for quotation on The NASDAQ Global Select Market under the symbol "IMGN." On May 18, 2011, the last reported sale price of our common stock was $13.06 per share.

Table of Contents

## DESCRIPTION OF PREFERRED STOCK

We are authorized to issue 5,000,000 shares of preferred stock, par value $.01 per share. As of May 18, 2011, no shares of our preferred stock were issued and outstanding. The following summary of certain provisions of our preferred stock does not purport to be complete. You should refer to our restated articles of organization and our amended and restated by-laws, both of which are included as exhibits to the registration statement we have filed with the SEC in connection with this offering. The summary below is also qualified by provisions of applicable law.

### General

Our board of directors may, without further action by our shareholders, from time to time, direct the issuance of shares of preferred stock in series and may, at the time of issuance, determine the rights, preferences and limitations of each series, including voting rights, dividend rights and redemption and liquidation preferences. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of our common stock. Holders of shares of preferred stock may be entitled to receive a preference payment in the event of any liquidation, dissolution or winding-up of our company before any payment is made to the holders of shares of our common stock. In some circumstances, the issuance of shares of preferred stock may render more difficult or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of incumbent management. Upon the affirmative vote of our board of directors, without shareholder approval, we may issue shares of preferred stock with voting and conversion rights which could adversely affect the holders of shares of our common stock.

If a specific series of preferred stock is offered under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the purchase price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price (or how it will be calculated) and exchange period;

voting rights, if any, of the preferred stock;

a discussion of any material and/or special United States federal income tax considerations applicable to the preferred stock;

the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of ImmunoGen; and

any material limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of ImmunoGen.

Table of Contents

## DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that may be offered under this prospectus. While the terms we have summarized below will apply generally to any future debt securities that may be offered pursuant to this prospectus, we will describe the particular terms of any debt securities that may be offered in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any debt securities offered under that prospectus supplement may differ from the terms we describe below, and to the extent the terms set forth in a prospectus supplement differ from the terms described below, the terms set forth in the prospectus supplement shall control.

Under this prospectus, debt securities, which may be senior or subordinated, may be sold from time to time, in one or more offerings. We will issue any such senior debt securities under a senior indenture that we will enter into with a trustee to be named in the senior indenture. We will issue any such subordinated debt securities under a subordinated indenture, which we will enter into with a trustee to be named in the subordinated indenture. We have filed forms of these documents as exhibits to the registration statement, which includes this prospectus. We use the term "indentures" to refer to both the senior indenture and the subordinated indenture. The indentures will be qualified under the Trust Indenture Act of 1939, as in effect on the date of the indenture, or the Trust Indenture Act. We use the term "debenture trustee" to refer to either the trustee under the senior indenture or the trustee under the subordinated indenture, as applicable.

The following summaries of material provisions of the senior debt securities, the subordinated debt securities and the indentures are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities.

### General

Each indenture provides that debt securities may be issued from time to time in one or more series and may be denominated and payable in United States dollars or foreign currencies or units based on or relating to United States dollars or foreign currencies, including euros. Neither indenture limits the amount of debt securities that may be issued thereunder, and each indenture provides that the specific terms of any series of debt securities shall be set forth in, or determined pursuant to, an authorizing resolution and/or a supplemental indenture, if any, relating to such series.

We will describe in each prospectus supplement the following terms relating to a series of debt securities:

- the title;
- the aggregate principal amount and any limit on the amount that may be issued;
- the currency or units based on or relating to currencies in which debt securities of such series are denominated and the currency or units in which principal or interest or both will or may be payable;
- whether we will issue the series of debt securities in global form, the terms of any global securities and who the depositary will be;
- the maturity date and the date or dates on which principal will be payable;
- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the date or dates interest will be payable and the record dates for interest payment dates or the method for determining such dates;

Table of Contents

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

the terms of the subordination of any series of subordinated debt;

the place or places where payments will be payable;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional redemption provisions;

the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities;

whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;

whether we will be restricted from incurring any additional indebtedness;

a discussion on any material or special United States federal income tax considerations applicable to a series of debt securities;

the denominations in which we will issue the series of debt securities, if other than denominations of $1,000 and any integral multiple thereof; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

**Conversion or Exchange Rights**

We will set forth in the prospectus supplement the terms, if any, on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

**Consolidation, Merger or Sale; No Protection in Event of a Change of Control or Highly Leveraged Transaction**

The indentures may not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets will be required to assume all of our obligations under the indentures or the debt securities, as appropriate.

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions that may afford holders of the debt securities protection in the event we have a change of control or in the event of a highly leveraged transaction (whether or not

such transaction results in a change of control), which could adversely affect holders of debt securities.

Table of Contents

**Events of Default Under the Indenture**

The following will be events of default under the indentures with respect to any series of debt securities that we may issue:

- if we fail to pay interest when due and our failure continues for 90 days and the time for payment has not been extended or deferred;
- if we fail to pay the principal, or premium, if any, when due and the time for payment has not been extended or delayed;
- if we fail to observe or perform any other covenant relating to such series contained in the debt securities of such series or the applicable indentures, other than a covenant specifically relating to and for the benefit of holders of another series of debt securities, and our failure continues for 90 days after we receive written notice from the debenture trustee or holders of not less than a majority in aggregate principal amount of the outstanding debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur as to us.

No event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under any bank credit agreements we may have in existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

If an event of default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than a majority in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the debenture trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of and premium and accrued and unpaid interest, if any, on all debt securities of that series. Before a judgment or decree for payment of the money due has been obtained with respect to debt securities of any series, the holders of a majority in principal amount of the outstanding debt securities of that series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) may rescind and annul the acceleration if all events of default, other than the non-payment of accelerated principal, premium, if any, and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the applicable indenture (including payments or deposits in respect of principal, premium or interest that had become due other than as a result of such acceleration). We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an event of default.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the

Table of Contents

debenture trustee or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies if:

- the holder previously has given written notice to the debenture trustee of a continuing event of default with respect to that series;
- the holders of at least a majority in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee to institute the proceeding as trustee; and
- the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series (or at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) other conflicting directions within 60 days after the notice, request and offer.

These limitations will not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the applicable debenture trustee regarding our compliance with specified covenants in the applicable indenture.

**Modification of Indenture; Waiver**

The debenture trustee and we may change the applicable indenture without the consent of any holders with respect to specific matters, including:

- to fix any ambiguity, defect or inconsistency in the indenture; and
- to change anything that does not materially adversely affect the interests of any holder of debt securities of any series issued pursuant to such indenture.

In addition, under the indentures, the rights of holders of a series of debt securities may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) that is affected. However, the debenture trustee and we may make the following changes only with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of the series of debt securities;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or a premium payable upon the redemption of any debt securities;

reducing the principal amount of discount securities payable upon acceleration of maturity;

Table of Contents

making the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment or waiver.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series or in respect of a covenant or provision, which cannot be modified or amended without the consent of the holder of each outstanding debt security of the series affected; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

**Discharge**

Each indenture will provide that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for obligations to:

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

compensate and indemnify the trustee; and

appoint any successor trustee.

In order to exercise our rights to be discharged with respect to a series, we will have to deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

**Form, Exchange, and Transfer**

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of $1,000 and any integral multiple thereof. The indentures provide that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company or another depositary named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities

Table of Contents

for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange or in the applicable indenture, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

**Information Concerning the Debenture Trustee**

The debenture trustee other than during the occurrence and continuance of an event of default under the applicable indenture, will undertake to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee under such indenture must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

**Payment and Paying Agents**

Unless we indicate otherwise in the applicable prospectus supplement, on any interest payment date, we will pay the interest on any debt securities to the person in whose name such debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, will we make interest payments by check which we will mail to the holder. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the debenture trustee in the City of New York as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment thereof.

Table of Contents

**Governing Law**

The indentures and the debt securities will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

**Subordination of Subordinated Debt Securities**

Our obligations pursuant to any subordinated debt securities will be unsecured and will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The subordinated indenture does not limit the amount of senior indebtedness we may incur. It also does not limit us from issuing any other secured or unsecured debt.

## DESCRIPTION OF WARRANTS

Warrants to purchase shares of our common stock, preferred stock and/or debt securities in one or more series together with other securities or separately may be offered, as described in the applicable prospectus supplement. Below is a description of certain general terms and provisions of the warrants that may be offered. Particular terms of the warrants will be described in the warrant agreements and the prospectus supplement to the warrants.

The applicable prospectus supplement will contain, where applicable, the following terms of and other information relating to the warrants:

- the specific designation and aggregate number of, and the price at which the warrants will be issued;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for shares of our common stock and the number of shares of common stock to be received upon exercise of the warrants;
- if applicable, the exercise price for shares of our preferred stock, the number of shares of preferred stock to be received upon exercise, and a description of that series of our preferred stock;
- if applicable, the exercise price for our debt securities, the amount of debt securities to be received upon exercise, and a description of that series of debt securities;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material United States federal income tax consequences;

if applicable, the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;

the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;

Table of Contents

if applicable, the date from and after which the warrants and the common stock, preferred stock and/or debt securities will be separately transferable;

if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;

information with respect to book-entry procedures, if any;

the anti-dilution provisions of the warrants, if any;

any redemption or call provisions of the warrants, if any;

whether the warrants are to be sold separately or with other securities as parts of units; and

any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

## DESCRIPTION OF UNITS

Units consisting of common stock, preferred stock, debt securities and/or warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series may be offered. In this prospectus, we have summarized certain general features of the units. We urge you, however, to read the prospectus supplements related to the series of units being offered, as well as the unit agreements that contain the terms of the units. We will file as exhibits to an amendment to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, as applicable, the form of unit agreement and any supplemental agreements that describe the terms of the series of units being offered before the issuance of the related series of units.

We may evidence each series of units by unit certificates that would issue under a separate agreement that we may enter into with a unit agent. Each unit agent, if one is appointed, will be a bank or trust company that we select. We will indicate the name and address of the unit agent, if one is appointed, in the applicable prospectus supplement relating to a particular series of units.

## SELLING SECURITYHOLDERS

Selling securityholders are persons or entities that, directly or indirectly, have acquired or will from time to time acquire, securities in various private or other transactions. Such selling securityholders may be parties to registration rights agreements with us, or we otherwise may have agreed or will agree to register their securities for resale. The purchasers of our securities, as well as their transferees, pledges, donees or successors, all of whom we refer to as "selling securityholders," may from time to time offer and sell the securities pursuant to this prospectus and any applicable prospectus supplement. The applicable prospectus supplement will set forth the name of each of the selling securityholders and the number of shares of our common stock or other relevant securities beneficially owned by such selling securityholders that are covered by such prospectus supplement.

Table of Contents

## CERTAIN PROVISIONS OF MASSACHUSETTS LAW AND OF THE COMPANY'S ARTICLES OF ORGANIZATION AND BY-LAWS

**Anti-Takeover Provisions under Massachusetts law and our Massachusetts Articles of Organization and By-laws**

Provisions of Massachusetts law and our restated articles of organization and amended and restated by-laws contain other provisions that are intended to enhance the likelihood of continuity and stability in the composition of the board of directors and which may have the effect of delaying, deferring or preventing a future takeover or change in control of our company unless such takeover or change in control is approved by our board of directors.

These provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

*Massachusetts statutory business combinations provisions.* We are subject to Chapter 110F of the Massachusetts General Laws, an anti-takeover law. In general, this statute prohibits a publicly-held Massachusetts corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person becomes an interested stockholder, unless (i) the interested stockholder obtains the approval of the board of directors prior to becoming an interested stockholder, (ii) the interested stockholder acquires 90% of the outstanding voting stock of the corporation (excluding shares held by certain affiliates of the corporation) at the time it becomes an interested stockholder, or (iii) the business combination is approved by both the board of directors and the holders of two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested stockholder). Generally, an "interested stockholder" is a person who, together with affiliates and associates, owns (or at any time within the prior three years did own) 5% or more of the outstanding voting stock of the corporation. A "business combination" includes a merger, a stock or asset sale, and certain other transactions resulting in a financial benefit to the interested shareholders.

Massachusetts General Laws Chapter 110D, entitled "Regulation of Control Share Acquisitions," in general provides that any shareholder of a company subject to this statute who acquires 20% or more of the outstanding voting stock of a company may not vote such stock unless the shareholders of the company so authorize. Although our amended and restated by-laws currently exclude us from this statute, the board of directors may amend our by-laws to subject us to this statute prospectively.

Chapter 110C of the Massachusetts General Laws requires the person commencing a takeover bid to file certain information with the Secretary of the Commonwealth and the target company and provides that a bidder who fails to disclose its intent to gain control over a target corporation prior to acquiring 5% of the target company's stock is precluded from making any takeover bid for a period of one year after crossing the 5% threshold.

*Blank check preferred stock.* Our restated article of organization allows our board of directors to issue shares of preferred stock without the approval of our shareholders, which is referred to as "blank check" preferred stock. The effects of such issuance, among other things, could include the dilution in the voting power of our common stock if the preferred stock has voting rights and the reduction or restriction in the rights of holders of our common stock to receive a payment in the event of any liquidation, dissolution or winding-up of our company. In some circumstances, the issuance of shares of preferred stock may render more difficult or expensive or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of

Table of Contents

incumbent management. In addition, the board of directors could also utilize the shares of preferred stock in order to adopt a shareholder rights plan, or "poison pill," which could have the effect of discouraging or delaying a takeover of the company.

*Advance notice provisions for shareholder proposals and shareholder nominations of directors.* Our amended and restated by-laws provide that, for nominations to the board of directors or for other business to be properly brought by a shareholder before a meeting of shareholders, the shareholder must first have given timely notice of the proposal in writing to our Secretary. For an annual meeting, a shareholder's notice generally must be delivered not less than 45 days nor more than 75 days prior to the anniversary of the mailing date of the proxy statement for the previous year's annual meeting. For special meetings called to elect directors, a shareholder's notice must generally be delivered not less than 60 days (or ten days after public disclosure of the meeting date if later) nor more than 90 days prior to the meeting. Detailed requirements as to the form of the notice and information required in the notice are specified in the amended and restated by-laws. If it is determined that business was not properly brought before a meeting in accordance with our amended and restated by-laws, such business will not be conducted at the meeting. Although our by-laws do not give our board of directors the power to approve or disapprove shareholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, our by-laws may have the effect of precluding the conduct of some business at a meeting if the proper procedures are not followed or may discourage or defer a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of us.

*Classified board of directors.* Section 8.06(b) of the Massachusetts Business Corporation Act provides that unless a company decides otherwise, the terms of directors of a public Massachusetts company shall be staggered by dividing the directors into three groups, as nearly equal in number as possible, with only one group of directors being elected each year. Sections 8.06(d) and (e) of the Massachusetts Business Corporation Act provide that when directors are so classified, (i) shareholders may remove directors only for cause, (ii) the number of directors shall be fixed only by the vote of the board of directors, (iii) vacancies and newly created directorships shall be filled solely by the affirmative vote of a majority of the remaining directors and (iv) a decrease in the number of directors will not shorten the term of any incumbent director. Our board of directors opted out of this staggered board of directors requirement, and all of our directors currently serve for one-year terms and are elected annually. Under Section 8.06(c)(2) of the Massachusetts Business Corporation Act, our board of directors may opt into the staggered board of directors requirements of Section 8.06(b) and application of Sections 8.06(d) and (e). If the board of directors opts into this structure, these provisions are likely to increase the time required for shareholders to change the composition of the board of directors. For example, in general, at least two annual meetings would be necessary for shareholders to effect a change in a majority of the members of the board of directors. The provision for a classified board could prevent a party who acquires control of a large portion of our outstanding common stock from obtaining control of our board of directors until our second annual shareholders meeting following the date the acquirer obtains the stock interest. The classified board provision could have the effect of discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us and could increase the likelihood that incumbent directors will retain their positions.

*Shareholder can only act by unanimous written consent and restrictions on who can call a special meeting of shareholders.* Although our restated articles of organization and amended and restated by-laws allow our shareholders to act by written consent, such written consent must be signed by all shareholders entitled to vote on the matter approved. This significantly restricts the ability of our shareholders to act by written consent and essentially provides that our shareholders may only act at a duly called shareholders meeting. In addition, special meetings of the shareholders may be called only by our President, our board of directors and one or more shareholders holding at least 40% of our voting stock.

Table of Contents

**Limitations on Liability and Indemnification of Officers and Directors**

Our restated articles of organization and amended and restated by-laws limit the liability of our officers and directors to the fullest extent permitted by the Massachusetts Business Corporation Act and provides that we will indemnify them to the fullest extent permitted by such law.

## LEGAL MATTERS

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

## EXPERTS

The consolidated financial statements of ImmunoGen, Inc. appearing in ImmunoGen, Inc.'s Annual Report (Form 10-K) for the year ended June 30, 2010, (including the schedule appearing therein) and the effectiveness of ImmunoGen, Inc.'s internal control over financial reporting as of June 30, 2010 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements and schedule are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We 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 Select Market, and you can read and inspect our filings at the offices of the Financial Industry Regulatory Authority 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.

Table of Contents

## INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information that we file with them. Incorporation by reference allows us to disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. Statements in this prospectus regarding the provisions of certain documents filed with, or incorporated by reference in, the registration statement are not necessarily complete and each statement is qualified in all respects by that reference. Copies of all or any part of the registration statement, including the documents incorporated by reference or the exhibits, may be obtained upon payment of the prescribed rates at the offices of the SEC listed above in "Where You Can Find More Information." The documents we are incorporating by reference are:

- our annual report on Form 10-K for the fiscal year ended June 30, 2010 filed on August 27, 2010;
- our quarterly report on Form 10-Q for the fiscal quarter ended September 30, 2010 filed on October 29, 2010;
- our quarterly report on Form 10-Q for the fiscal quarter ended December 31, 2010 filed on February 8, 2011;
- our quarterly report on Form 10-Q for the fiscal quarter ended March 31, 2011 filed on May 5, 2011;
- our current report on Form 8-K filed on July 7, 2010;
- our current report on Form 8-K filed on September 24, 2010;
- our current report on Form 8-K filed on November 18, 2010;
- our current report on Form 8-K filed on December 3, 2010;
- our current report on Form 8-K filed on December 23, 2010;
- the portions of our definitive proxy statement on Schedule 14A filed on October 4, 2010 that are deemed "filed" with the SEC under the Securities Exchange Act of 1934, as amended; and
- 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 amendment or reports filed for the purpose of updating such description.

The SEC file number for each of the documents listed above is 001-17999.

In addition, all documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, before the date any offering under this prospectus is terminated or completed are deemed to be incorporated by reference into, and to be a part of, this prospectus (except for information contained in any such filing where we indicate that such information is being furnished and/or is not considered "filed" under the Securities Exchange Act of 1934, as amended).

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any

other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Table of Contents

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, 830 Winter Street, Waltham, MA 02451, 781-895-0600.

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.

Table of Contents

**Shares**

## Common Stock

**PROSPECTUS SUPPLEMENT**

*Sole Book-Running Manager*

# Jefferies

*Co-Managers*

**Oppenheimer & Co.**

**RBC Capital Markets**

**William Blair & Company**

**Canaccord Genuity**

**Morgan Joseph TriArtisan**

May , 2011