

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

**FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

MARSHALL EDWARDS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)
11975 El Camino Real, Suite 101
San Diego, California 92130
(858) 792-6300

51-0407811
(I.R.S. Employer
Identification Number)

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

Daniel P. Gold
President and Chief Executive Officer
11975 El Camino Real, Suite 101
San Diego, California 92130
(858) 792-6300

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

With a Copy to:
Steven A. Navarro, Esq.
Finnbarr D. Murphy, Esq.
Morgan, Lewis & Bockius LLP
101 Park Avenue
New York, New York 10178

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered(1)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common Stock, par value \$0.00000002 per share	\$8,000,000	\$916.80
Subscription rights to purchase common stock	—	\$— (3)

- (1) This registration statement relates to (a) the subscription rights to purchase shares of our common stock, \$0.00000002 par value per share, and (b) the shares of our common stock deliverable upon the exercise of the subscription rights. The subscription rights may not be sold, transferred or assigned; provided, however, that holders may distribute their subscription rights to their own stockholders, members or general or limited partners.
- (2) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended. The estimated amount represents the gross proceeds from the sale of shares of our common stock assuming the exercise of all subscription rights to be distributed.
- (3) The subscription rights are being issued without consideration. Pursuant to Rule 457(g) under the Securities Act of 1933, as amended, no separate registration fee is payable with respect to the rights being registered since such rights are being registered in the same registration statement as the common stock issuable upon exercise of the subscription rights.

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

The information in this preliminary prospectus is not complete and may be changed or withdrawn without notice. This preliminary prospectus does not, and is not intended to, constitute an offer to sell or a solicitation of an offer to buy, any of these securities nor shall there be any sale of these securities or any solicitation of an offer to buy these securities in any jurisdiction in which such offer, sale or solicitation would be unlawful.

SUBJECT TO COMPLETION: DATED FEBRUARY 21, 2012

PRELIMINARY PROSPECTUS

MARSHALL EDWARDS, INC.
Up to \$8,000,000 of Common Stock Issuable upon the Exercise
of Subscription Rights at \$ Per Share

Marshall Edwards, Inc. (the “Company”) is distributing at no charge, to holders of our common stock, \$0.00000002 par value per share (our “Common Stock”), as of 5:00 p.m., Eastern time, [], 2012 (the “Record Date”), subscription rights (the “Rights”), to purchase an aggregate of up to \$8 million of Common Stock (the “Rights Offering”). In the Rights Offering, you will receive one Right for every share of Common Stock held by you of record as of on the Record Date. The exercise of one Right will entitle you to purchase [] shares of Common Stock at a subscription price of \$[] per share (the “Basic Subscription Right”). Holders of our Series A warrants issued in connection with the May 2011 private placement, as defined below, will also be entitled, pursuant to the terms of such warrants, to receive one Right for every share of Common Stock with respect to which such warrants are currently exercisable.

If you timely and fully exercise your Basic Subscription Right with respect to all the Rights you hold (after giving effect to any permitted distribution of Rights) and other holders of rights (“Rights Holders”) do not exercise their Basic Subscription Right in full, you may also subscribe for additional shares of Common Stock, subject to availability and allocation (the “Over-subscription Privilege”), provided that the aggregate number of shares of Common Stock purchased in the Rights Offering may not exceed [], for an aggregate purchase price of \$8 million. If the number of shares issuable upon the exercise of the Over-subscription Privilege exceeds the number of shares available, we will allocate the available shares pro rata among the Rights Holders exercising the Over-subscription Privilege in proportion to the number of shares such a Rights Holder elected to purchase pursuant to the Over-subscription Privilege, relative to the aggregate number of shares requested in all of the exercises of the Over-subscription Privilege received from Rights Holders. For additional details regarding the pro rata allocation process, see “Questions and Answers Relating to the Rights Offering—What is the Over-subscription Privilege?” If you properly exercise your Over-subscription Privilege for a number of shares that exceeds the number of shares allocated to you, any excess subscription payments received by the subscription agent will be returned to you as soon as practicable, without interest or penalty, following the expiration of the Rights Offering. We may reject any over-subscription and we reserve discretion to reject an over-subscription to the extent the Rights Holder would own 5% or more of our Common Stock after the over subscription is exercised. If you exercise your Over-subscription Privilege and your over-subscription is rejected, for any reason, the excess subscription payment will be returned to you, without interest or penalty, as soon as practicable.

There is no minimum number of shares that must be sold or minimum subscription amount required for consummation of the Rights Offering and, as a result, if you exercise your Rights to purchase shares of Common Stock, you could be the only purchaser in the Rights Offering.

Our majority shareholder, Novogen Limited, or Novogen, has indicated that, subject to the approval of its shareholders, it intends to exercise Rights for up to \$4 million of Common Stock. Novogen has advised us that its shareholders’ approval of any exercise of its Rights will be sought prior to the expiration of the Rights Offering, and we intend to issue a press release announcing the results of such vote promptly following the occurrence thereof. Novogen beneficially owns approximately 58.1% of our Common Stock before giving effect to the Rights Offering. Novogen has advised us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders.

The Rights Offering will commence on [], 2012 and will expire at 5:00 p.m., Eastern Time, on [], 2012 (the “Expiration Date”). Any Right not exercised at or before that time will expire void and worthless without any payment to the holder thereof of cash or shares. We do not intend to extend the Expiration Date. You should carefully consider whether to exercise your Rights prior to the Expiration Date. All exercises of Rights are irrevocable. Our Board of Directors will not make a recommendation regarding any exercise of your Rights.

[] will act as the information agent and [] will act as the subscription agent in connection with the Rights Offering. We will pay certain fees and expenses of the information agent and the subscription agent relating to the Rights Offering.

Our Common Stock is traded on the Nasdaq Capital Market under the symbol “MSHL.” On February [], 2012, the closing price for a share of our Common Stock on the Nasdaq Capital Market was \$[] per share. Except for distributions of the Rights by a Rights Holder to its own stockholders, members, or general or limited partners, the Rights will not be transferable. The Rights will not trade on the Nasdaq Capital Market or any other securities exchange or trading market.

Investing in our Common Stock involves risks. See “[Risk Factors](#)” beginning on page 15 to read about factors you should consider before you make your investment decision.

Stockholders who do not fully exercise their Rights will own, upon completion of the Rights Offering, a smaller proportional interest in the Company than otherwise would be the case had they fully exercised their Rights. See “Risk Factors—If you do not exercise your Rights, your percentage ownership will be further diluted” for more information.

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

	Per Share	Total ⁽¹⁾
Subscription Price		\$8,000,000
Proceeds, before expenses, to Marshall Edwards, Inc.		

(1) Assumes the exercise of Rights to purchase [] shares of Common Stock in the Rights Offering.

It is anticipated that delivery of the shares of Common Stock purchased in the Rights Offering will be made immediately after the Expiration Date.

The date of this prospectus is [], 2012.

TABLE OF CONTENTS

	<u>Page</u>
About This Prospectus	1
Additional Information	1
Incorporation by Reference	1
Questions and Answers Related to the Rights Offering	2
Summary	9
Risk Factors	15
Forward-Looking Statements	27
Plan of Distribution	29
Use of Proceeds	30
Market Price and Dividend Information	31
Capitalization	32
Selected Financial Data	33
Dilution	34
Description of Capital Stock	35
The Rights Offering	37
U.S. Federal Income Tax Consequences	45
Legal Matters	47
Experts	47

We have not authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you.

This prospectus and any applicable prospectus supplement are not offers to sell nor are they seeking an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus and any applicable prospectus supplement is complete and correct only as of the date on the front cover of such documents, regardless of the time of the delivery of such documents or any sale of these securities. In this prospectus, “Marshall Edwards,” “we,” “us,” and “our” refer to the consolidated operations of Marshall Edwards, Inc., and references to a company name refer solely to such company.

For investors outside the United States: We have not taken any action to permit a public offering of the shares of our Common Stock or the possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”). When required, we will amend the registration statement or file prospectus supplements to update or change information contained in this prospectus. You should read both this prospectus or any amended prospectus and any prospectus supplement together with additional information described under the headings “Additional Information” and “Incorporation By Reference.”

ADDITIONAL INFORMATION

As permitted by SEC rules, this prospectus omits certain information that is included in the registration statement and its exhibits. Since the prospectus may not contain all of the information that you may find important, you should review the full text of these documents. If we have filed a contract, agreement or other document as an exhibit to the registration statement, you should read the exhibit for a more complete understanding of the document or matter involved. Each statement in this prospectus, including statements incorporated by reference as discussed below, regarding a contract, agreement or other document is qualified in its entirety by reference to the actual document.

We file annual, quarterly and special reports and other information with the SEC. You may read and copy any document we file with the SEC at the SEC’s public reference room located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our filings are also available to the public from the SEC’s web site at <http://www.sec.gov>.

INCORPORATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with the SEC, which means we can disclose important information to you by referring to these documents. The information included in the following documents is incorporated by reference and is considered a part of this prospectus. The most recent information that we filed with the SEC automatically updated and superseded previously filed information.

We hereby incorporate by reference into this prospectus the following documents that we have filed with the SEC:

- Our Annual Report on Form 10-K for the fiscal year ended June 30, 2011 filed with the SEC on September 28, 2011;
- Our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011 filed with the SEC on November 14, 2011;
- Our Quarterly Report on Form 10-Q for the quarter ended December 31, 2011 filed with the SEC on February 9, 2012;
- Our Current Reports on Form 8-K filed with the Commission on August 29, 2011, September 9, 2011, September 29, 2011, October 26, 2011, December 5, 2011 and December 29, 2011; and
- Our Definitive Proxy Statement on Schedule 14A filed with the SEC on October 28, 2011.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Marshall Edwards, Inc.
11975 El Camino Real, Suite 101
San Diego, California 92130
Tel: (858) 792-6300
Attn: Investor Relations

Copies of these filings are also available, without charge, through the “Investors” section of our website (www.marshalledwardsinc.com) as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus.

QUESTIONS AND ANSWERS RELATED TO THE RIGHTS OFFERING

The following questions and answers do not contain all of the information that may be important to you and may not address all of the questions that you may have about the Rights Offering. This prospectus and the documents incorporated by reference into this prospectus contain more detailed descriptions of the terms and conditions of the Rights Offering and provide additional information about us and our business, including potential risks related to the Rights Offering, our Common Stock offered hereby and our business.

What is the Rights Offering?

We are distributing, at no charge, to holders of our Common Stock, Rights to purchase shares of Common Stock at a subscription price of \$[] per share. You will receive such Rights if you owned Common Stock as of 5:00 p.m., Eastern Time, on the Record Date. Each Right will consist of a Basic Subscription Right and an Over-subscription Privilege, as described below. You will receive one Right for every share of Common Stock that you owned on the Record Date. The exercise of one Right will entitle you to purchase [] shares of Common Stock at a subscription price of \$ [] per share. We will issue up to a total of [] shares of Common Stock in the Rights Offering for an aggregate purchase price of up to \$8 million.

Holders of our Series A warrants issued in connection with the May 2011 private placement, as defined below, will also be entitled, pursuant to the terms of such warrants, to receive one Right for every share of Common Stock with respect to which such warrants are currently exercisable. As of February [], 2012, the Series A warrants were exercisable for an aggregate of 2,460,617 shares of Common Stock at an exercise price of \$1.00 per share.

[] will act as our information agent for the Rights Offering. As our information agent, [] will assist in the distribution of the subscription rights, this prospectus and the related subscription information and forms, solicit responses from our stockholders to the Rights Offering, as well as answer any questions and provide further information to our stockholders with respect to the Rights Offering. [] will act as our subscription agent for the Rights Offering. As our subscription agent, [] will receive and process all subscription certificates from our holders of record and will distribute certificates for the shares of our Common Stock purchased by holders of record upon the expiration of the Rights Offering. We will pay certain fees and expenses of the information agent and the subscription agent relating to the Rights Offering.

Why are we conducting the Rights Offering?

We have decided to pursue the Rights Offering to raise capital to, among other things, further progress our clinical trial programs and for other general corporate purposes. Our board of directors also considered other alternatives available for raising equity capital and determined that the Rights Offering was in our best interests and those of our stockholders. This Rights Offering will give you the opportunity to participate in our capital raising and maintain, or if other stockholders do not exercise their Rights, to increase your proportional ownership interest in us.

What is the Basic Subscription Right?

Pursuant to the Rights Offering, Rights Holders will be entitled to purchase [] shares of Common Stock upon their exercise of each Right at a subscription price of \$[] per share. You may exercise some, all or none of your Rights. Other than distributions by a stockholder to its own stockholders, members or general or limited partners, you may not transfer your Rights.

If you hold Common Stock in your name, the number of shares you may purchase pursuant to your Basic Subscription Right is indicated on the enclosed rights certificate. If you hold your shares in the name of a broker,

[Table of Contents](#)

dealer, custodian bank or other nominee, you will not receive a rights certificate; your nominee will receive a rights certificate pertaining to your shares. If you are not contacted by your nominee, you should contact your nominee as soon as possible.

What is the Over-subscription Privilege?

If you timely and fully exercise your Basic Subscription Right with respect to all the Rights you hold (after giving effect to any permitted distribution of Rights), you may also choose to exercise your Over-subscription Privilege by purchasing a portion of any whole shares that other Rights Holders do not purchase through their Basic Subscription Rights. You should indicate on your rights certificate, or the form provided by your nominee if your shares are held in the name of a nominee, how many additional shares you would like to purchase pursuant to your Over-subscription Privilege.

We will seek to honor the exercises of the Over-subscription Privilege (“over-subscription requests”) in full, subject to a maximum of [] shares of Common Stock being offered in the Rights Offering and the limitations described below. If the number of shares issuable upon the exercise of over-subscription requests exceeds the number of shares available, we will allocate the available shares pro rata among the Rights Holders exercising the Over-subscription Privilege in proportion to the number of shares each Rights Holder elected to purchase pursuant to the Over-subscription Privilege, relative to the aggregate number of shares requested in all of the over-subscription requests received from Rights Holders.

For example, if (i) there are 100 excess shares available for purchase by five Rights Holders who have timely and fully exercised their Basic Subscription Right with respect to all the Rights they hold (after giving effect to any permitted distribution of Rights) and (ii) Rights Holder A requests an additional 100 shares pursuant to Rights Holder A’s Over-subscription Privilege, Rights Holder B requests an additional 50 shares pursuant to Rights Holder B’s Over-subscription Privilege, Rights Holder C requests an additional 20 shares pursuant to Rights Holder C’s Over-subscription Privilege, Rights Holder D requests an additional 20 shares pursuant to Rights Holder D’s Over-subscription Privilege, and Rights Holder E requests an additional 10 shares pursuant to Rights Holder E’s Over-subscription Privilege, then, assuming the valid exercise of each of these Rights Holder’s Basic Subscription Rights and receipt of sufficient payment for the shares requested pursuant to the over-subscription request, and that the beneficial ownership limitation described below is not applicable, the pro rata allocation would be as follows: Rights Holder A would receive 50 shares pursuant to the Over-subscription Privilege, Rights Holder B would receive 25 shares pursuant to the Over-subscription Privilege, Rights Holder C would receive 10 shares pursuant to the Over-subscription Privilege, Rights Holder D would receive 10 shares pursuant to the Over-subscription Privilege and Rights Holder E would receive 5 shares pursuant to the Over-subscription Privilege.

Because we will not know the total number of available shares and how available shares will be allocated before the Expiration Date, in order for the exercise of your entire Over-subscription Privilege to be valid, you must deliver to the subscription agent, prior to the Expiration Date, payment in an amount equal to the aggregate subscription price of the entire number of shares that you have requested the right to purchase pursuant to your Over-subscription Privilege, along with payment for the exercise of your Basic Subscription Right and all rights certificates and any other subscription documents that the subscription agent may require, such as [the Subscription Form, the Beneficial Owner Election Form, Nominee Holder Certification and Notice of Guaranteed Delivery], all of which are filed as exhibits to the registration statement of which this prospectus forms a part (the “Other Subscription Documents”), even though you ultimately may not be allocated the full amount of shares indicated in your over-subscription request. To the extent the aggregate subscription price of the actual number of shares allocated to you pursuant to the Over-subscription Privilege is less than the amount you actually paid, the excess subscription payments will be returned to you as soon as practicable, without interest or penalty, following the Expiration Date.

[Table of Contents](#)

We may reject any over-subscription and we reserve discretion to reject an over-subscription to the extent the Rights Holder would own 5% or more of our Common Stock after the over-subscription is exercised. If you exercise your Over-subscription Privilege and your over-subscription is rejected, for any reason, the excess subscription payment will be returned to you, without interest or penalty, as soon as practicable.

Are there any limits on the number of shares I may purchase in the Rights Offering?

As previously noted, we may reject any over-subscription request and we reserve discretion to reject an over-subscription request to the extent the Rights Holder would own 5% or more of our Common Stock after the Over-subscription Privilege is exercised. The total number of shares issued in the Rights Offering may not exceed [].

How was the subscription price determined?

In determining the subscription price, our board of directors considered a number of factors, including: the price at which our stockholders might be willing to participate in the rights offering; historical and current trading prices for our common stock; the need for liquidity and capital; and the desire to provide an opportunity to our stockholders to participate in the rights offering on a pro rata basis. In conjunction with its review of these factors, our Board of Directors also reviewed our history and prospects, including our past and present losses, our prospects for future earnings, our current financial condition and regulatory status and subscription prices in various rights offerings by other companies.

We did not request and have not received a fairness opinion regarding the subscription price. The subscription price is not necessarily related to our book value, net worth or any other established criteria of value and may or may not be considered the fair value of our Common Stock to be offered in the rights offering. You should not assume or expect that, after the stock offering, our shares of common stock will trade at or above the subscription price. The market price of our Common Stock may decline during or after the Rights Offering, and you may not be able to sell your Common Stock at a price equal to or greater than the subscription price. Before exercising your Rights, you should obtain a current quote for a share of our Common Stock and make an assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering, and the other information contained in, or incorporated by reference into, this prospectus.

How will the Rights Offering effect Novogen's ownership of our Common Stock?

As of the record date, Novogen beneficially owned 8,515,909 shares of our Common Stock, or 58.1% of the outstanding shares of our Common Stock. As a stockholder as of the record date, Novogen will have the right to subscribe for and purchase shares of our Common Stock under its Basic Subscription Right and its Over-subscription Privilege. Subject to its receipt of shareholder approval, Novogen has indicated that it intends to exercise Rights for up to \$4 million of Common Stock in the Rights Offering. Novogen has also informed us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders. If all Rights Holders and, if applicable, Novogen's shareholders, exercise their Basic Subscription Right and the Rights Offering is therefore fully subscribed, Novogen's beneficial ownership percentage will decrease by an amount proportional to the amount of Rights it distributes to its shareholders. If no other stockholder exercises its Basic Subscription Right and Novogen exercises Rights for \$4 million of Common Stock, we will issue an aggregate of [] shares of our Common Stock to Novogen, which would increase Novogen's beneficial ownership to an aggregate of []% of our outstanding Common Stock after giving effect to the Rights Offering.

Am I required to exercise the Rights I receive in the Rights Offering?

No. You may exercise some, all, or none of your Rights. If you do not exercise your Rights, the number of shares of Common Stock you own will not change as a result of the Rights Offering; however, your ownership interest in the Company will be diluted to the extent other Rights Holders exercise their Rights, and your voting and other rights in the Company will likewise be diluted.

[Table of Contents](#)

How soon must I act to exercise my Rights?

If you receive a rights certificate and elect to exercise any or all of your Rights, the subscription agent must receive your properly completed and duly executed rights certificate, any Other Subscription Documents that the subscription agent may require, and full subscription payment, including final clearance of any personal check, before the Expiration Date. If you hold your shares in the name of a broker, dealer, custodian bank or other nominee, please contact your nominee and follow the instructions provided to you. Your nominee may establish an earlier deadline before the Expiration Date by which time you must provide it with your instructions to exercise your Rights. We do not intend to extend the Expiration Date.

May I transfer my Rights?

The Rights are non-transferable; provided, however, that Rights Holders may distribute their Rights solely to their own stockholders, members or general or limited partners. Any such distributions must occur between the commencement of the Rights Offering until 4:00 p.m., Eastern Time, on the last trading day before the Expiration Date. Novogen has informed us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders. Rights will not be listed for trading on the Nasdaq Capital Market or any other securities exchange or trading market. See “The Rights Offering—Non-Transferability of Rights.”

Are we requiring a minimum subscription from Rights Holders to complete the Rights Offering?

No. We are not requiring an overall minimum subscription to complete the Rights Offering. As a result, if you exercise your Rights to purchase shares of Common Stock, you could be the only purchaser in the Rights Offering.

Have any stockholders indicated that they will exercise their rights?

Novogen, our majority stockholder, has indicated that, subject to receipt of the approval of its shareholders, it intends to exercise Rights for up to \$4 million of Common Stock in the Rights Offering.

Has the Board of Directors made a recommendation to stockholders regarding the Rights Offering?

No. Our Board of Directors will not make a recommendation regarding any exercise of Rights. You should make your investment decision based on your assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering and the other information contained in, or incorporated by reference into, this prospectus. See “Risk Factors” for a discussion of some of the risks involved in investing in our Common Stock.

Are there risks in exercising my Rights?

Yes. Exercising your Rights involves the purchase of additional shares of Common Stock and you should consider this investment as carefully as you would consider any other investment. The stock market has experienced significant volatility over the past few years. As a result, the market price for our Common Stock has been volatile. In addition, the trading volume in our Common Stock could fluctuate more than usual and cause significant price variations to occur. Accordingly, our Common Stock may continue to trade at a price lower than the subscription price. The trading price of our Common Stock will depend on many factors, which may change from time to time, including, without limitation, our financial condition, performance, and prospects, future sales of our equity or equity related securities, and other factors. Volatility in the market price of our Common Stock may prevent you from being able to sell your shares of Common Stock when you want or at prices you find attractive. Among other things, you should carefully consider the risks described under the heading “Risk Factors” beginning on page 14 of this prospectus and in the documents incorporated by reference into this prospectus.

Will our directors and executive officers participate in the Rights Offering?

To the extent they hold Common Stock as of the Record Date, our directors and executive officers will be entitled to participate in the Rights Offering on the same terms and conditions applicable to other Rights Holders. None of our directors or officers has entered into any commitments to exercise the Rights received in the Rights Offering.

Will fractional shares be issued upon exercise of the Rights?

No. We will not issue fractional shares of Common Stock in the rights offering, and holders will only be entitled to purchase a whole number of shares of Common Stock, rounded down to the nearest whole number a holder would otherwise be entitled to purchase.

How do I exercise my Rights if I own shares and/or Rights in my name?

If you hold Common Stock and/or Rights in your name and you wish to exercise your Rights, you must deliver a properly completed and duly executed rights certificate and any Other Subscription Documents that the subscription agent may require, together with payment of the full subscription price, to the subscription agent before 5:00 p.m., Eastern Time, on the Expiration Date.

Please follow the delivery instructions on the rights certificate. Do not send documents to us. You are solely responsible for completing delivery to the subscription agent of your rights certificate, any Other Subscription Documents that the subscription agent may require, and subscription payment. You should allow sufficient time for delivery of your subscription materials to the subscription agent so that the subscription agent receives them by 5:00 p.m., Eastern Time, on the Expiration Date.

If you send a payment that is insufficient to purchase the number of shares you requested, or if the number of shares you requested is not specified in the forms, the payment received will be applied to exercise your Rights to the fullest extent possible based on the amount of the payment received, subject to the availability of shares and allocation procedure under the Over-subscription Privilege.

What should I do if I want to exercise my Rights but my shares and/or my Rights are held in the name of a broker, dealer, custodian bank or other nominee?

If you hold your Common Stock and/or Rights through a broker, dealer, custodian bank or other nominee, then your nominee is the record holder of the shares you own and the associated Rights. The record holder must exercise the Rights on your behalf. If you wish to exercise your Rights, you should contact your broker, dealer, custodian bank or nominee as soon as possible. Please follow the instructions of your nominee. Your nominee may establish an earlier deadline before the Expiration Date.

How do I exercise my Rights if I live outside the United States?

To exercise Rights, stockholders who have addresses outside the United States or who have APO or FPO addresses must notify the subscription agent prior to 5:00 p.m., Eastern time, on _____, 2012, and timely follow the other procedures described in “The Rights Offering—Foreign Stockholders; Stockholders with APO or FPO Addresses; Unknown Addresses.”

[Table of Contents](#)

To whom should I send my forms and payment?

If you are the record holder, then you should send your rights certificate, any Other Subscription Documents that the subscription agent may require, and subscription payment by one of the methods described below:

By mail:
[]
Attn: []
[ADDRESS]

By overnight courier or by hand:
[]
Attn: []
[ADDRESS]

If your shares are held in the name of a broker, dealer, custodian bank or other nominee, then you should send your rights certificate, any Other Subscription Documents that the subscription agent may require, and subscription payment to that record holder.

You and, if applicable, your nominee are solely responsible for completing delivery to the subscription agent of your rights certificate, any Other Subscription Documents, and subscription payment. You should allow sufficient time for delivery of your subscription materials to the subscription agent and clearance of payment before the Expiration Date. If you hold your Common Stock through a broker, dealer, custodian bank or other nominee, your nominee may establish an earlier deadline before the expiration date of the Rights Offering.

What form of payment should I submit to the subscription agent?

As described in the instructions accompanying the rights certificate, payments submitted to the subscription agent must be made in U.S. currency, by one of the following two methods:

- by a cashier's or certified check drawn upon a U.S. bank payable to []; or
- by a personal check drawn upon a U.S. bank payable to [].

Payments will be deemed to have been received upon clearance of any cashier's check, certified check or personal check. If paying by personal check, please note that the funds paid thereby may take five or more business days to clear. Accordingly, Rights Holders who wish to pay the subscription price by means of personal check are urged to make payment sufficiently in advance of the Expiration Date to ensure that such payment is received and clears by such time. In certain cases, you may be required to provide signature guarantees.

If you hold your shares in the name of a broker, dealer, custodian bank or other nominee, separate payment instructions may apply. Please contact your nominee, if applicable, for further payment instructions.

When will I receive my new shares?

If you exercise your Rights and purchase shares of Common Stock in the Rights Offering, you will receive your new shares as soon as practicable following the Expiration Date.

After I submit my payment and rights certificate to the subscription agent, may I cancel my exercise of Rights?

No. All exercises of Rights are irrevocable unless the Rights Offering is cancelled by the Company, even if you later learn information that you consider to be unfavorable to the exercise of your Rights. You should not exercise your Rights unless you are certain that you wish to purchase shares of Common Stock at the subscription price of \$[] per share.

What effects will the Rights Offering have on our outstanding Common Stock?

As a result of the Rights Offering, up to an additional [] shares of Common Stock may be issued and outstanding after the closing of the Rights Offering, and the ownership and voting interests of the existing stockholders that do not fully exercise their Basic Subscription Rights will be diluted. As of the Record Date, we had [] shares of Common Stock outstanding.

How much will the Company receive from the Rights Offering and how will such proceeds be used?

Assuming the exercise of Rights to purchase all [] shares of Common Stock in the Rights Offering for an aggregate purchase price of \$8 million, we estimate that the net proceeds of the Rights Offering, after deducting related expenses, will be approximately \$[] million. However, we are not requiring an overall minimum subscription to complete the Rights Offering. As a result, if you exercise your Rights to purchase shares of Common Stock, you could be the only purchaser in the Rights Offering. Novogen, our majority shareholder, has indicated that, subject to its receipt of shareholder approval, it intends to exercise Rights for up to \$4 million of Common Stock in the Rights Offering. We intend to use the net proceeds we receive from this offering to continue the early-stage clinical development of our two lead oncology drug candidates, ME-143 and ME-344, and for other general corporate purposes.

If my exercise of Rights is not valid, which could occur if I submit incomplete or incorrect subscription documents, will my subscription payment be refunded to me?

Yes. The subscription agent will hold all funds it receives in a segregated bank account until completion of the Rights Offering. If your exercise of Rights is deemed not to be valid, your subscription payment received by the subscription agent will be returned as soon as practicable following the Expiration Date, without interest or penalty. If you own shares through a nominee, it may take longer for you to receive your subscription payment because the subscription agent will return payments through the record holder of your shares.

What fees or charges apply if I purchase shares in the Rights Offering?

If you are a record holder, we are not charging any fee or sales commission to issue Rights to you or to issue shares to you if you exercise your Rights. If you are a beneficial owner and you exercise your Rights through a broker, dealer, custodian bank or other nominee, you are responsible for paying any fees your record holder may charge you.

What are the U.S. federal income tax consequences of the receipt and exercise of my Rights?

For U.S. federal income tax purposes, you should not recognize income or loss in connection with the receipt or exercise of Rights in the Rights Offering. You should consult your tax advisor as to your particular tax consequences resulting from the Rights Offering. For further information, see "U.S. Federal Income Tax Consequences".

Whom should I contact if I have other questions?

If you have any questions regarding the Rights Offering, completion of the rights certificate or any Other Subscription Documents or submitting payment in the Rights Offering, please contact [], by telephone, if you are located within the U.S., at [] (toll free) or, if you are located outside the U.S., at [].

SUMMARY

This summary does not contain all of the information you should consider before investing in our Common Stock. This prospectus includes or incorporates by reference information about the shares we are offering as well as information regarding our business and detailed financial data. Before you decide to invest in our Common Stock, you should read the entire prospectus carefully, including the “Risk Factors” section and any information incorporated by reference herein.

The Company

We are Marshall Edwards, a development stage oncology company incorporated in December 2000 as a wholly-owned subsidiary of Novogen Limited (“Novogen”). Our Common Stock is listed on the Nasdaq Capital Market under the symbol “MSHL”. As of [], 2012, Novogen owned approximately 58.1% of the outstanding shares of our Common Stock, as well as all of the outstanding shares of our Series A Convertible Preferred Stock.

Our business purpose is the development of drugs for the treatment of cancer. We are currently focused on the clinical development of our two lead drug candidates, ME-143 and ME-344. In May 2011, we completed the acquisition of certain assets and intellectual property, including those related to ME-143 and ME-344, from Novogen, in accordance with the terms of an Asset Purchase Agreement, dated as of December 21, 2010, between us, Novogen and Novogen Research Pty Limited.

We believe that our existing cash balances, which were approximately \$5.0 million as of December 31, 2011, will be sufficient to fund our operations until mid-calendar year 2012. Changes to our research and development plans or other changes affecting our operating expenses may affect actual future use of existing cash resources. In any event, however, we will need additional financing to fund our operations in the future including the continued development of our two lead drug candidates. We intend to pursue one or more capital raising transactions to further develop our drug candidates. If the Company is unable to obtain additional funds on favorable terms or at all, we may be required to cease or reduce our operations.

Clinical Development Programs

Our pipeline of drug candidates is derived from an isoflavone technology platform that has generated a number of compounds with anti-tumor activity. These compounds have been shown to interact with specific targets resulting in the inhibition of tumor metabolism, a function critical for cancer cell survival. Our lead programs focus on two families of compounds with related but distinct mechanisms of action: NADH oxidase inhibitors and mitochondrial inhibitors.

NADH Oxidase Inhibitors

Our most advanced program is a family of isoflavone compounds that includes Phenoxodiol, our first-generation compound that has been investigated in human clinical studies, and our next-generation compound and lead drug candidate ME-143. ME-143 in particular has demonstrated enhanced anti-tumor activity in pre-clinical laboratory studies and is currently under evaluation in a Phase I open label, multicenter, dose escalation study in human subjects with refractory solid tumors.

First Generation Drug Candidate: Phenoxodiol

Phenoxodiol has been administered to more than 400 patients in clinical research studies via oral or intravenous routes and appears to be well tolerated with an acceptable toxicity profile. In a Phase II clinical trial of *intravenously* administered Phenoxodiol in combination with platinum-based chemotherapy in women with recurrent ovarian cancer, a clinical response was observed in 19% of patients (three out of 16). These results

were published in the May 2011 issue of *International Journal of Gynecological Cancer*. However, in a Phase III clinical trial of orally administered Phenoxodiol in combination with platinum-based chemotherapy in women with advanced ovarian cancer resistant or refractory to platinum-based drugs, a clinical response was observed in less than 1% of patients (one out of 142).

Pharmacokinetic studies suggest that significantly higher blood plasma levels of active drug are measured when isoflavone compounds are administered intravenously versus orally. As a result of these findings and our clinical experience to date, we are actively pursuing the clinical development of our next-generation compounds using an intravenous formulation.

Next Generation and Lead Drug Candidate: ME-143

ME-143 is an active metabolite of Triphendiol, a second-generation analogue of Phenoxodiol. Pre-clinical laboratory research studies show that ME-143 demonstrates enhanced anti-tumor activity against a broad range of tumor cell lines when used alone or in combination with platinum-based chemotherapy when compared to both Phenoxodiol and Triphendiol. As a result, ME-143 was selected as our lead drug candidate for the NADH oxidase inhibitor program.

Our Investigational New Drug (IND) application for ME-143 was approved by the U.S. Food and Drug Administration (FDA) in August 2011. In September 2011, we initiated a Phase I open label, multicenter, dose escalation trial of ME-143 in patients with refractory solid tumors. This clinical trial, conducted in collaboration with the Sarah Cannon Research Institute, is evaluating the safety and tolerability of ME-143. In addition, the trial is designed to characterize the pharmacokinetic profile of intravenous ME-143 and describe any preliminary clinical anti-tumor activity observed. We currently expect final safety and pharmacokinetic data from this trial by the second quarter of calendar year 2012.

Mitochondrial Inhibitors

Our mitochondrial inhibitor program consists of a family of compounds that includes NV-128, our first-generation compound that has shown activity against a broad range of cancer cell lines in laboratory research studies, and our next-generation compound and lead drug candidate ME-344. ME-344 appears to be significantly more active than NV-128 in pre-clinical studies.

First Generation Drug Candidate: NV-128

NV-128 is a novel mitochondrial inhibitor which has been shown in pre-clinical laboratory studies to disrupt mitochondrial function and induce cancer cell death by two distinct mechanisms: (1) through the induction of DNA fragmentation and (2) through the process of destructive autophagy, wherein a cell consumes itself. Structurally, NV-128 is an analogue of ME-143, but, in contrast, uses different molecular mechanisms to promote the death of cancer cells.

NV-128 has shown activity in pre-clinical models against a broad range of cancers. Treatment of cancer cells with NV-128 induces a rapid loss of cellular energy resulting in the inhibition of both mammalian target of rapamycin (mTOR1 and mTOR2) pathways, which are suggested to be central to the aberrant proliferative capacity of both mature cancer cells and cancer stem cells. Results from an ongoing collaboration with Dr. Gil Mor at the Yale University School of Medicine's Department of Obstetrics, Gynecology and Reproductive Sciences, have demonstrated that NV-128 is active against chemotherapy-resistant ovarian tumor cells. In April 2011, his colleague Dr. Ayesha Alvero presented data at the American Association for Cancer Research Annual Meeting from a pre-clinical study of NV-128 demonstrating its ability to induce mitochondrial instability, ultimately leading to cell death in otherwise chemotherapy-resistant ovarian cancer stem cells. These results were later published in the August 2011 issue of *Molecular Cancer Therapeutics*.

Next Generation and Lead Drug Candidate: ME-344

ME-344 is an active metabolite of NV-128 that has demonstrated in laboratory studies superior anti-tumor activity against a panel of human cell lines as compared to NV-128. We have completed the necessary pre-clinical animal toxicity studies to support submission of an IND application in the first quarter of 2012. Pending FDA approval of the IND application, we plan to initiate a Phase I clinical trial of intravenous ME-344 shortly thereafter.

Intellectual Property

We own worldwide rights to all of our drug candidates. In December 2011, the U.S. Patent and Trademark Office (USPTO) issued a new patent covering a number of our isoflavone-based compounds, including ME-143 and ME-344, and their pharmaceutical compositions. In January 2012, we announced that the USPTO issued a new method of use patent covering our mitochondrial inhibitor compounds, including ME-344, for the treatment of cancer or a tumor mass. The new patents are expected to provide protection until March 2027 and September 2025, respectively. Our intellectual property portfolio now includes 12 issued U.S. patents, more than 14 U.S. patent applications, more than 40 issued foreign patents and more than 80 foreign patent applications.

Corporate Information

Our principal executive offices are located at 11975 El Camino Real, Suite 101, San Diego, California, 92130, and our phone number is (858) 792-6300.

THE RIGHTS OFFERING

Securities Offered	We will distribute at no charge to holders of our Common Stock one Right for share of Common Stock held of record as of 5:00 p.m., Eastern time, on the Record Date. The exercise of one Right will entitle you to purchase [] shares of Common Stock at a subscription price of \$[] per share.
Subscription Price	\$() per share of Common Stock. See “Questions and Answers Relating to the Rights Offering—How was the subscription price determined?”
Right	Each Right will consist of a Basic Subscription Right and an Over-subscription Privilege. You may exercise some, all, or none of your Rights.
Basic Subscription Right	Pursuant to this Rights Offering, you will be entitled to purchase [] shares of Common Stock at the subscription price upon the exercise of each Basic Subscription Right.
Over-subscription Privilege	<p>If you timely and fully exercise your Basic Subscription Right with respect to all the Rights you hold (after giving effect to any permitted distribution of Rights) and other Rights Holders do not exercise their Basic Subscription Right in full, you may also subscribe for additional shares of Common Stock, subject to availability and allocation, provided that the aggregate number of shares of Common Stock purchased by Rights Holders in the Rights Offering may not exceed [] shares, for an aggregate purchase price of up to \$8 million. If the number of shares issuable upon the exercise of</p> <p>over-subscription requests exceeds the number of shares available, we will allocate the available shares pro rata among the Rights Holders exercising the Over-subscription Privilege in proportion to the number of shares such a Rights Holder elected to purchase pursuant to the Over-subscription Privilege relative to the aggregate number of shares requested in all of the over-subscription requests received from Rights Holders. For additional details regarding the pro rata allocation process, see “Questions and Answers Relating to the Rights Offering—What is the Over-subscription Privilege?” If you properly exercise your Over-subscription Privilege for a number of shares that exceeds the number of shares allocated to you, any excess subscription payments received by the subscription agent will be returned to you as soon as practicable, without interest or penalty, following the Expiration Date. We may reject any over-subscription request and we reserve discretion to reject an over-subscription request to the extent the Rights Holder would own 5% or more of our Common Stock after the over subscription is exercised. If you exercise your Over-subscription Privilege and your over-subscription request is rejected, for any reason, the excess subscription payment will be returned to you, without interest or penalty, as soon as practicable.</p>

Table of Contents

Record Date	[], 2012.
Expiration Date	The Rights Offering will expire at 5:00 p.m., Eastern time, on [], 2012. We do not currently intend to extend the expiration of the Rights Offering.
Shares Outstanding	As of the Record Date, we had [] shares of Common Stock outstanding. As of [], 2012, we had [] shares of Common Stock outstanding.
Use of Proceeds	Assuming the exercise of Rights to purchase all [] shares of Common Stock in the Rights Offering, we estimate that the net proceeds of the Rights Offering, after deducting related expenses, will be approximately \$[] million. We intend to use the net proceeds we receive from this offering to continue the early-stage clinical development of our two lead oncology drug candidates, ME-143 and ME-344, and for other general corporate purposes. See "Use of Proceeds."
Procedure for Exercising Rights	If you are a registered holder of shares of Common Stock, you may deliver payment and a properly completed and duly executed rights certificate and any Other Subscription Documents that the subscription agent may require at or before 5:00 p.m., Eastern time, on the Expiration Date. If you are a beneficial owner of shares that are registered in the name of a broker, dealer, custodian bank or other nominee, your broker, dealer, custodian bank or other nominee must exercise your Rights on your behalf and deliver all documents and payments to the subscription agent at or before 5:00 p.m., Eastern time, on the Expiration Date.
Non-Transferability of Rights	The Rights may not be sold, transferred or assigned; provided, however, that Rights Holders may distribute their Rights to their own stockholders, members or general or limited partners. Novogen has informed us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders. Rights will not be listed for trading on the Nasdaq Capital Market or any other securities exchange or trading market.
No Revocation	All exercises of Rights are irrevocable, even if you later learn information that you consider to be unfavorable to the exercise of your Rights. You should not exercise your Rights unless you are certain that you wish to purchase additional shares of Common Stock at a subscription price of \$[] per share.
No Board Recommendation	Our Board of Directors will not make any recommendation regarding exercise of your Rights. You should make your decision based on your assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering, and the

[Table of Contents](#)

other information contained in, or incorporated by reference into, this prospectus. See “Risk Factors” for a discussion of risks involved in investing in our Common Stock.

Subscription Agent

[]

Information Agent

[]

Dividends

We have never paid or declared any cash dividends on our Common Stock, and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our Common Stock in the foreseeable future. See “Market Price and Dividend Information.”

Market for Common Stock

Our Common Stock is currently traded on the Nasdaq Capital Market under the symbol “MSHL.” See “Market Price and Dividend Information.”

Risk Factors

Before you exercise your Rights to purchase shares of our Common Stock, you should carefully consider the risks described in the section entitled “Risk Factors,” beginning on page 14 of this prospectus.

RISK FACTORS

Investment in our stock involves a high degree of risk. You should consider carefully the risks described below, together with other information included or incorporated by reference in this prospectus and our other filings, before making investment decisions regarding our stock. If any of the following events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our Common Stock to decline and you may lose all or part of your investment. Moreover, the risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, operating results, prospects or financial condition.

Risks Relating to Our Business

We have limited existing financial resources and will need substantial additional funds to progress the clinical trial program for our drug candidates ME-143 or ME-344 beyond their early development stages and to develop new compounds purchased from Novogen in the Isoflavone Transaction (as defined below). The actual amount of funds we will need will be determined by a number of factors, some of which are beyond our control.

We have limited cash resources and liquidity. We will need substantial additional funds to progress the clinical trial program for our drug candidates ME-143 or ME-344 and to develop any additional compounds. The factors which will determine the actual amount of funds that we will need to progress the clinical trial programs for ME-143 and ME-344 may include the following:

- the number of sites included in the trials;
- the length of time required to enroll suitable patients;
- the number of patients who participate in the trials and the rate that they are recruited;
- the number of treatment cycles patients complete while they are enrolled in the trials; and
- the efficacy and safety profile of the product.

If we are unable to obtain additional funds on favorable terms or at all, we may be required to cease or reduce our operations. Also, if we raise more funds by selling additional securities, the ownership interests of holders of our securities will be diluted.

We cannot assure you that we will be able to obtain financing sufficient to meet our future capital and operating needs.

We expect to have to attempt to sell additional shares of Common Stock, and securities exercisable or convertible into shares of our Common Stock, in the future to satisfy our capital and operating needs. If we sell shares in the future, the prices at which we sell these future shares will vary, and these variations may be significant. Purchasers of the shares in this Rights Offering, as well as our existing stockholders, will experience significant dilution if we sell these future shares at prices significantly below the price at which previous shareholders invested.

Pursuant to the terms of a private placement of equity securities that closed in May 2011 (the "May 2011 private placement") as described in Item 7 in our Annual Report on Form 10-K for the fiscal year ended June 30, 2011 (the "Form 10-K"), we have agreed not to offer or sell any of our or our subsidiaries' equity securities, including securities that are convertible or exchangeable for our Common Stock, other than those issuances of Common Stock to Novogen that were consummated in September and December 2011, or to file any new registration statement, other than as required by the Amended Registration Rights Agreement between us and the

[Table of Contents](#)

investors in the May 2011 private placement, until the earlier of (i) June 18, 2012 and (ii) 90 days after the registration of all of the securities we have agreed to register pursuant to the Amended Registration Rights Agreement. We have obtained a waiver from the investors in the May 2011 private placement to conduct this Rights Offering.

Future sales of our Common Stock, including upon conversion of our outstanding Series A Convertible Preferred Stock and exercise of our outstanding Series A warrants, may depress the market price of our Common Stock and cause stockholders to experience dilution.

The market price of our Common Stock could decline as a result of sales of substantial amounts of our Common Stock in the public market, including upon exercise of outstanding warrants and the conversion of the Series A Convertible Preferred Stock. The 1,000 shares of Series A Convertible Preferred Stock held by Novogen are initially convertible into an aggregate of 4,827,000 shares of our Common Stock. As of February [], 2012, the Series A warrants were exercisable for an aggregate of 2,460,617 shares of Common Stock. We intend to seek additional capital through one or more equity transactions, in addition to this Rights Offering, in calendar year 2012; however, such transactions will be subject to market conditions and there can be no assurance any such transactions will be completed.

Negative global economic conditions may pose challenges to our business strategy, which relies on access to capital from the markets or collaborators.

Negative conditions in the global economy, including credit markets and the financial services industry, have generally made equity and debt financing more difficult to obtain, and may negatively impact our ability to complete financing transactions. The duration and severity of these conditions is uncertain, as is the extent to which they may adversely affect our business and the business of current and prospective vendors and collaborators. If negative global economic conditions persist or worsen, we may be unable to secure additional funding to sustain our operations or to find suitable collaborators to advance our internal programs, even if we achieve positive results from our research and development efforts.

We have a limited operating history and are likely to incur operating losses for the foreseeable future.

You should consider our prospects in light of the risks and difficulties frequently encountered by early stage and developmental companies. Although we were incorporated in December 2000, we have only been in operation since May 2002. We have incurred net losses of \$80.7 million since our inception through December 31, 2011, including net losses of \$6,781,000, \$7,896,000 and \$11,180,000 for the years ended June 30, 2011, 2010 and 2009, respectively. We anticipate that we will incur operating losses and negative operating cash flow for the foreseeable future. We have not yet commercialized any drug candidates and cannot be sure that we will ever be able to do so, or that we may ever become profitable.

Our stockholders may not realize a benefit from the Isoflavone Transaction commensurate with the ownership dilution they will experience in connection with the Isoflavone Transaction.

On May 9, 2011, we completed the acquisition of certain assets used in or generated under or in connection with the discovery, development, manufacture and marketing of intellectual property and products based on the field of isoflavonoid technology and on compounds known as isoflavones, including those related to the drug candidates Phenoxodiol, Triphendiol, ME-143 and NV-128 (the "Isoflavone-related Assets"), from Novogen in accordance with the terms of the Asset Purchase Agreement, dated as of December 21, 2010, between us, Novogen and Novogen Research Pty Limited (the "Isoflavone Asset Purchase Agreement"). The acquisition of the Isoflavone-related Assets and the other transactions contemplated by the Isoflavone Asset Purchase Agreement are referred to in this prospectus as the "Isoflavone Transaction."

[Table of Contents](#)

If we are unable to realize the expected strategic and financial benefits from the Isoflavone Transaction, our stockholders may experience substantial dilution of their ownership interest upon the conversion of the Series A Convertible Preferred Stock, which may be converted at any time and from time to time without the payment of any additional consideration, without receiving any commensurate benefit. As of [], 2012, Novogen owned approximately 58.1% of our outstanding shares of common stock. Additionally, upon consummation of the Isoflavone Transaction, Novogen acquired 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into an aggregate of 4,827,000 shares of our Common Stock, which would increase Novogen's ownership percentage to approximately 68.4%. In addition, upon our achievement of certain development milestones relating to the Isoflavone-related Assets, the aggregate number of shares into which the Series A Convertible Preferred Stock may be converted would increase to 9,654,000, which would potentially increase Novogen's ownership percentage to approximately 74.7%, absent the issuance of any other shares of our Common Stock. Although in the Isoflavone Asset Purchase Agreement Novogen made certain representations and warranties regarding its intellectual property rights in respect of the Isoflavone-related Assets, these indemnification obligations, which were limited and payable solely by the forfeiture of our securities issued as consideration in the Isoflavone Transaction expired on June 30, 2011. Accordingly, we do not expect to be adequately compensated, if at all, for the loss of any such intellectual property rights acquired in the Isoflavone Transaction.

The results of pre-clinical studies and completed clinical trials are not necessarily predictive of future results, and our current drug candidates may not have favorable results in later studies or trials.

Pre-clinical studies and Phase I and Phase II clinical trials are not primarily designed to test the efficacy of a drug candidate, but rather to test safety, to study pharmacokinetics and pharmacodynamics, and to understand the drug candidate's side effects at various doses and schedules. Favorable results in early studies or trials may not be repeated in later studies or trials, including continuing pre-clinical studies and large-scale Phase III clinical trials, and our drug candidates in later-stage trials may fail to show desired safety and efficacy despite having progressed through earlier-stage trials. Unfavorable results from ongoing pre-clinical studies or clinical trials could result in delays, modifications or abandonment of ongoing or future clinical trials, or abandonment of a clinical program. Pre-clinical and clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals or commercialization. Negative or inconclusive results or adverse medical events during a clinical trial could cause a clinical trial to be delayed, repeated or terminated, or a clinical program to be abandoned.

Our research and development program for ME-344 is in an early stage of development, and may not result in the commencement of clinical trials.

Our research and development program for ME-344 is in the discovery or pre-clinical stage of development. The process of conducting pre-clinical studies requires the commitment of a substantial amount of our resources. Our pre-clinical compounds may not result in the commencement of clinical trials. We cannot be certain that results sufficiently favorable to justify commencement of Phase I clinical trials will be obtained in these pre-clinical investigations. Even if such favorable pre-clinical results are obtained, the FDA may not allow Phase I clinical trials to proceed. If we are unable to identify and develop new drug candidates, we may not be able to maintain a clinical development pipeline or generate revenues.

Final approval by regulatory authorities of our drug candidates for commercial use may be delayed, limited or prevented, any of which would adversely affect our ability to generate operating revenues.

We will not generate any operating revenue until we successfully commercialize one of our drug candidates. Currently, we have drug candidates at different stages of development, and each will need to successfully complete a number of studies and obtain regulatory approval before potential commercialization.

[Table of Contents](#)

In particular, any of the following factors may serve to delay, limit or prevent the final approval by regulatory authorities of our drug candidates for commercial use:

- ME-143 and ME-344 are in the early stages of development, and we will need to conduct significant pre-clinical and clinical testing to demonstrate safety and efficacy of these drug candidates before applications for marketing can be filed with the FDA, or with the regulatory authorities of other countries;
- data obtained from pre-clinical and clinical studies can be interpreted in different ways, which could delay, limit or prevent regulatory approval;
- development and testing of product formulation, including identification of suitable excipients, or chemical additives intended to facilitate delivery of our drug candidates;
- it may take us many years to complete the testing of our drug candidates, and failure can occur at any stage of this process; and
- negative or inconclusive results or adverse medical events during a clinical trial could cause us to delay or terminate our development efforts.

The successful development of any of these drug candidates is uncertain and, accordingly, we may never commercialize any of these drug candidates or generate revenue.

We may not be able to establish the contractual arrangements necessary to develop, market and distribute our product candidates.

A key part of our business plan is to establish contractual relationships with third parties to package, market and distribute our product candidates. Potential counterparties may not wish to enter into agreements with us due to Novogen's current equity position as our majority stockholder.

Similarly, potential partners may be discouraged by our limited operating history. There is no assurance that we will be able to negotiate commercially acceptable licensing or other agreements for our drug product candidates including continued clinical development, manufacture or marketing. If we are unable to successfully contract for these services, or if arrangements for these services are terminated, we may have to delay our commercialization program which will adversely affect our ability to generate operating revenues.

We rely on third parties to conduct our clinical trials and many of our pre-clinical studies. If those parties do not successfully carry out their contractual duties or meet expected deadlines, our drug candidates may not advance in a timely manner or at all.

In the course of our discovery, pre-clinical testing and clinical trials, we rely on third parties, including laboratories, investigators, clinical contract research organizations, or CROs, and manufacturers, to perform critical services for us. For example, we rely on third parties to conduct our clinical trials and many of our pre-clinical studies. CROs are responsible for many aspects of the trials, including finding and enrolling subjects for testing and administering the trials. Although we rely on these third parties to conduct our clinical trials, we are responsible for ensuring that each of our clinical trials is conducted in accordance with its investigational plan and protocol. Moreover, the FDA and foreign regulatory authorities require us to comply with regulations and standards, commonly referred to as good clinical practices, or GCPs, for conducting, monitoring, recording, and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial subjects are adequately informed of the potential risks of participating in clinical trials. Our reliance on third parties does not relieve us of these responsibilities and requirements. These third parties may not be available when we need them or, if they are available, may not comply with all regulatory and contractual requirements or may not otherwise perform their services in a timely or acceptable manner, and we may need to enter into new arrangements with alternative third parties and our clinical trials may be extended, delayed or terminated. These independent third parties may also have relationships with other commercial entities, some of

[Table of Contents](#)

which may compete with us. In addition, if such third parties fail to perform their obligations in compliance with our clinical trial protocols or GCPs, our clinical trials may not meet regulatory requirements or may need to be repeated. As a result of our dependence on third parties, we may face delays or failures outside of our direct control. These risks also apply to the development activities of collaborators, and we do not control their research and development, clinical trial or regulatory activities.

Our commercial opportunity will be reduced or eliminated if competitors develop and market products that are more effective, have fewer side effects or are less expensive than our drug candidates.

The development of drug candidates is highly competitive. A number of other companies have products or drug candidates in various stages of pre-clinical or clinical development that are intended for the same therapeutic indications for which our drug candidates are being developed. Some of these potential competing drugs are further advanced in development than our drug candidates and may be commercialized sooner. Even if we are successful in developing effective drugs, our compounds may not compete successfully with products produced by our competitors.

Our competitors include pharmaceutical companies and biotechnology companies, as well as universities and public and private research institutions. In addition, companies active in different but related fields represent substantial competition for us. Many of our competitors developing oncology drugs have significantly greater capital resources, larger research and development staffs and facilities and greater experience in drug development, regulation, manufacturing and marketing than we do. These organizations also compete with us and our service providers, to recruit qualified personnel, and with us to attract partners for joint ventures and to license technologies that are competitive with us. As a result, our competitors may be able to more easily develop technologies and products that would render our technologies or our drug candidates obsolete or non-competitive.

We have no direct control over the cost of manufacturing our drug candidates. Increases in the cost of manufacturing our drug candidates would increase our costs of conducting clinical trials and could adversely affect our future profitability.

We do not intend to manufacture our drug product candidates ourselves, and we will rely on third parties for our drug supplies both for clinical trials and for commercial quantities in the future. We have taken the strategic decision not to manufacture active pharmaceutical ingredients (“API”) for our drug candidates, as these can be more economically supplied by third parties with particular expertise in this area. We have identified contract facilities that are registered with the FDA, have a track record of large scale API manufacture, and have already invested in capital and equipment. We have no direct control over the cost of manufacturing our product candidates. If the cost of manufacturing increases, or if the cost of the materials used increases, these costs will be passed on to us, making the cost of conducting clinical trials more expensive. Increases in manufacturing costs could adversely affect our future profitability if we are unable to pass all of the increased costs along to our customers.

Even if we receive regulatory approval to commercialize our drug candidates, our ability to generate revenues from any resulting products will be subject to a variety of risks, many of which are out of our control.

Even if our drug candidates obtain regulatory approval, resulting products may not gain market acceptance among physicians, patients, healthcare payers or the medical community. We believe that the degree of market acceptance and our ability to generate revenues from such products will depend on a number of factors, including:

- timing of market introduction of our drugs and competitive drugs;
- actual and perceived efficacy and safety of our drug candidates;
- prevalence and severity of any side effects;

[Table of Contents](#)

- potential or perceived advantages or disadvantages over alternative treatments;
- strength of sales, marketing and distribution support;
- price of our future products, both in absolute terms and relative to alternative treatments;
- the effect of current and future healthcare laws on our drug candidates; and
- availability of coverage and reimbursement from government and other third-party payers.

If any of our drugs are approved and fail to achieve market acceptance, we may not be able to generate significant revenue to achieve or sustain profitability.

We face a risk of product liability claims and may not be able to obtain adequate insurance.

Our business exposes it to the risk of product liability claims. This risk is inherent in the manufacturing, testing and marketing of human therapeutic products. We have product liability insurance coverage of \$5 million. The coverage is subject to deductibles and coverage limitations. We may not be able to obtain or maintain adequate protection against potential liabilities, or claims may exceed our insurance limits. If we cannot or do not sufficiently insure against potential product liability claims, we may be exposed to significant liabilities, which may materially and adversely affect our business development and commercialization efforts.

Our financial results are affected by fluctuations in currency exchange rates.

A portion of our expenditures and potential revenue will be spent or derived outside of the United States. As a result, fluctuations between the U.S. dollar and the currencies of the countries in which we operate may increase our costs or reduce our potential revenue. At present, we do not engage in hedging transactions to protect against uncertainty in future exchange rates between particular foreign currencies and the U.S. dollar.

Risks Related to Securities Markets and Investment in Our Stock

The trading price of the shares of our Common Stock has been and may continue to be highly volatile and could decline in value and we may incur significant costs from class action litigation.

The trading price of our Common Stock could be highly volatile in response to various factors, many of which are beyond our control, including:

- failure to successfully develop drug candidates ME-143 and ME-344 (and their analogues);
- announcements of technological innovations by us or our competitors;
- new products introduced or announced by us or our competitors;
- changes in financial estimates by securities analysts;
- actual or anticipated variations in operating results;
- expiration or termination of licenses research contracts or other collaboration agreements;
- conditions or trends in the regulatory climate and the biotechnology, pharmaceutical and genomics industries;
- instability in the stock market as a result of current global events;
- changes in the market valuations of similar companies;
- the liquidity of any market for our securities;
- additional sales by us or Novogen of shares of our Common Stock; and
- threatened or actual delisting of our Common Stock from a national stock exchange.

[Table of Contents](#)

Equity markets in general, and the market for biotechnology and life sciences companies in particular, have experienced substantial price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of companies traded in those markets. In addition, changes in economic conditions in the U.S., Europe or globally, particularly in the context of current global events, could impact upon our ability to grow profitably. Adverse economic changes are outside our control and may result in material adverse impacts on our business or our results of operations. These broad market and industry factors may materially affect the market price of shares of our Common Stock, regardless of our development and operating performance. In the past, following periods of volatility in the market price of a company's securities, securities class-action litigation has often been instituted against that company. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources.

In addition, if the market price of our Common Stock remains below \$5.00 per share, under stock exchange rules, our stockholders will not be able to use such shares as collateral for borrowing in margin accounts. Further, certain institutional investors are restricted from investing in shares priced below \$5.00. This inability to use shares of our Common Stock as collateral and the inability of certain institutional investors to invest in our shares may depress demand and lead to sales of such shares creating downward pressure on and increased volatility in the market price of our Common Stock.

Because we do not intend to pay, and have not paid, any cash dividends on our shares of common stock, our stockholders will not be able to receive a return on their shares unless the value of our Common Stock appreciates and they sell their shares.

We have never paid or declared any cash dividends on our Common Stock, and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our Common Stock in the foreseeable future. Therefore, our stockholders will not be able to receive a return on their investment unless the value of our Common Stock appreciates and they sell their shares.

Our common stock may be delisted from Nasdaq.

During 2010, we received deficiency notices from Nasdaq regarding non-compliance with the minimum stockholders equity and the minimum Market Value of Publicly Held Shares in accordance with Nasdaq Listing Standards for the Nasdaq Global Market. On March 7, 2011, a Nasdaq Hearing Panel granted us until May 16, 2011 to evidence compliance with the stockholders equity and minimum Market Value of Publicly Held Shares requirement. On March 23, 2011, we received a positive response from the Nasdaq Listing Qualifications Staff indicating that our request for a transfer and continued listing on the Nasdaq Capital Market had been granted. Our common stock began trading on the Nasdaq Capital Market effective with the open of business on March 16, 2011.

Under Nasdaq rules, we are required to maintain minimum stockholders' equity of \$2.5 million. If our stockholders' equity falls below \$2.5 million, we would have 45 calendar days from the date of notification by Nasdaq to submit a plan to regain compliance. If the plan is accepted, Nasdaq can grant an extension of up to 180 calendar days from the date of the original notification for us to evidence compliance with this requirement. As a result of continuing losses from operations and the recognition of other expense for the fair value of derivative liabilities related to the securities issued in the May 2011 private placement, our stockholders' equity fell below \$2.5 million as of June 30, 2011; however, as a result of our subsequent financing activities, our stockholders' equity exceeded the \$2.5 million requirement as of September 30, 2011 and December 31, 2011.

In addition, under Nasdaq rules, companies listed on the Nasdaq Capital Market are required to maintain a share price of at least \$1.00 per share and if the share price declines below \$1.00 for a period of 30 consecutive business days, then the listed company would have 180 days to regain compliance with the \$1.00 per share minimum. In the event that our share price declines below \$1.00, we may be required to take action, such as a reverse stock split, in order to comply with the Nasdaq rules that may be in effect at the time.

[Table of Contents](#)

If we are not able to comply with the listing standards of the Nasdaq Capital Market, our Common Stock will be delisted from Nasdaq and an associated decrease in liquidity in the market for our Common Stock will occur.

We will have broad discretion over the use of the net proceeds from any exercise of outstanding warrants and the Rights.

We will have broad discretion to use the net proceeds to us upon any exercise of outstanding warrants and the Rights, and investors in our stock will be relying on the judgment of our board of directors and management regarding the application of these proceeds. Although we expect to use a substantial portion of the net proceeds from any exercise of the warrants and Rights to continue the early-stage clinical development of our two lead oncology drug candidates, ME-143 and ME-344, and for other general corporate purposes, we have not allocated these net proceeds for specific purposes.

We are authorized to issue blank check preferred stock, which could adversely affect the holders of our Common Stock.

Our restated certificate of incorporation allows us to issue blank check preferred stock with rights potentially senior to those of our Common Stock without any further vote or action by the holders of our Common Stock. Although our Series A Convertible Preferred Stock, our only outstanding preferred stock, does not contain dividend or voting preferences, the issuance of a class of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of our Common Stock or could adversely affect the rights and powers, including voting rights, of such holders. In certain circumstances, such issuance could have the effect of decreasing the market price of our shares, or making a change in control of us more difficult.

Laws, rules and regulations relating to public companies may be costly and impact our ability to attract and retain directors and executive officers.

Laws and regulations affecting public companies, including rules adopted by the SEC and by Nasdaq, as well as the laws and regulations of foreign governments, may result in increased costs to us. These laws, rules and regulations could make it more difficult or costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on our board committees or as executive officers. We cannot estimate accurately the amount or timing of additional costs we may incur to respond to these laws, rules and regulations.

Our executive officers and directors may sell shares of their stock, and these sales could adversely affect our stock price.

Sales of our stock by our executive officers and directors, or the perception that such sales may occur, could adversely affect the market price of our stock. Our executive officers and directors may sell stock in the future, either as part, or outside, of trading plans under Securities and Exchange Commission, or SEC, Rule 10b5-1. In connection with the May 2011 private placement, each of our executive officers and directors agreed not to sell any shares of our stock until the earlier of (i) the date 90 days after the date on which all of the shares of common stock, Series A and Series B warrants and Adjustment Shares have either been registered or can be sold pursuant to Rule 144 under the Securities Act, and (ii) June 18, 2012.

Risks Relating to Our Intellectual Property

Our commercial success is dependent, in part, on obtaining and maintaining patent protection and preserving trade secrets, which cannot be guaranteed.

Patent protection and trade secret protection are important to our business and our future will depend, in part on our ability maintain trade secret protection, obtain patents and operate without infringing the proprietary rights of others both in the United States and abroad. Litigation or other legal proceedings may be necessary to defend against claims of infringement, to enforce our patents or to protect our trade secrets. Such litigation could result in substantial costs and diversion of our management's attention.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions. Prior to the Isoflavone Transaction, Novogen had applied for patents in a number of countries with respect to the use of their isoflavone compounds, including Phenoxodiol, Triphendiol, ME-143, NV-128, and ME-344, for the treatment, prevention or cure of cancer and methods of production of Phenoxodiol. We acquired both issued patents and pending patent applications from Novogen in relation to these technologies, which we previously licensed from Novogen. The patent applications may not proceed to grant or may be amended to reduce the scope of protection of any patent granted. The applications and patents may also be opposed or challenged by third parties. Our commercial success will depend, in part, on our ability to obtain and maintain effective patent protection for our compounds and their use in treating, preventing, or curing cancer, and to successfully defend patent rights in those technologies against third-party challenges. As patent applications in the United States are maintained in secrecy until published or issued and as publication of discoveries in the scientific or patent literature often lag behind the actual discoveries, we cannot be certain that Novogen was the first to make the inventions covered by its pending patent applications or issued patents that we acquired or that it was the first to file patent applications for such inventions. Additionally, the breadth of claims allowed in biotechnology and pharmaceutical patents or their enforceability cannot be predicted. We cannot be sure that, should any patents issue, we will be provided with adequate protection against potentially competitive products. Furthermore, we cannot be sure that should patents issue, they will be of commercial value to us, or that private parties, including competitors, will not successfully challenge our patents or circumvent our patent position in the United States or abroad.

In addition, although in the Isoflavone Asset Purchase Agreement Novogen has made certain representations and warranties regarding its intellectual property rights in respect of the Isoflavone-related Assets, its indemnification obligations in respect of these representations and warranties are limited and expired on June 30, 2011.

Claims by other companies that we infringe on their proprietary technology may result in liability for damages or stop our development and commercialization efforts.

The pharmaceutical industry is highly competitive and patents have been applied for by, and issued to, other parties relating to products competitive with the compounds that we had previously licensed and purchased in May 2011 pursuant to the Isoflavone Asset Purchase Agreement. Therefore, Phenoxodiol, Triphendiol, ME-143, ME-344, NV-128 and any other drug candidates may give rise to claims that they infringe the patents or proprietary rights of other parties existing now and in the future.

Furthermore, to the extent that we or our consultants or research collaborators use intellectual property owned by others in work performed for us, disputes may also arise as to the rights in such intellectual property or in resulting know-how and inventions. An adverse claim could subject us to significant liabilities to such other parties and/or require disputed rights to be licensed from such other parties.

We have contracted formulation development and manufacturing process development work for our product candidates. This process has identified a number of excipients, or additives to improve drug delivery, which may be used in the formulations. Excipients, among other things, perform the function of a carrier of the active drug

[Table of Contents](#)

ingredient. Some of these identified excipients or carriers may be included in third party patents in some countries. We intend to seek a license if we decide to use a patented excipient in the marketed product or we may choose one of those excipients that does not have a license requirement.

We cannot be sure that any license required under any such patents or proprietary rights would be made available on terms acceptable to us, if at all. If we do not obtain such licenses, we may encounter delays in product market introductions, or may find that the development, manufacture or sale of products requiring such licenses may be precluded. We have not conducted any searches or made any independent investigations of the existence of any patents or proprietary rights of other parties.

We may be subject to substantial costs stemming from our defense against third-party intellectual property infringement claims.

Third parties may assert that we are using their proprietary information without authorization. Third parties may also have or obtain patents and may claim that technologies licensed to or used by us infringe their patents. If we are required to defend patent infringement actions brought by third parties, or if we sue to protect our own patent rights, we may be required to pay substantial litigation costs and managerial attention may be diverted from business operations even if the outcome is not adverse to us. In addition, any legal action that seeks damages or an injunction to stop us from carrying on our commercial activities relating to the affected technologies could subject us to monetary liability and require us or any third party licensors to obtain a license to continue to use the affected technologies. We cannot predict whether we would prevail in any of these types of actions or that any required license would be made available on commercially acceptable terms or at all.

Risks Related to our Relationship with Novogen

As our majority stockholder, Novogen has the ability to determine the outcome of matters submitted to our stockholders for approval, and Novogen's interests may conflict with our or our other stockholders' interests.

As of [], 2012, Novogen beneficially owned approximately 58.1% of our outstanding shares of common stock. Novogen's ownership interest may further increase to the extent it purchases additional shares of our Common Stock pursuant to the standby purchase agreement. In addition, Novogen owns 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into 4,827,000 shares of our Common Stock, which would increase Novogen's ownership percentage to approximately 68.4%. As a result, Novogen will have the ability to effectively determine the outcome of all matters submitted to our stockholders for approval, including the election and removal of directors and any merger, consolidation or sale of all or substantially all of its assets.

Novogen will have the ability to effectively control our management and affairs. Novogen's interests may not always be the same as those of our other stockholders. In addition, this concentration of ownership may harm the market price of our securities by:

- delaying, deferring or preventing a change in control;
- impeding a merger, consolidation, takeover or other business combination involving us;
- discouraging a potential acquirer from making a tender, offer or otherwise attempting to obtain control of us; or
- selling us to a third party.

[Table of Contents](#)

In the event that Novogen undergoes a change in control while remaining our controlling stockholder, we will become subject to the control and influence of Novogen's new controlling stockholder who may have views regarding the development of our business that differ from the development strategies we are currently pursuing.

In the event that Novogen undergoes a change in control while remaining our controlling stockholder, we will become subject to the control and influence of Novogen's new controlling stockholder who will have the ability to indirectly determine the outcome of all matters submitted to our stockholders for approval through its control of Novogen. This entity may have views regarding the development of our business that differ from the development strategies we are currently pursuing. Such controlling stockholder may cause Novogen to use its influence and voting power to change the direction in which we are developing our business. Such changes may include, but are not limited to, a decreased focus on the development of any of our current drug candidates and an increased focus on the development of alternative drug candidates, which may or may not be targeted to treat cancers.

One of our directors is the Chairman of the Board of Novogen Limited, which may create a conflict of interest as well as prevent him from devoting his full attention to us.

One of our board members, Mr. William Rueckert, currently serves as the Chairman of the Board of Novogen, our majority shareholder. Simultaneous service as a Novogen director could create, or appear to create, a conflict of interest when such director is presented with decisions that could have different implications for us and Novogen. His responsibilities could prevent him from devoting his full attention to us, which could be harmful to the development of our business.

Risks Related to the Rights Offering

The subscription price per share is not necessarily an indication of the fair value of our Common Stock.

In determining the subscription price, the board of directors considered a number of factors, including: the price at which our stockholders might be willing to participate in the rights offering; historical and current trading prices for our Common Stock; the need for liquidity and capital; negotiations with the Backstop Purchaser; and the desire to provide an opportunity to our stockholders to participate in the rights offering on a pro rata basis. In conjunction with its review of these factors, the board of directors also reviewed our history and prospects, including our past and present losses, our prospects for future earnings, our current financial condition and regulatory status. The subscription price is not necessarily related to our book value or any other established criteria of fair value and may or may not be considered the fair value of our Common Stock to be offered in the rights offering. After the date of this prospectus, our shares of Common Stock may trade at prices below the subscription price.

The Rights are not transferable, and there is no market for the Rights.

You may not sell, give away, or otherwise transfer your Rights; provided, however, that Rights Holders may distribute their Rights to their own stockholders, members, or general or limited partners. Because the Rights are non-transferable, there is no market or other means for you to directly realize any value associated with the Rights.

If you do not exercise your Rights, your percentage ownership will be diluted.

We will issue up to [] shares of Common Stock in the Rights Offering for an aggregate purchase price of up to \$8 million. If you choose not to exercise your Rights, your ownership interest in our Common Stock will be diluted relative to stockholders who exercise their Rights and relative to Novogen based on its backstop commitment.

[Table of Contents](#)

If you do not follow the subscription instructions and act before the Rights Offering expires, your exercise of Rights will be rejected.

If you want to exercise your Rights and purchase shares in the Rights Offering, you must act promptly to ensure that the subscription agent receives all required forms and payment before 5:00 p.m., Eastern Time, on the Expiration Date. If you are a beneficial owner of shares, you must act promptly to ensure that your broker, dealer, custodian bank or other nominee acts promptly on your behalf and that the subscription agent receives all required forms and payment before the Rights Offering expires. We are not responsible if your nominee fails to ensure that the subscription agent receives all required forms and payments before the Expiration Date. If you fail to complete and sign the required subscription forms, send an incorrect payment amount, or otherwise fail to follow the subscription procedures that apply to the exercise of your Rights before the Expiration Date, the subscription agent will reject your subscription or accept it only to the extent of the payment received. Neither we nor the subscription agent undertakes any responsibility to contact you concerning an incomplete or incorrect subscription form or payment, nor are we under any obligation to correct such forms or payment. We have the sole discretion to determine whether a subscription exercise complies properly with the subscription procedures.

Our stock price may decline between the time you elect to purchase shares and the time shares are issued to you.

If you purchase shares in the Rights Offering by submitting a rights certificate and payment, the subscription agent will mail to you a direct registration account statement or, upon request, a stock certificate as soon as practicable following the Expiration Date. If your shares are held by a broker, dealer, custodian bank or other nominee and you purchase shares, your account with your nominee will be credited by your nominee. Until the shares of Common Stock you elect to purchase are issued to you, you may not be able to sell your shares even though the Common Stock issued in the Rights Offering will be listed for trading on the Nasdaq Capital Market. The stock price may decline between the time you decide to sell your shares and the time you sell your shares.

The Rights Offering may cause the price of our Common Stock to decrease.

The shares of Common Stock that will be issuable in the Rights Offering may cause the price of a share of our Common Stock to decrease. If shares of Common Stock purchased in the Rights Offering are sold, such sales could further depress the market price of our Common Stock.

The future price of our Common Stock may be less than the \$[] subscription price per share in the Rights Offering.

If you exercise your Rights to purchase Common Stock in the Rights Offering, you may not be able to sell the shares of Common Stock later at or above the \$[] subscription price. The last reported price of a share of our Common Stock on the Nasdaq Capital Market as of [], 2012 was \$[]. This price could be subject to significant fluctuations in response to numerous factors, some of which are beyond our control. See “—Risks Related to Securities Markets and Investment in Our Stock—The trading price of the shares of our Common Stock has been and may continue to be highly volatile and could decline in value and we may incur significant costs from class action litigation.”

If you exercise your Rights, you commit to purchasing Common Stock at the designated subscription price and may not revoke your exercise even if the public trading market price of such shares is below the subscription price.

Your exercise of Rights to purchase shares of our Common Stock is irrevocable. If you exercise your Rights and the public trading market price of a share of our Common Stock is below the subscription price, you will have committed to buying our Common Stock at a price above the prevailing market price and could have an immediate unrealized loss. Our Common Stock is currently listed for trading on the Nasdaq Capital Market under the ticker symbol “MSHL,” and the last reported price of a share of our Common Stock on the Nasdaq Capital Market on [], 2012 was \$[] per share. Following the exercise of your Rights, you may not be able to sell your shares of Common Stock at a price equal to or greater than the subscription price.

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein include forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements other than statements of historical facts contained in this prospectus and in the documents incorporated by reference herein, including statements regarding the future financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “plan,” “expect,” and similar expressions, as they relate to us, are intended to identify forward-looking statements. We have based these forward-looking statements largely on current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including, without limitation, those described in “Risk Factors” and elsewhere in this prospectus and the documents incorporated by reference herein, including, among other things:

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including, among other things:

- our inability to obtain required additional financing or financing available to us on acceptable terms, or at all, which may cause us to delay, scale-back or eliminate plans related to development of our drug candidates;
- we are in an early stage of pre-clinical studies for our next generation product candidates on which our development plans are based; pre-clinical studies by their nature typically have a high level of risk of failure, and may not produce successful results;
- uncertainties in clinical trial results;
- our inability to maintain or enter into, and the risks resulting from our dependence upon, contractual arrangements necessary for the clinical development, manufacture, commercialization, marketing, sales and distribution of our product candidates;
- costs and delays in the clinical development programs and/or receipt of U.S. Food and Drug Administration (the “FDA”) or other required governmental approvals, or the failure to obtain such approvals, for our product candidates;
- our failure to successfully commercialize our product candidates;
- the failure of any products to gain market acceptance;
- our inability to control the costs of manufacturing our products;
- competition and competitive factors;
- our inability to protect our patents or proprietary rights and obtain necessary rights to third party patents and intellectual property to operate our business;
- our inability to operate our business without infringing the patents and proprietary rights of others;
- costs stemming from our defense against third party intellectual property infringement claims;
- general economic conditions;
- technological changes;
- government regulation generally and the receipt of regulatory approvals;
- changes in industry practice; and
- one-time events.

[Table of Contents](#)

These risks are not exhaustive. Other sections of this prospectus and the documents incorporated by reference herein include additional factors which could adversely impact our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time and it is not possible for us to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

You should not rely upon forward looking statements as predictions of future events. We cannot assure you that the events and circumstances reflected in the forward looking statements will be achieved or occur. Although we believe that the expectations reflected in the forward looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements.

PLAN OF DISTRIBUTION

On or about [], 2012, we will distribute the Rights at no cost to our stockholders as of the Record Date. If you wish to exercise your Rights, you must timely comply with the exercise procedures described under “The Rights Offering—Method of Exercising Rights.”

The Rights may not be sold, transferred or assigned; provided, however, that Rights Holders may distribute their Rights to their own stockholders, members or general or limited partners. Novogen has informed us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders. Rights will not be listed for trading on the Nasdaq Capital Market or any other securities exchange or trading market.

[] will act as our information agent for the Rights Offering. As our information agent, [] will assist in the distribution of the subscription rights, this prospectus and the related subscription information and forms, solicit responses from our stockholders to the Rights Offering, as well as answer any questions and provide further information to our stockholders with respect to the Rights Offering. [] will act as our subscription agent for the Rights Offering. As our subscription agent, [] will receive and process all subscription certificates from our holders of record and will distribute certificates for the shares of our Common Stock purchased by holders of record upon the expiration of the Rights Offering. We will pay certain fees and expenses of the information agent and the subscription agent relating to the Rights Offering. We will not pay any other commissions, underwriting fees or discounts in connection with the Rights Offering.

Some of our employees may solicit responses from you as a holder of Rights, but we will not pay our employees any commissions or compensation for these services other than their normal employment compensation. We estimate that our total expenses in connection with the Rights Offering will be \$[].

If you have any questions, you should contact the subscription agent as provided in “The Rights Offering—Subscription Agent.”

USE OF PROCEEDS

Assuming the exercise of Rights to purchase all [] shares of Common Stock in the Rights Offering for an aggregate purchase price of \$8 million, we estimate that the net proceeds of the Rights Offering, after deducting related expenses, will be approximately \$[] million. Novogen has indicated that, subject to its receipt of shareholder approval, it intends to exercise its Rights for up to \$4 million of Common Stock. However, because there is no minimum number of shares that must be sold in the Rights Offering, we can provide no assurance regarding the amount of capital we will actually raise in the Rights Offering. We intend to use the net proceeds we receive from this offering to continue the early-stage clinical development of our two lead oncology drug candidates, ME-143 and ME-344, and for other general corporate purposes.

MARKET PRICE AND DIVIDEND INFORMATION

Our Common Stock is currently listed on the Nasdaq Capital Market under the symbol “MSHL.” As of [], 2012, we had 14,668,744 shares of our Common Stock outstanding, held by approximately [] holders of record. Prior to March 16, 2011, our Common stock was listed on the Nasdaq Global Market.

The following table sets forth the quarterly high and low sales prices of our Common Stock on the Nasdaq Capital Market or the Nasdaq Global Market, as applicable, for the periods indicated, after adjustment of all amounts to retroactively reflect the 1-for-10 reverse stock split that occurred on March 29, 2010:

	Share prices	
	High	Low
Year Ending June 30, 2012		
First Quarter	\$ 2.75	\$ 1.05
Second Quarter	1.45	0.99
Third Quarter (through [], 2012)	[]	[]
Year Ended June 30, 2011		
First Quarter	\$ 1.55	\$ 0.71
Second Quarter	1.40	0.73
Third Quarter	3.48	0.97
Fourth Quarter	1.99	0.92
Year Ended June 30, 2010		
First Quarter	\$ 17.40	\$ 4.80
Second Quarter	10.26	6.20
Third Quarter	9.00	4.60
Fourth Quarter	5.60	1.22
Year Ended June 30, 2009		
First Quarter	\$ 33.20	\$ 11.20
Second Quarter	20.80	3.00
Third Quarter	9.80	2.50
Fourth Quarter	13.40	3.80

We have never paid or declared any cash dividends on our Common Stock, and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our Common Stock in the foreseeable future.

CAPITALIZATION

The following table sets forth our capitalization as of December 31, 2011, on (i) an actual basis, and (ii) a pro forma basis as adjusted to give effect to the issuance of [] shares of Common Stock at \$[] per share in the Rights Offering.

	<u>As of December 31, 2011</u>	
	<u>(in thousands, except share data)</u>	
	<u>Actual</u>	<u>Pro Forma as adjusted for Rights Offering</u>
Stockholders' equity		
Preferred stock, \$0.01 par value, 100,000 shares authorized;		
Series A: 1,000 shares issued and outstanding at December 31, 2011	—	—
Series B: 742 shares issued and redeemed; none outstanding at December 31, 2011	—	—
Common stock, \$0.00000002 par value; 113,000,000 shares authorized; 14,668,744 shares issued and outstanding, actual; [] shares issued and outstanding, pro forma as adjusted for Rights Offering	—	—
Additional paid-in capital	84,667	
Deficit accumulated during the development stage	(80,741)	
Total stockholders' equity	3,926	
Total Capitalization(1)	3,926	

(1) As of December 31, 2011, we had no long-term debt.

SELECTED FINANCIAL DATA

You should read the following selected financial data together with our consolidated financial statements and the related notes, as well as the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section and other financial data included in our Annual Report on Form 10-K and incorporated by reference in this prospectus.

	(In thousands)					
	Six Months ended December 31, 2011	Year ended June 30,				
		2011	2010	2009	2008	2007
Operating Data						
Total operating expenses	\$ (3,890)	\$(6,451)	\$ (7,979)	\$ (11,407)	\$ (13,081)	\$ (14,464)
Net loss	\$ (3,153)	\$(6,781)	\$ (7,896)	\$ (11,180)	\$ (12,410)	\$ (13,820)
Cash Flow Data						
Net cash used in operating activities	\$ (3,504)	\$(6,501)	\$(10,033)	\$ (10,554)	\$ (11,498)	\$ (10,786)
Net cash used in investing activities	—	\$ (48)	\$ (3)	—	—	—
Net cash provided by financing activities	\$ 4,637	\$ 1,376	—	\$ 9,878	\$ 15,083	\$ 16,890
	As of December 31, 2011	As of June 30,				
		2011	2010	2009	2008	2007
Balance Sheet Data						
Total assets	\$ 5,222	\$ 4,168	\$ 9,136	\$ 19,356	\$ 19,978	\$ 16,290
Total current liabilities	\$ (1,296)	\$(2,374)	\$(1,755)	\$ (4,143)	\$ (3,443)	\$ (2,513)

DILUTION

If you acquire shares of our Common Stock in the Right Offering, your ownership interest will be diluted to the extent of the difference between the subscription price per share of our Common Stock and the pro forma net tangible book value per share of our Common Stock after this offering. Our historical net tangible book value of common stock as of December 31, 2011 was \$3.9 million, or \$0.27 per share of Common Stock. Historical net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the total number of shares of common stock outstanding.

After giving effect to the issuance of the [] shares relating to the Rights at a price of \$[] per share, for an aggregate amount of \$8 million, and after deducting estimated offering expenses payable by us, our pro forma net tangible book value as of December 31, 2011 would have been \$[] million, or \$[] per share of Common Stock. This represents an immediate increase in pro forma net tangible book value of \$[] per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of \$[] per share in connection with shares issued in the Rights Offering. The following table illustrates this per share dilution:

Assumed subscription price per share		\$[]
Historical net tangible book value per share as of December 31, 2011	\$ 0.27	
Increase in net tangible book value per share attributable to this offering	<u>\$[]</u>	
Pro forma net tangible book value per share after this offering		\$[]
Dilution per share for shares issued in Rights Offering		\$[]

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists of 113,000,000 shares of common stock, par value \$0.00000002 per share, and 100,000 shares of preferred stock, par value \$0.01 per share. As of February [], 2012, there were 14,668,744 shares of Common Stock outstanding and 1,000 shares of Series A convertible preferred stock outstanding. The description set forth below is only a summary and is not complete. For more information regarding our capital stock, please refer to our restated certificate of incorporation, as amended, which is incorporated by reference as an exhibit to the registration statement of which this prospectus forms a part.

Common Stock

The holders of shares of Common Stock are entitled to one vote per share. In the event of a liquidation, dissolution or winding up of our affairs, holders of the Common Stock will be entitled to share ratably in all of our assets that are remaining after payment of our liabilities and the liquidation preference, if any, of any outstanding shares of preferred stock. All outstanding shares of Common Stock are fully paid and non-assessable. The rights, preferences and privileges of holders of Common Stock are subject to any series of preferred stock that we have issued or may issue in the future. The holders of Common Stock have no preemptive rights and are not subject to future calls or assessments by us.

Preferred Stock

Our board of directors is authorized to provide for the issuance of blank check preferred stock in one or more series with designations as may be stated in the resolution or resolutions providing for the issue of such preferred shares. At the time that any series of our preferred stock is authorized, our board of directors will fix the dividend rights, any conversion rights, any voting rights, redemption provisions, liquidation preferences and any other rights, preferences, privileges and restrictions of that series, as well as the number of shares constituting that series and their designation. Our board of directors could, without stockholder approval, cause us to issue preferred stock which has voting, conversion and other rights that could adversely affect the holders of shares of our Common Stock or make it more difficult to effect a change in control. Our preferred stock could be used to dilute the share ownership of persons seeking to obtain control of us and thereby hinder a possible takeover attempt which, if our stockholders were offered a premium over the market value of their shares, might be viewed as being beneficial to our stockholders. In addition, our preferred stock could be issued with voting, conversion and other rights and preferences which would adversely affect the voting power and other rights of holders of our Common Stock.

On May 9, 2011, we issued to Novogen, in a transaction exempt from the registration requirements of the Securities Act, pursuant to Section 4(2) thereof, 1,000 shares of our newly-designated Series A Convertible Preferred Stock (the "Series A Preferred Stock"). Each share of Series A Preferred Stock is convertible at any time and from time to time and without the payment of additional consideration by the holder thereof into 4,827 shares of Common Stock. In addition, if a Phase II clinical trial involving our isoflavone technology has achieved a statistically significant result ($p=0.05$ or less) or a first patient is enrolled in a Phase III clinical trial our isoflavone technology, then any share of the Series A Preferred Stock not already converted may thereafter be converted into 9,654 shares of Common Stock.

We have the option to purchase, in a single transaction, all of the unconverted Series A Preferred Stock for an aggregate exercise price of \$12,000,000 in cash for all of the Series A Preferred Stock and, where a portion of the Series A Preferred Stock has been converted, the exercise price shall be pro-rated. Upon the earlier of (i) May 9, 2016 and (ii) a "change in control" of Novogen, as defined in the Asset Purchase Agreement dated as of May 10, 2011, by and among Novogen, Novogen Research Pty Limited and us, all unconverted Series A Preferred Stock will automatically convert into Common Stock in accordance with the applicable conversion ratio.

[Table of Contents](#)

Without our prior written consent, Novogen will not be permitted, directly or indirectly, to transfer, sell, assign, pledge, lend, convey, hypothecate or otherwise encumber or dispose of (“Transfer”) any Series A Preferred Stock.

Holders of the Series A Preferred Stock are not entitled to receive any dividend or other similar distributions, except in the event that our board of directors or any duly authorized committee thereof declares and authorizes a special dividend or distribution on any shares of Series A Preferred Stock.

Holders of the Series A Preferred Stock will not be entitled to vote any shares of Series A Preferred Stock. Holders of the Series A Preferred Stock will not have any rights of preemption, except as we may otherwise agree in writing.

Warrants; Options

We may issue warrants or options to purchase our Common Stock or preferred stock. Warrants or options may be issued independently or together with any other securities and may be attached to, or separate from, such securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a warrant agent. All options will be issued under separate option agreements to be entered into between us and each holder of such options.

In addition to the Series A warrants issued in the May 2011 private placement, which as of February [], 2012 were exercisable to purchase 2,460,617 shares of our Common Stock at an exercise price of \$1.00, as of the same date, there were outstanding warrants to purchase 248,003 shares of our Common Stock at exercise prices from \$21.70 to \$36.00 per share, which expire at various dates in calendar years 2012 and 2013, and options to purchase 862,560 shares of Common Stock at exercise prices from \$0.77 to \$6.30 per share, which expire at various dates in calendar years 2014, 2015 and 2016.

THE RIGHTS OFFERING

Rights

We will distribute, at no charge, to holders of our Common Stock, Rights to purchase up to an aggregate of \$8 million of Common Stock. In the Rights Offering, you will receive one Right for every share of Common Stock held by you of record as of 5:00 p.m., Eastern time, on [], 2012. The exercise of each Right will entitle you to purchase [] shares of Common Stock at a subscription price of \$[] per share.

Holders of our Series A warrants issued in connection with the May 2011 private placement will also be entitled, pursuant to the terms of such warrants, to receive one Right for every share of Common Stock with respect to which such warrants are currently exercisable. As of February [], 2012, the Series A warrants were exercisable for an aggregate of 2,460,617 shares of Common Stock at an exercise price of \$1.00 per share.

Basic Subscription Rights

Pursuant to the Rights Offering, stockholders will have the right to purchase [] new shares of Common Stock at a subscription price of \$[] per share upon the exercise of each Basic Subscription Right. You may exercise some, all, or none of your Rights. Except as described under “—Non-Transferability of Rights” below, you may not transfer your Rights. If you do not timely and fully exercise your Basic Subscription Right with respect to all the Rights you hold (after giving effect to any permitted distribution of Rights), you will not be entitled to exercise your Over-subscription Privilege to purchase any additional Common Stock. Novogen has advised us that it intends to distribute a portion of its Rights to its shareholders.

Over-subscription Privilege

If you timely and fully exercise your Basic Subscription Right with respect to all the Rights you hold (after giving effect to any permitted distribution of Rights), you may also choose to exercise your Over-subscription Privilege to purchase additional shares of Common Stock that other Rights Holders do not elect to purchase through their Basic Subscription Rights, subject to availability and allocation, provided that the aggregate number of all shares of Common Stock purchased in the Rights Offering may not exceed [].

If the number of shares issuable upon the exercise of over-subscription requests exceeds the number of shares available, we will allocate the available shares pro rata among the Rights Holders exercising the Over-subscription Privilege in proportion to the number of shares such a Rights Holder elected to purchase pursuant to the Over-subscription Privilege, relative to the aggregate number of shares requested in all of the over-subscription requests received from Rights Holders. We may reject any over-subscription request and we will, in most cases, reject an over-subscription request to the extent the stockholder would own 5% or more of our Common Stock after the Over-subscription Privilege is exercised. If you exercise your Over-subscription Privilege and your over-subscription request is rejected, for any reason, the excess subscription payment will be returned to you, without interest or penalty, as soon as practicable.

To properly exercise your Over-subscription Privilege, you must deliver the subscription payment related to your Over-subscription Privilege before the Expiration Date. Because we will not know the total number of excess available shares and how excess available shares will be allocated before the Rights Offering expires, in order for the exercise of your entire Over-subscription Privilege to be valid, you should deliver to the subscription agent payment in an amount equal to the aggregate subscription price for the entire number of shares that you have requested to purchase pursuant to your Over-subscription Privilege, along with payment for the exercise of your Basic Subscription Right and all rights certificates and any Other Subscription Documents that the subscription agent may require, prior to the expiration of the Rights Offering.

We can provide no assurances that you will actually be permitted to purchase in full the number of shares you elect to purchase through the exercise of your Over-subscription Privilege. We will not be able to satisfy any requests for shares pursuant to the Over-subscription Privilege if all Rights Holders timely and fully exercise

[Table of Contents](#)

their Basic Subscription Rights with respect to all the Rights they hold, and we will only honor an Over-subscription Privilege to the extent sufficient shares are available following the exercise of Basic Subscription Rights, subject to the pro rata allocation described above.

To the extent the aggregate subscription price of the number of shares allocated to you pursuant to the Over-subscription Privilege is less than the amount you actually paid, the excess subscription payment will be returned to you as soon as practicable, without interest or penalty, after the Expiration Date.

To the extent the amount you paid in connection with the exercise of the Over-subscription Privilege is less than the aggregate subscription price of the shares allocated to you pursuant to the Over-subscription Privilege, you will receive only the number of shares for which you submitted full payment.

Subscription by Our Majority Shareholder

Our majority shareholder, Novogen Limited, or Novogen, has indicated that, subject to the approval of its shareholders, it intends to exercise its Rights for up to \$4 million of Common Stock. Novogen has advised us that its shareholders' approval of any exercise of its Rights will be sought prior to the expiration of the Rights Offering, and we intend to issue a press release announcing the results of such vote promptly following the occurrence thereof. Novogen has also advised us that, in the course of its capital management plans and subject to the approval of its shareholders, it intends to distribute a portion of its Rights to its shareholders.

On the record date for the Rights Offering, Novogen beneficially owned 8,515,909 shares of our Common Stock, which represented 58.1% of the outstanding shares of our Common Stock as of the record date. If all Rights Holders, including, if applicable, Novogen shareholders, exercise their Basic Subscription Right and the Rights Offering is therefore fully subscribed, Novogen's beneficial ownership percentage will be reduced by an amount in proportion to the Rights it distributes to its shareholders. If no other stockholder exercises its Basic Subscription Right and Novogen purchases \$4 million of Common Stock, we will issue an aggregate of [] shares of our Common Stock to Novogen, which would increase Novogen's beneficial ownership to an aggregate of []% of our outstanding Common Stock after giving effect to the Rights Offering.

Novogen also owns 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into an aggregate of 4,827,000 shares of our Common Stock. See "Description of Capital Stock—Preferred Stock."

Delivery of Common Stock

The subscription agent will deliver a direct registration account statement or, upon request, a stock certificate to you or your nominee representing the Common Stock that you purchased in the Rights Offering as soon as practicable following the expiration of the Rights Offering.

Reasons for the Rights Offering

We have decided to pursue the Rights Offering to raise capital which can be used to further progress our clinical trial programs and for other general corporate purposes.

Method of Exercising Rights

The exercise of Rights will be irrevocable and may not be cancelled or modified. You will be able to exercise your Rights as follows:

Subscription by Registered Holders

If you hold Common Stock and/or Rights in your name, the number of shares you may purchase pursuant to your Basic Subscription Right will be indicated on the enclosed rights certificate. You will be able to exercise

[Table of Contents](#)

your Rights by properly completing and executing the rights certificate and forwarding it, together with your full payment and any Other Subscription Documents that the subscription agent may require, to the subscription agent at the address given below under “—Subscription Agent,” to be received on or before the Expiration Date.

Subscription by Beneficial Owners

If you are a beneficial owner of Common Stock that is registered in the name of a broker, dealer, custodian bank or other nominee, you will not receive a rights certificate. Instead, we will issue Rights to the nominee record holder for the shares of Common Stock that you own on the Record Date. If you are a beneficial owner of Rights and you are not contacted by your nominee, you should promptly contact your nominee in order to subscribe for shares in the Rights Offering and follow the instructions provided by your nominee.

Subscription by DTC Participants

We expect that the exercise of your Rights may be made through the facilities of the Depository Trust Company (“DTC”). If your Rights are held of record through DTC, you will be able to exercise your Rights by instructing DTC, or having your broker instruct DTC, to submit to the subscription agent certification as to the aggregate number of Rights you are exercising and the number of shares of Common Stock you are subscribing for under your Basic Subscription Right and your Over-subscription Privilege, if any, and your full subscription payment.

Payment Method

As described in the instructions accompanying the rights certificate, payments submitted to the subscription agent must be made in U.S. currency by one of the following two methods:

- by a cashier’s or certified check drawn upon a U.S. bank payable to []; or
- by a personal check drawn upon a U.S. bank payable to [].

Payments will be deemed to have been received upon clearance of any cashier’s check, certified check or personal check. If paying by personal check, please note that the funds paid thereby may take five or more business days to clear. Accordingly, Rights Holders who wish to pay the subscription price by means of personal check are urged to make payment sufficiently in advance of the Expiration Date to ensure that such payment is received and clears by such time.

You should read the instruction letter accompanying the rights certificate carefully and strictly follow it. **DO NOT SEND RIGHTS CERTIFICATES OR PAYMENTS DIRECTLY TO US.** We will not consider your subscription received until the subscription agent has received a properly completed and duly executed rights certificate, any Other Subscription Documents that the subscription agent may require, and payment of the full subscription amount.

The method of delivery of rights certificates, any Other Subscription Documents that the subscription agent may require, and payment of the subscription amount to the subscription agent will be at the risk of Rights Holders. We recommend that you send those documents and payments properly insured, with return receipt requested, and that you allow a sufficient number of days to ensure delivery to the subscription agent and clearance of payment before the Expiration Date.

Incomplete or Incorrect Subscription Documents or Payment

If you fail to properly complete and duly sign the rights certificate and any Other Subscription Documents that the subscription agent may require or otherwise fail to follow the subscription procedures that apply to the exercise of your Rights before the Expiration Date, the subscription agent will reject your subscription or accept

[Table of Contents](#)

it only to the extent of the payment received. Neither we nor the subscription agent accepts any responsibility to contact you concerning an incomplete or incorrect subscription document, nor are we under any obligation to correct such documents. We have the sole discretion to determine whether a subscription exercise properly complies with the subscription procedures.

If you send a payment that is insufficient to purchase the number of shares you requested, or if the number of shares you requested is not specified in the forms, the exercise of your Rights will be given effect to the fullest extent possible based on the amount of the payment received, subject to the availability of shares and allocation procedure applicable to the exercise of the Over-subscription Privilege. Any excess subscription payments received by the subscription agent will be returned, without interest or penalty, as soon as practicable following the Expiration Date.

Expiration Date

You will be able to exercise your Rights beginning on [], 2012 until 5:00 p.m., Eastern Time, on [], 2012, which is the expiration of the Rights Offering. If you do not exercise your Rights during that time, your Rights will expire and will no longer be exercisable and any Rights not exercised before that time will be void and worthless without any payment to the holders thereof. We will not be required to issue shares to you if the subscription agent receives your rights certificate, any Other Subscription Documents or your subscription payment after the Expiration Date.

If you hold your Common Stock in the name of a broker, dealer, custodian bank or other nominee, the nominee will take action on your behalf in accordance with your instructions. Please note that your nominee may establish a deadline before the Expiration Date for the receipt of your instructions.

We do not currently intend to extend the Expiration Date for the Rights Offering.

Subscription Agent

The subscription agent for this offering is []. The rights certificate, any Other Subscription Documents that the subscription agent may require, and payment of the subscription price must be delivered to the subscription agent by overnight delivery services, or by certified or registered mail.

We recommend that you send documents and payments properly insured, with return receipt requested, and that you allow a sufficient number of days to ensure delivery to the subscription agent and clearance of payment before the Expiration Date. See “—Payment Method” for more information. Do not send or deliver these materials or payments to Marshall Edwards.

If you deliver rights certificates, any Other Subscription Documents that the subscription agent may require or payments in a manner different than that described above, we may not honor the exercise of your Rights.

Information Agent

The information agent for this offering is []. In its capacity as information agent, [] will assist with the mailing of this prospectus and related materials to Rights Holders, solicit responses from our stockholders to the Rights Offering, respond to inquiries of and provide information to Rights Holders, and provide other similar advisory services.

Medallion Guarantee May Be Required

Your signature on each rights certificate must be guaranteed by an eligible institution, such as a member firm of a registered national securities exchange or a member of the Financial Industry Regulatory Authority, Inc., or a commercial bank or trust company having an office or correspondent in the United States, subject to standards and procedures adopted by the subscription agent, in the following circumstances:

- you wish to have your shares issued to someone other than the registered holder; or
- you wish to transfer all or a portion of your Rights.

You can obtain a signature guarantee from a financial institution—such as a commercial bank, savings and loan association, credit union or broker dealer—that participates in one of the Medallion signature guarantee programs. The three Medallion signature guarantee programs are the following:

- Securities Transfer Agents Medallion Program (STAMP), whose participants include more than 7,000 U.S. and Canadian financial institutions;
- Stock Exchanges Medallion Program (SEMP), whose participants include the regional stock exchange member firms and clearing and trust companies; and
- New York Stock Exchange Medallion Signature Program (MSP), whose participants include NYSE member firms.

If a financial institution is not a member of a recognized Medallion signature guarantee program, it would not be able to provide signature guarantees. Also, if you are not a customer of a participating financial institution, it is likely the financial institution will not guarantee your signature. Therefore, the best source of a Medallion Guarantee would be a bank, savings and loan association, brokerage firm, or credit union with whom you do business. The participating financial institution will use a Medallion imprint or stamp to guarantee the signature, indicating that the financial institution is a member of a Medallion signature guarantee program and is an acceptable signature guarantor.

Guaranteed Delivery Procedures

If you wish to exercise Rights, but you do not have sufficient time to deliver the rights certificate evidencing your Rights and any Other Subscription Documents that the subscription agent may require to the subscription agent prior to the Expiration Date, you will be able to exercise your Rights by the following guaranteed delivery procedures:

- deliver to the subscription agent prior to the Expiration Date the subscription payment for each share you elected to purchase pursuant to the exercise of Rights in the manner set forth above under “—Payment Method”;
- deliver to the subscription agent prior to the Expiration Date the form entitled “Notice of Guaranteed Delivery”; and
- deliver the properly completed and duly executed rights certificate evidencing your Rights being exercised, with any required signatures guaranteed, and any Other Subscription Documents that the subscription agent may require to the subscription agent within three business days following the date you submit your notice of guaranteed delivery.

Your notice of guaranteed delivery must be delivered in substantially the same form provided with the instructions on your rights certificate. Your notice of guaranteed delivery must include a signature guarantee from an eligible institution described above.

In your notice of guaranteed delivery, you must provide:

- your name;

[Table of Contents](#)

- the number of Rights represented by your rights certificate, the number of shares of Common Stock for which you are subscribing under your Basic Subscription Right, and the number of shares of Common Stock for which you are subscribing under your Over-subscription Privilege, if any; and
- your guarantee that you will deliver to the subscription agent a rights certificate evidencing the Rights you are exercising and any Other Subscription Documents that the subscription agent may require within three business days following the date the subscription agent receives your notice of guaranteed delivery.

You may deliver your notice of guaranteed delivery to the subscription agent in the same manner as your rights certificate at the address set forth above under “—Subscription Agent.”

Notice to Nominees

If you are a broker, custodian bank or other nominee holder that holds Common Stock for the account of stockholders on the Record Date, you should notify the beneficial owners of the Rights Offering as soon as possible after we distribute the rights to determine whether they intend to exercise their Rights and obtain instructions. If a beneficial owner of our Common Stock so instructs, you should complete the rights certificate and any Other Subscription Documents that the subscription agent may require and submit them to the subscription agent with the full subscription payment by the Expiration Date. You will be able to exercise the number of Rights to which all beneficial owners in the aggregate otherwise would have been entitled had they been direct holders of our Common Stock on the Record Date, provided that you, as a nominee record holder, make a proper showing to the subscription agent by submitting the form entitled “Nominee Holder Certification,” which is provided with your Rights Offering materials. If you did not receive this form, you should contact the subscription agent to request a copy.

Beneficial Owners

If you are a beneficial owner of Common Stock and will receive your Rights through a broker, custodian bank or other nominee, your nominee will notify you of the Rights Offering. If you wish to exercise your Rights, you must instruct your nominee to act on your behalf, as described above. To indicate your decision with respect to your Rights, you should follow the instructions of your nominee. If you wish instead to obtain a separate rights certificate, you should contact your nominee as soon as possible and request that a rights certificate be issued to you. You should contact your nominee if you do not receive notice of the Rights Offering, but believe you are entitled to participate in the Rights Offering. We are not responsible if you do not receive the notice by mail or otherwise from your nominee or if you receive notice without sufficient time to respond to your nominee by the deadline established by your nominee, which may be before the expiration of the Rights Offering.

No Recommendation to Rights Holders

Our Board of Directors will not make a recommendation regarding any exercise of your Rights. Rights Holders who exercise Rights risk investment loss on money invested. The market price of our Common Stock has been volatile and, accordingly, the Common Stock that you purchase in this offering may continue to trade at a price lower than the subscription price and you may not be able to sell the shares when you want or at prices you find attractive. You should make your decision based on your assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering, and the other information contained in, or incorporated by reference into, this prospectus. See “Risk Factors” for a discussion of risks involved in investing in our Common Stock.

Market for our Common Stock

The Common Stock issuable upon exercise of the Rights will be listed on the Nasdaq Capital Market under the symbol “MSHL.”

[Table of Contents](#)

Non-Transferability of Rights

The Rights are non-transferable; provided, however, that Rights Holders may distribute their Rights solely to their own stockholders, members or general or limited partners. Any such distributions must occur between the commencement of the Rights Offering until 4:00 p.m., Eastern Time, on the Expiration Date. Rights will not be listed for trading on the Nasdaq Capital Market or any other securities exchange or trading market.

Novogen has informed us that it intends to distribute a portion of its Rights to its shareholders.

Validity of Subscriptions

We will resolve all questions regarding the validity and form of the exercise of your Rights, including time of receipt and eligibility to participate in the Rights Offering. Our determination will be final and binding. Once made, subscriptions and directions are irrevocable, and we will not accept any alternative, conditional or contingent subscriptions or directions. We reserve the absolute right to reject any subscriptions or directions not properly submitted or the acceptance of which would be unlawful. You must provide missing documents or information, correct any inaccurate information and resolve any other discrepancies in connection with your subscriptions before the Rights Offering expires, unless we waive those defects in our sole discretion. Neither we nor the subscription agent will be under any duty to notify you or your representative of defects in your subscriptions. A subscription will be considered accepted only when the subscription agent receives a properly completed and duly executed rights certificate and any Other Subscription Documents that the subscription agent may require and the full subscription payment including final clearance of any cashier's check or personal check. Our interpretations of the terms and conditions of the Rights Offering will be final and binding.

No Revocation or Change

Once you submit the rights certificate or have instructed your nominee of your subscription request, you will not be allowed to revoke or change the exercise or request a refund of monies paid. All exercises of Rights will be irrevocable, even if you learn information about us that you consider to be unfavorable. You should not exercise your Rights unless you are certain that you wish to purchase shares at the subscription price.

Stockholder Rights

You will have no rights as a holder of the Common Stock you purchase in the Rights Offering until such Common Stock is issued to you. The subscription agent will mail you a direct registration account statement as soon as practicable following the Expiration Date.

Foreign Stockholders; Stockholders with APO or FPO Addresses; Unknown Addresses

If you are a holder of record and your address is outside the United States, or if you have an APO or FPO address, or if your address is unknown, a rights certificate will not be mailed to you. To exercise your Rights, you must notify the subscription agent prior to 5:00 p.m., New York City time, on _____, 2012, the third business day prior to the Expiration Date of your exercise of such Rights and provide evidence satisfactory to us, such as a legal opinion from local counsel, that the exercise of such Rights does not violate the laws of the jurisdiction in which you reside. If no notice is received by such time or the evidence presented is not satisfactory to us, the Rights represented thereby will expire.

Fees and Expenses

We will pay all fees charged by the subscription agent and all other expenses incurred by us in the Rights Offering. You are responsible for paying any commissions, fees, taxes or other expenses incurred in connection with the distribution or exercise of your Rights.

Waiver to Conduct Rights Offering

Pursuant to the terms of the May 2011 private placement, we have agreed not to offer or sell any of our or our subsidiaries' equity securities, including securities that are convertible or exchangeable for our Common Stock, other than those issuances of Common Stock to Novogen that were consummated in September and December 2011, or to file any new registration statement, other than as required by the Amended Registration Rights Agreement between us and the investors in the May 2011 private placement, until the earlier of (i) June 18, 2012 and (ii) 90 days after the registration of all of the securities we have agreed to register pursuant to the Amended Registration Rights Agreement. We have obtained a waiver from the investors in the May 2011 private placement to conduct this Rights Offering.

U.S. FEDERAL INCOME TAX CONSEQUENCES

The following is a general discussion of certain United States federal income tax consequences to U.S. holders, as defined below, of the receipt, ownership and exercise of the Rights distributed in the Rights Offering. This discussion is based on the Internal Revenue Code of 1986, as amended (the "Code"), Treasury regulations promulgated thereunder, and administrative and judicial interpretations thereof, all as in effect as of the date hereof and all of which are subject to change, possibly with retroactive effect. This discussion is not binding on the Internal Revenue Service (the "IRS"), or the courts. Accordingly, no assurance can be given that the tax consequences described herein will not be challenged by the IRS or that such a challenge would not be sustained by a court. No ruling has been sought from the IRS, and no opinion of counsel has been rendered, as to the federal income tax consequences set forth in this discussion.

This discussion does not address all aspects of U.S. federal income taxation that may be applicable to holders in light of their particular circumstances or to holders subject to special treatment under the U.S. federal income tax laws, including, but not limited to, financial institutions, brokers and dealers in securities or currencies, insurance companies, tax-exempt organizations, persons who hold their shares as part of a straddle, hedge, conversion or other risk-reduction transaction, persons liable for the alternative minimum tax, U.S. expatriates, persons whose functional currency is not the U.S. dollar and foreign taxpayers. This discussion also does not address any aspect of state, local or foreign income or other tax laws. This discussion is limited to U.S. holders which hold our shares of Common Stock as capital assets. For purposes of this discussion, a "U.S. holder" is a holder that is, for U.S. federal income tax purposes:

- a citizen or resident of the United States;
- a corporation or partnership created or organized in or under the laws of the United States or any political subdivision thereof;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust.

YOU SHOULD CONSULT YOUR TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO YOU OF YOUR RECEIPT, OWNERSHIP AND EXERCISE OF THE RIGHTS, INCLUDING THE APPLICABILITY OF ANY FEDERAL ESTATE OR GIFT TAX LAWS OR ANY STATE, LOCAL OR FOREIGN TAX LAWS.

Receipt of the Rights

You will not recognize taxable income for U.S. federal income tax purposes in connection with the receipt of Rights in the Rights Offering.

Tax Basis and Holding Period of the Rights

The tax basis of the Rights received by you in the Rights Offering will be zero unless either (1) the fair market value of the Rights on the date such rights are distributed is equal to at least 15% of the fair market value on such date of the shares of Common Stock with respect to which they are received or (2) you elect to allocate part of the tax basis of such shares to the Rights. If either (1) or (2) is true, then, if you exercise the Rights, your tax basis in your shares will be allocated between the Rights and the shares with respect to which the Rights were received in proportion to their respective fair market values on the date the Rights are distributed. In order to comply with recently promulgated regulations, we expect to prepare, and provide to shareholders, or on our website, an IRS Form 8937, within 45 days of the distribution of the Rights. If we determine that the value of the Rights on the date such Rights are distributed is equal to at least 15% of the fair market value on such date of the shares of Common Stock with respect to which the Rights are received, we expect to reflect the value we

[Table of Contents](#)

determine, and its effect on your basis in the Rights and shares, on the IRS Form 8937. If we determine that the value of the Rights on such date is less than 15% of the fair market value on such date of the shares with respect to which the Rights are received, we expect to reflect on the IRS Form 8937, consistent with this determination (and subject to the election that you may make to take the value of the Rights into account, as discussed above) that the Rights do not have an effect on your basis in shares. We have not obtained, and may not obtain, an independent appraisal of the valuation of the Rights, and any determinations we reflect on an IRS Form 8937 will not be binding on the IRS. You should consult with your tax advisor to determine the proper allocation of basis between the Rights and the shares with respect to which the Rights are received.

Your holding period for the Rights will include your holding period for the shares with respect to which the Rights were received.

Expiration of the Rights

If you allow Rights received in the Rights Offering to expire, you will not recognize any gain or loss. If you have tax basis in the Rights, the tax basis of the shares owned by you with respect to which such Rights were distributed will be restored to the tax basis of such shares immediately prior to the receipt of the Rights in the Rights Offering.

Exercise of the Rights; Tax Basis and Holding Period of the Shares

You will not recognize any gain or loss upon the exercise of Rights received in the Rights Offering, and the tax basis of the shares acquired through exercise of the Rights should equal the sum of the subscription price for such shares and your tax basis, if any, in the Rights as described above. The holding period for the shares acquired through exercise of the Rights will begin on the date the Rights are exercised.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon for us by Morgan, Lewis & Bockius LLP.

EXPERTS

The financial statements as of June 30, 2011, and for the fiscal year ended June 30, 2011, incorporated by reference into this prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

The financial statements as of June 30, 2010 and 2009, and for each of the two years in the period ended June 30, 2010, incorporated by reference into this prospectus have been so incorporated in reliance on the report of BDO Audit (NSW-VIC) Pty Ltd, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

**Up to \$8,000,000 of Common Stock
Issuable upon the Exercise of Subscription Rights
at \$ per share**

PROSPECTUS

The date of this prospectus is , 2012

PART II INFORMATION NOT REQUIRED IN PROSPECTUS**Item 13. Other Expenses of Issuance and Distribution***

	Amount paid or to be paid
SEC registration fee	\$ 917
Printing expenses	\$ 30,000
Legal fees and expenses	\$ 175,000
Accounting fees and expenses	\$ 25,000
Subscription agent and information agent fees and expenses	\$ 40,000
Total Expenses	<u>\$ 270,917</u>

* All expenses are estimates other than the SEC registration fee.

Item 14. Indemnification of Directors and Officers

Our Restated Certificate of Incorporation, as amended, provides that we will indemnify our directors and officers to the full extent permitted by the Delaware General Corporation Law, or DGCL. Section 145 of the DGCL provides that the extent to which a corporation may indemnify its directors and officers depends on the nature of the action giving rise to the indemnification right. In actions not on behalf of the corporation, directors and officers may be indemnified for acts taken in good faith and in a manner reasonably believed to be in or not opposed to the best interests of the corporation. In actions on behalf of the corporation, directors and officers may be indemnified for acts taken in good faith and in a manner reasonably believed to be in or not opposed to the best interests of the corporation, except for acts as to which the director or officer is adjudged liable to the corporation, unless the relevant court determines that indemnification is appropriate despite such liability. Section 145 of the DGCL also permits a corporation to (i) reimburse present or former directors or officers for their defense expenses to the extent they are successful on the merits or otherwise and (ii) advance defense expenses upon receipt of an undertaking to repay the corporation if it is determined that payment of such expenses is unwarranted.

To supplement the general indemnification right contained in our Restated Certificate of Incorporation, our Amended and Restated By-Laws provide for the specific indemnification rights permitted by Section 145 (as described above). Our Amended and Restated By-Laws also permit us to purchase Directors & Officers insurance, but no director or officer has a right to require this.

In addition to the indemnification rights described above, our Restated Certificate of Incorporation, as amended, eliminates any monetary liability of directors to us or our stockholders for breaches of fiduciary duty except for (i) breaches of the duty of loyalty, (ii) acts or omissions in bad faith, (iii) improper dividends or share redemptions and (iv) transactions from which the director derives an improper personal benefit.

Finally, we have entered into an indemnification agreement with each of our directors and executive officers. Subject to certain exceptions, the indemnification agreements provide that an indemnitee will be indemnified for all expenses incurred or paid by the indemnitee in connection with a proceeding to which the indemnitee was or is a party, or is threatened to be made a party, by reason of the indemnitee's status with or service to us or to another entity at our request. In connection with proceedings other than those by or in the right of our company and to which the indemnitee was or is a party, or is threatened to be made a party, by reason of the indemnitee's status with or service to us or to another entity at our request, the indemnification agreements provide that an indemnitee will also be indemnified for all liabilities incurred or paid by the indemnitee. The indemnification agreements also provide for advancement of expenses incurred by an indemnitee in connection with an indemnifiable claim, subject to reimbursement in certain circumstances.

Item 15. Recent Sales of Unregistered Securities.

The following sets forth information regarding unregistered securities that were sold by the Registrant within the past three years:

On December 29, 2011, pursuant to the terms of a Securities Subscription Agreement dated as of December 28, 2011, between the Company and Novogen, the Company issued to Novogen 1,941,747 shares of common stock at a purchase price of \$1.03 per share. The shares were issued in a private offering in reliance on Section 4(2) of the Securities Act of 1933, as amended (the "Securities Act").

On September 29, 2011, pursuant to the terms of a Securities Subscription Agreement dated as of September 27, 2011, between the Company and Novogen, the Company issued to Novogen 1,333,333 shares of common stock at a purchase price of \$1.50 per share. The shares were issued in a private offering in reliance on Section 4(2) of the Securities Act.

On May 18, 2011, pursuant to the Amended and Restated Securities Purchase Agreement (the "May 2011 Securities Purchase Agreement"), dated as of May 16, 2011, between the Company and the investors named therein (the "May 2011 Financing Investors"), we issued 835,217 shares of common stock together with Series A and Series B warrants initially exercisable for an aggregate amount of approximately 2,792,000 shares of common stock, which amount was subject to increase to a maximum of approximately 4,416,000 shares of common stock to the extent the Series B warrants were exercised. As of September 26, 2011, all of the 2,165,534 Series B warrants had been exercised, resulting in Series A warrants becoming exercisable for an additional 970,500 shares of common stock. Also pursuant to the Amended and Restated Securities Purchase Agreement, we agreed to issue certain additional shares of our Common Stock (the "Adjustment Shares"), up to a maximum amount of approximately 2,333,000 shares to the extent the Series B warrants are exercised, and to the extent the trading price of our Common Stock is below certain levels on specified dates. On December 29, 2011, we issued 667,272 Adjustment Shares. Also pursuant to the terms of the Amended and Restated Securities Purchase Agreement, upon the issuance of the shares to Novogen, the Company was required to issue to the May 2011 Financing Investors an additional aggregate of 245,700 shares of Common Stock, which shares were issued on December 29, 2011. The shares, warrants and Adjustment Shares were issued in a private offering in reliance on Section 4(2) of the Securities Act.

On March 29, 2010, we filed a Certificate of Amendment ("Certificate of Amendment") to the Company's Restated Certificate of Incorporation in order to effect a 1-for-10 reverse stock split of our common stock effective as of the opening of trading of the Company's common stock on March 31, 2010. As a result of the reverse stock split, every 10 shares of the Company's issued and outstanding common stock were combined into one share of common stock. The reverse stock split did not change the number of authorized shares of the Company's common stock.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

(b) Financial Statements Schedules.

The Financial Statement Schedules have been omitted either because they are not required or because the information has been included in the financial statements or the notes thereto included in our Annual Report on Form 10-K, which is incorporated herein by reference.

Item 17. Undertakings.

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) To deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report, to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented by Article 3 of Regulation S-X is not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

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

(6) For the purpose of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to rule 424(b)(1), or (4), or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(7) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
3.2	Certificate of Amendment to the Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1.1 to the Company's Current Report on Form 8-K filed on March 31, 2010 (File No. 000-50484)).
3.3	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on July 30, 2007 (File No. 000-50484)).
3.4	Certificate of Designation of Series A Convertible Preferred Stock of Marshall Edwards, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on May 11, 2011 (File No. 000-50484)).
3.5	Certificate of Designation of Series B Preferred Stock of Marshall Edwards, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 18, 2011 (File No. 000-50484)).
4.1	Specimen Stock Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed on October 31, 2003 (Reg. No. 333-109129)).
4.2	Specimen Warrant Certificate (incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-3 filed on August 9, 2006 (Reg. No. 333-136440)).
4.3	Specimen Warrant Certificate (incorporated by reference to Exhibit 4.4 to the Company's Annual Report on Form 10-K filed on September 27, 2007 (File No. 000-50484)).
4.4	Form of Warrant Agreement (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on July 12, 2006 (File No. 000-50484)).
4.5	Warrant Agreement (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on August 6, 2007 (File No. 000-50484)).
4.6	Amended and Restated Warrant Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A filed on September 27, 2007 (File No. 000-50484)).
4.7	Form of Warrant (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on July 12, 2006 (File No. 000-50484)).
4.8	Form of Warrant (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed on August 6, 2007 (File No. 000-50484)).
4.9	Form of Warrant (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K/A filed on September 27, 2007 (File No. 000-50484)).
4.10	Warrant dated July 30, 2008 issued to Mr. John O'Connor (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on July 30, 2008 (File No. 000-50484)).
4.11	Form of Series A and Series B Warrants (incorporated by reference to Exhibits 10.5 and 10.6 to the Company's Current Report on Form 8-K filed on May 16, 2011 (File No. 000-50484)).
4.12	Form of Subscription Agent Agreement between the Registrant and []**
4.13	Form of Information Agent Agreement between the Registrant and []**
4.14	Form of Rights Certificate and Subscription Form.**
5.1	Form of Opinion of Morgan, Lewis & Bockius, LLP regarding the validity of the Common Stock and Rights being registered.*

Table of Contents

Exhibit No.	Description
10.1	Employment letter dated April 23, 2010, between Marshall Edwards, Inc. and Daniel Gold (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 26, 2010 (File No. 000-50484)).
10.2	Employment letter dated June 18, 2010, between Marshall Edwards, Inc. and Thomas Zech (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 23, 2010 (File No. 000-50484)).
10.3	Employment letter dated June 1, 2011, between Marshall Edwards, Inc. and Robert D. Mass (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 2, 2011 (File No. 000-50484)).
10.4	Amended and Restated License Agreement between Novogen Research Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.1 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
10.5	Amended and Restated Manufacturing License and Supply Agreement between Novogen Laboratories Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.2 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
10.6	Amended and Restated License Option Deed between Novogen Research Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.3 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
10.7	Amended and Restated Services Agreement among Novogen Limited, Marshall Edwards, Inc. and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.4 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
10.8	Guarantee and Indemnity among Marshall Edwards, Inc., Novogen Laboratories Pty Limited, Novogen Research Pty Limited and Novogen Limited (incorporated by reference to Exhibit 10.5 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
10.9	License Agreement between Novogen Research Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on May 16, 2006 (File No. 000-50484)).
10.10	Amendment Deed between Novogen Research Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 9, 2006 (File No. 000-50484)).
10.11	Registration Rights Agreement, dated July 11, 2006 by and among Marshall Edwards, Inc. and the investors signatory thereto (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on July 12, 2006 (File No. 000-50484)).
10.12	Registration Rights Agreement, dated as of August 6, 2007 by and among Marshall Edwards, Inc. and the purchasers signatory thereto (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on August 6, 2007 (File No. 000-50484)).
10.13	Registration Rights Agreement, dated as of September 26, 2007 by and among Marshall Edwards, Inc. and Blue Trading, LLC (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K/A filed on September 27, 2007 (File No. 000-50484)).
10.14	Amended & Restated Registration Rights Agreement, dated as of May 16, 2011, between Marshall Edwards, Inc. and certain investors signatory thereto (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 16, 2011 (File No. 000-50484)).
10.15	Securities Subscription Agreement dated as of July 28, 2008 by and among Marshall Edwards, Inc., Novogen Limited and Oppenheimer Funds, Inc. (incorporated by reference to Exhibit 10.13 to the Company's Current Report on Form 8-K filed on July 30, 2008 (File No. 000-50484)).

Table of Contents

Exhibit No.	Description
10.16	Marshall Edwards, Inc. 2008 Stock Omnibus Equity Compensation Plan (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on January 28, 2009 (Reg. No. 333-156985)).
10.17	License Agreement dated August 4, 2009 by and between Novogen Research Pty Limited and Marshall Edwards Pty Limited (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on August 7, 2009 (File No. 000-50484)).
10.18	Asset Purchase Agreement, dated as of December 21, 2010, between Marshall Edwards, Inc. and Novogen Limited and Novogen Pty Limited (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on December 22, 2010 (File No. 000-50484)).
10.19	At Market Issuance Sales Agreement, dated February 7, 2011, between Marshall Edwards, Inc. and McNicoll, Lewis & Vlax LLC (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on February 7, 2011 (File No. 000-50484)).
10.20	Stock Purchase Agreement, dated March 17, 2011, between Marshall Edwards, Inc. and Ironridge Global IV, Ltd., including the form of Certificate of Designations of Preferences, Rights and Limitations of Series B Preferred Stock attached as Exhibit 4 thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on March 18, 2011 (File No. 000-50484)).
10.21	Amended and Restated Securities Purchase Agreement, dated as of May 16, 2011, between Marshall Edwards, Inc. and the investors signatory thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 16, 2011 (File No. 000-50484)).
10.22	Amended and Restated Voting Agreement between Marshall Edwards, Inc. and Novogen Limited (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on May 16, 2011 (File No. 000-50484)).
10.23	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on August 29, 2011 (File No. 000-50484)).
10.24	Securities Subscription Agreement, dated as of September 27, 2011, between Marshall Edwards, Inc. and Novogen Limited (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on September 29, 2011 (File No. 000-50484)).
10.25	Letter, dated September 28, 2011, from Novogen Limited to the Company (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 29, 2011 (File No. 000-50484)).
10.26	Form of Supplemental Agreement between the Company and each of the investors party to that certain Amended and Restated Securities Purchase Agreement, dated as of May 16, 2011, by and among the Company and such investors (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 29, 2011 (File No. 000-50484)).
10.27	Securities Subscription Agreement, dated as of December 28, 2011, between Marshall Edwards, Inc. and Novogen Limited (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on September 29, 2011 (File No. 000-50484)).
21.1	Subsidiaries of Marshall Edwards, Inc. (incorporated by reference to Exhibit 21 to the Company's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129)).
23.1	Consent of BDO USA, LLP.*
23.2	Consent of BDO Audit (NSW-VIC) Pty Ltd.*

Table of Contents

Exhibit No.	Description
23.3	Consent of Morgan, Lewis & Bockius LLP (included in Exhibit 5.1 above).*
25.1	Powers of Attorney (included on the signature page hereto).*
99.1	Form of Instructions for Use of Marshall Edwards, Inc. Rights Certificate and Subscription Form.**
99.2	Form of Letter to Registered Holders of Common Stock.**
99.3	Form of Letter to Brokers and Other Nominee Holders.**
99.4	Form of Letter to Clients.**
99.5	Form of Beneficial Owner Election Form.**
99.6	Form of Nominee Holder Certification.**
99.7	Form of Notice of Guaranteed Delivery.**
99.8	Information for Substitute Form W-9.**

* Filed herewith.

** To be filed by amendment.

[Letterhead of Morgan, Lewis & Bockius LLP]

, 2012

Marshall Edwards, Inc.
11975 El Camino Real, Suite 101
San Diego, California 92130

Re: Registration Statement on Form S-1 (File No. 333-_____).

Ladies and Gentlemen:

We have acted as counsel to Marshall Edwards, Inc., a Delaware corporation (the "Company"), in connection with the filing of a Registration Statement on Form S-1 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Act"), with the Securities and Exchange Commission (the "Commission"). The Registration Statement registers both the subscription rights (the "Rights") entitling the holders thereof to purchase up to [_____] shares (the "Rights Shares") of the Company's common stock, par value \$0.00000002 per share, at a subscription price of \$[_____] per share, and the Rights Shares.

In connection with this opinion letter, we have examined the Registration Statement and originals, or copies certified or otherwise identified to our satisfaction, of the Restated Certificate of Incorporation, as amended, the Amended and Restated Bylaws of the Company and such other documents, records and other instruments as we have deemed appropriate for purposes of the opinion set forth herein.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents.

Based on the foregoing and subject to the qualifications set forth herein, we are of the opinion that:

1. the Rights have been duly authorized and, when issued in accordance with the terms of the Registration Statement, will be the valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except to the extent that enforcement thereof may be limited by applicable bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium, receivership or other laws relating to or affecting creditors' rights generally, and to general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity); and
2. the Rights Shares have been duly authorized and, when issued and delivered against payment therefor upon due exercise of Rights as contemplated in the Registration Statement, the Rights Shares will be validly issued, fully paid and non-assessable.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware and the federal laws of the United States of America.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading "Legal Matters" in the document that forms a part of such Registration Statement. In giving such consent, we do not thereby admit that we are acting within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

Consent of Independent Registered Public Accounting Firm

Marshall Edwards, Inc.
San Diego, California

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated September 28, 2011, relating to the consolidated financial statements of Marshall Edwards, Inc., which are incorporated by reference in that Prospectus.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO USA, LLP
San Diego, California
February 20, 2012

Marshall Edwards, Inc.
11975 El Camino Real, Suite 101
San Diego, CA 92130
United States of America

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated August 26, 2010, relating to the 2010 and 2009 consolidated financial statements of Marshall Edwards, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended June 30, 2011.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO Audit (NSW-VIC) Pty Ltd
Sydney, NSW, Australia
February 20, 2012