

MEDISTEM INC.
Form DEFM14A
February 11, 2014
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A
PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934
(AMENDMENT NO.)

Filed by the Registrant ☐

Filed by a Party other than the Registrant ☐

Check the appropriate box:

- ☐ Preliminary Proxy Statement
- ☐ **Confidential, For Use of the Commission Only** (as permitted by Rule 14a-6(e)(2))
- ☒ Definitive Proxy Statement
- ☐ Definitive Additional Materials
- ☐ Soliciting Material Pursuant to § 240.14a-12

MEDISTEM INC.
(Name of Registrant as Specified in its Charter)

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(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

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- ☒ No fee required.
- ☐ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
- (1) Title of each class of securities to which transaction applies:
- (2) Aggregate number of securities to which transaction applies:
- (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):
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- (1) Amount Previously Paid:
- (2) Form, Schedule or Registration Statement No.:
- (3) Filing Party:

(4) Date Filed:

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Dear Shareholder:

As previously announced, on December 19, 2013, Medistem Inc. entered into a merger agreement with Intrexon Corporation, under which a wholly owned subsidiary of Intrexon will merge with Medistem, with Medistem continuing as the surviving corporation. Medistem will continue as a wholly owned subsidiary of Intrexon. We refer to this transaction as the merger. If the merger is consummated, Medistem will no longer be a publicly held corporation.

The merger requires the approval of holders of a majority of the outstanding shares of Medistem common stock, and we are asking you to vote to adopt and approve the merger agreement and, thereby, to approve the transactions contemplated by the merger agreement, including the merger. If the merger agreement is approved by Medistem shareholders and the merger is completed, you will be entitled to receive for each share of Medistem common stock that you hold (other than shares with respect to which dissenter's rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or Medistem) consideration equal to \$1.35, payable as (i) \$0.27 in cash, without interest and subject to applicable withholding tax, and (ii) \$1.08 worth of shares of Intrexon common stock, based on the volume-weighted average price of Intrexon common stock, as reported on the New York Stock Exchange, for the 20 trading days immediately preceding the last trading day prior to the date of the closing of the merger, in each case subject to calculation and adjustment as described in this proxy statement/prospectus. In no event, however, will the total consideration paid to Medistem shareholders exceed \$26.0 million in the aggregate.

The following table sets forth the closing sale prices per share of Intrexon common stock and Medistem common stock as of December 19, 2013, the last trading day prior to the public announcement of the proposed merger, and as of February 10, 2014, the most recent practicable trading day prior to the date of this proxy statement/prospectus.

	Intrexon		Medistem	
	Common Stock		Common Stock	
December 19, 2013	\$	20.12	\$	0.86
February 10, 2014	\$	29.33	\$	1.10

Medistem common stock is listed on the OTC Markets Group's OTCQB marketplace under the symbol MEDS. Intrexon common stock is listed on the New York Stock Exchange under the symbol XON. The market prices of shares of Medistem common stock and Intrexon common stock are subject to fluctuation. As a result, you are urged to obtain current market quotations.

Your vote is very important. The record date for determining the shareholders entitled to receive notice of, and to vote at, the special meeting is January 31, 2014. We cannot complete the merger unless Medistem shareholders holding a majority of the outstanding shares of Medistem common stock as of the close of business on the record date vote in favor of the adoption and approval of the merger agreement at the special meeting. Whether or not you expect to attend the Medistem special meeting in person, if you are the record holder of shares, please vote your shares as promptly as possible by (a) accessing the Internet website specified on your proxy card, (b) calling the toll-free number specified on your proxy card or (c) signing and returning all proxy cards that you receive in the postage-paid envelope provided, so that your shares may be represented and voted at the Medistem special meeting. If your shares are registered in the name of a broker, bank or other holder of record, please follow the voting instructions you receive from the holder of record to vote your shares. If your shares are registered in the name of a broker, bank or other holder of record and you plan to attend the special meeting in person, please bring to the special meeting a letter, account statement or other evidence of your beneficial ownership as of the record date. **A failure to vote your shares, or to provide instructions to your broker, bank or nominee as to how to vote your shares, is the equivalent of a vote against the merger.**

In addition, at the special meeting you also will be asked to approve the adjournment of the special meeting under certain circumstances and to approve, on a non-binding, advisory basis, the compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger.

The Medistem board of directors has unanimously determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable, fair to, and in the best interests of, Medistem and its shareholders; adopted the merger agreement and approved the transactions contemplated thereby, including the merger; and unanimously recommends that you vote FOR the adoption and approval of the merger agreement,

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FOR the approval, on a non-binding, advisory basis, of the compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger and **FOR** the adjournment of the special meeting, if necessary to solicit additional proxies.

The obligations of Intrexon and Medistem to complete the merger are subject to the satisfaction or waiver of several conditions set forth in the merger agreement. More information about Intrexon, Medistem, the merger agreement and the transactions contemplated thereby, including the merger, is contained in this proxy statement/prospectus.

For a discussion of risk factors that you should consider in evaluating the transaction, see the section entitled Risk Factors beginning on page 24 of this proxy statement/prospectus.

We urge you to read the attached proxy statement/prospectus carefully and in its entirety.

Sincerely,

Alan J. Lewis, Ph.D.

Chief Executive Officer

Medistem Inc.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued under this proxy statement/prospectus or determined that this proxy statement/prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This proxy statement/prospectus is dated February 11, 2014, and is first being mailed to Medistem shareholders on or about February 12, 2014.

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**Notice of special meeting of shareholders
to be held on March 4, 2014**

Dear Shareholder:

You are cordially invited to attend a special meeting of shareholders of Medistem Inc. (Medistem), which will be held on March 4, 2014, at 9:00 a.m., local time, at the offices of Jones Day, 12265 El Camino Real, Suite 300, San Diego, California 92130. Shareholders of record who owned Medistem common stock at the close of business on January 31, 2014, are entitled to vote at the special meeting. At the special meeting we will ask you to consider and vote upon:

a proposal to adopt and approve the Agreement and Plan of Merger, dated as of December 19, 2013, as amended by the First Amendment to the Agreement and Plan of Merger, by and among Medistem, Intrexon Corporation, and XON Cells, Inc., which is referred to herein as the merger agreement, pursuant to which Medistem will merge with and into XON Cells, Inc., a wholly owned subsidiary of Intrexon, as more fully described in the accompanying proxy statement/prospectus. A copy of the merger agreement is attached as Annex A to the accompanying proxy statement/prospectus;

a proposal to approve, on a non-binding, advisory basis, the compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger; and

a proposal to adjourn the Medistem special meeting, if necessary or appropriate, to solicit additional proxies in favor of the proposal to adopt and approve the merger agreement, if there are not sufficient votes at the time of such adjournment to adopt and approve the merger agreement proposal.

At the special meeting, Medistem may also conduct any other business properly brought before the special meeting and any adjournment or postponement thereof.

The Medistem board of directors has unanimously determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable, fair to, and in the best interests of, Medistem and its shareholders; adopted the merger agreement and approved the transactions contemplated thereby, including the merger; and unanimously recommends that you vote FOR the adoption and approval of the merger agreement, FOR the approval, on a non-binding, advisory basis, of the compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger and FOR the adjournment of the special meeting, if necessary or appropriate, to solicit additional proxies.

To assure your representation at the special meeting, you are urged to submit your proxy as promptly as possible. Registered shareholders may vote by Internet, by telephone or by completing, signing, dating and returning the enclosed proxy card as promptly as possible in the enclosed postage prepaid envelope. Your shares will be voted in accordance with your instructions. You may attend the special meeting and vote in person even if you have previously returned your proxy card or voted by Internet or telephone.

A list of Medistem shareholders of record entitled to vote at the Medistem special meeting will be available during regular business hours at Medistem's executive offices and principal place of business at 9255 Towne Centre Drive, #450, San Diego, CA 92121 for inspection by shareholders of record of Medistem for any purpose germane to the special meeting. The list will also be available at the special meeting.

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If your shares are registered in the name of a broker, bank or other holder of record, please follow the voting instructions you receive from the holder of record to vote your shares. If your shares are registered in the name of a broker, bank or other holder of record and you plan to attend the special meeting in person, please bring a letter, account statement or other evidence of your beneficial ownership as of the record date to the special meeting.

Medistem shareholders who do not vote in favor of the merger proposal and follow certain procedural steps will be entitled to dissenters' rights under Chapter 92A.300-500, inclusive, of the Nevada Revised Statutes (NRS), provided they take the steps required to perfect their rights under Chapter 92A.300-500, inclusive, of the NRS. For more information regarding dissenters' rights, see the section entitled Dissenters' Rights.

Your vote is very important. Adoption and approval of the merger agreement requires the affirmative vote of holders of a majority of the shares of Medistem common stock issued and outstanding as of the close of business on the record date. A failure to vote your shares, or to provide instructions to your broker, bank or nominee as to how to vote your shares, is the equivalent of a vote against the merger. Please vote using one of the methods above to ensure that your vote will be counted. Your proxy may be revoked at any time before the vote at the special meeting by following the procedures outlined in this proxy statement/prospectus.

By Order of the Board of Directors,

Alan J. Lewis, Ph.D.

Chief Executive Officer

Medistem Inc.

San Diego, California

February 11, 2014

Additional information

This proxy statement/prospectus incorporates important business and financial information about Medistem from other documents filed with the U.S. Securities and Exchange Commission, referred to as the SEC, that are not included in or delivered with this proxy statement/prospectus. For a listing of documents incorporated by reference into this proxy statement/prospectus, please see the section entitled Where You Can Find More Information. This information is available to you without charge upon your request. This information is available for you to review at the SEC's public reference room located at 100 F Street, N.E., Room 1580, Washington, DC 20549, and through the SEC's website at www.sec.gov. You can also obtain the documents incorporated by reference into this proxy statement/prospectus by requesting them in writing or by telephone from Medistem at the following address and telephone number:

Medistem Inc.

9255 Towne Centre Drive, #450, San Diego, CA 92121 (858) 352-7071 Attn: Investor Relations

Investors may also consult Medistem's and Intrexon's websites for more information concerning Medistem, Intrexon and the merger described in this proxy statement/prospectus. Medistem's website is www.medisteminc.com and Intrexon's website is www.dna.com. Information included on these websites is not incorporated by reference into this proxy statement/prospectus.

If you would like to request documents, please do so by February 25, 2014, in order to receive them before the special meeting.

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About this document

This document, which forms part of a Registration Statement on Form S-4 filed by Intrexon with the SEC, constitutes a prospectus of Intrexon under Section 5 of the Securities Act of 1933, as amended, which is referred to herein as the Securities Act, with respect to the shares of Intrexon common stock to be issued to Medistem shareholders pursuant to the merger agreement. This document also constitutes a proxy statement of Medistem under Section 14(a) of the Securities Exchange Act of 1934, as amended, which is referred to herein as the Exchange Act, with respect to the Medistem special meeting at which Medistem shareholders will be asked to vote upon, among other things, the proposal to adopt and approve the merger agreement.

You should rely only on the information contained or incorporated by reference into this proxy statement/prospectus. No one has been authorized to provide you with information that is different from that contained in, or incorporated by reference into, this proxy statement/prospectus. You should not assume that the information contained in, or incorporated by reference into, this proxy statement/prospectus is accurate as of any date other than the date of this proxy statement/prospectus or the date of the SEC filing incorporated by reference herein, as applicable. Neither the mailing of this proxy statement/prospectus to Medistem shareholders nor the issuance by Intrexon of common stock in connection with the merger will create any implication to the contrary.

This proxy statement/prospectus does not constitute an offer to sell, or a solicitation of an offer to buy, any securities, or the solicitation of a proxy, in any jurisdiction in which or from any person to whom it is unlawful to make any such offer or solicitation in such jurisdiction. Information contained in this proxy statement/prospectus regarding Intrexon has been provided by Intrexon and information contained in this proxy statement/prospectus regarding Medistem has been provided by Medistem.

All references in this proxy statement/prospectus to: Medistem refer to Medistem Inc., a Nevada corporation, and its subsidiaries; Intrexon refer to Intrexon Corporation, a Virginia corporation, and its subsidiaries; Merger Sub refer to XON Cells, Inc., a Nevada corporation and a wholly owned subsidiary of Intrexon formed solely for the purpose of effecting the merger as described in this proxy statement/prospectus; and the combined company refer to Intrexon and each of its subsidiaries, including Medistem, immediately following completion of the transactions contemplated by the merger agreement.

All references in this proxy statement/prospectus to the merger agreement refer to the Agreement and Plan of Merger, dated as of December 19, 2013, by and among Intrexon, Merger Sub and Medistem, a copy of which is included as Annex A to this proxy statement/prospectus, as it may be amended from time to time, and all references to the merger refer to the merger of Merger Sub with and into Medistem, with Medistem continuing as the surviving corporation.

Although Nevada law generally refers to the term stockholders and Virginia law generally refers to the term shareholders to specify holders of the capital stock of a corporation, for convenience such holders are referred to in this proxy statement/prospectus as shareholders in accordance with the Virginia law terminology.

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Annex A	Agreement and Plan of Merger by and among Intrexon Corporation, XON Cells, Inc. and Medistem Inc. dated as of December 19, 2013, as amended by the First Amendment to the Agreement and Plan of Merger
Annex B	Chapter 92A.300-500 of the Nevada Revised Statutes
Annex C	Text of Griffin Securities, Inc. Opinion, dated December 18, 2013
Annex D	Form of Voting Agreement
Annex E	Form of Proxy Card of Medistem Inc.

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Questions and answers about the special meeting

Q: Why am I receiving this proxy statement/prospectus?

A: Intrexon and Medistem have agreed to the acquisition of Medistem by Intrexon under the terms of the merger agreement that is described in this proxy statement/prospectus. A copy of the merger agreement is attached to this proxy statement/prospectus as Annex A. You are receiving this proxy statement/prospectus because you have been identified as a shareholder of Medistem as of the close of business on the record date for the special meeting, which is January 31, 2014. This document serves as both a proxy statement of Medistem, used to solicit proxies for the special meeting of Medistem shareholders, and as a prospectus of Intrexon, used to offer shares of Intrexon common stock to Medistem shareholders in exchange for shares of Medistem common stock pursuant to the terms of the merger agreement. This document contains important information about the merger, the shares of Intrexon common stock to be issued pursuant to the merger and the special meeting of Medistem shareholders, and you should read it carefully.

Q: What am I being asked to vote on?

A: In order to complete the merger, Medistem shareholders must vote in favor of a proposal to adopt and approve the merger agreement, which is referred to herein as the merger proposal, and all other conditions to the merger must be satisfied or waived. Medistem will hold a special meeting to obtain this approval, which is referred to herein as the special meeting. The enclosed proxy materials allow you to vote your shares without attending the special meeting.

In addition, you are being asked to vote on a proposal to approve, on a non-binding, advisory basis, the compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger, which is referred to herein as the merger-related compensation payments proposal.

You are also being asked to vote on a proposal to adjourn the Medistem special meeting, if necessary or appropriate, to solicit additional proxies in favor of the merger proposal if there are not sufficient votes at the time of such adjournment to adopt and approve the merger proposal.

Your vote is important. We encourage you to vote as soon as possible.

Q: What consideration will I receive in connection with the merger?

A: At the effective time of the merger, each share of Medistem common stock issued and outstanding immediately prior to the effective time of the merger (other than shares with respect to which dissenter's rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or Medistem) will be converted into the right to receive \$1.35, payable as (i) \$0.27 in cash without interest and subject to applicable withholding tax, which is referred to herein as the cash consideration and (ii) \$1.08 worth of shares of Intrexon common stock, determined as the number of shares represented by \$1.08 divided by the volume-weighted average price of Intrexon common stock, as reported on the New York Stock Exchange, which is referred to herein as the NYSE, for the 20 trading days immediately preceding the last trading day prior to the date of the closing of the merger, which price is referred to

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herein as the Intrexon stock value, and which consideration paid in shares of Intrexon common stock is referred to herein as the stock consideration, in each case subject to adjustment as described below under the question Why is the merger consideration subject to adjustment? The cash consideration together with the stock consideration is referred to herein as the merger consideration. In no event, however, will the total merger consideration paid to Medistem shareholders exceed \$26.0 million in the aggregate.

Medistem shareholders will not receive any fractional shares of Intrexon common stock in the merger. Instead, any shareholder who would otherwise be entitled to a fractional share of Intrexon common stock will be entitled to receive an amount in cash (rounded down to the nearest whole cent), without interest, equal to the product of such fraction multiplied by the volume-weighted average price of Intrexon common stock, as reported on NYSE, for the 20 trading days immediately preceding the last trading day prior to the date of the closing of the merger, which is referred to herein as the Intrexon stock value.

Q: Will the merger consideration I receive in the merger increase if the results of operations of Intrexon improve or if the market price of Intrexon common stock increases?

A: No. The merger consideration payable for each share of Medistem common stock at closing is fixed at (i) \$0.27 in cash without interest and subject to applicable withholding tax, which is referred to herein as the cash consideration and (ii) \$1.08 worth of shares of Intrexon common stock, determined as the number of shares represented by \$1.08 divided by the volume-weighted average price of Intrexon common stock, as reported on the NYSE, for the 20 trading days immediately preceding the last trading day prior to the date of the closing of the merger. The payment received at closing will not change regardless of the results of operations of Intrexon or the price of publicly traded common stock of Intrexon.

Q: How will the merger affect Medistem options to purchase common stock, restricted stock units, warrants and convertible promissory notes?

A: In connection with the merger, each outstanding Medistem stock option, restricted stock unit and warrant will vest fully and may be exercised for a period of at least 15 days prior to the consummation of the merger. Any stock option or warrant that is not exercised and remains outstanding at the consummation of the merger will be converted into the right to receive cash and Intrexon common stock. As of the effective time of the merger, each outstanding Medistem stock option shall be canceled in exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, (i) \$1.35 minus the exercise price of such stock option divided by (ii) \$1.35 (the Net Option Share Amount), which shall be paid in (A) a cash amount equal to the product of the Net Option Share Amount multiplied by \$0.27 and (B) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (1) the product of the Net Option Share Amount multiplied by \$1.08, divided by (2) the Intrexon stock value. If the exercise price per share of any such stock option is equal to or greater than \$1.35, such stock option shall be canceled without any payment or other consideration being made in respect thereof.

As of the effective time of the merger, each outstanding warrant to purchase Medistem common stock shall be canceled in exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, (i) \$1.35 minus the exercise price of

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such warrant divided by (ii) \$1.35 (the Net Warrant Share Amount), which shall be paid in (A) a cash amount equal to the product of the Net Warrant Share Amount multiplied by \$0.27 and (B) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (1) the product of the Net Warrant Share Amount multiplied by \$1.08, divided by (2) the Intrexon stock value. If the exercise price per share of any such warrant is equal to or greater than \$1.35, such warrant shall be canceled without any payment or other consideration being made in respect thereof.

As of the effective time of the merger, each outstanding promissory note convertible into Medistem common stock shall be canceled in exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, the total number of shares of Medistem common stock to which such promissory note was convertible immediately prior to the effective time of the merger (the Net Note Share Amount), which shall be paid in (i) a cash amount equal to the product of the Net Note Share Amount multiplied by \$0.27 and (ii) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (A) the product of the Net Note Share Amount multiplied by \$1.08, divided by (B) the Intrexon stock value. If the conversion price per share of any such promissory note is equal to or greater than \$1.35, the outstanding principal balance of such promissory note, together with all accrued but unpaid interest thereon, shall instead be paid in full.

Notwithstanding the foregoing, the aggregate number of shares of Intrexon common stock issued or issuable in the merger may not exceed 19.9% of the number of shares of Intrexon common stock outstanding immediately prior to the effective time of the merger.

Q: What happens if the merger is not completed?

A: If the merger proposal is not approved by Medistem's shareholders or if the merger is not completed for any other reason, you will not receive any payment for your shares of Medistem common stock in connection with the merger. Instead, Medistem will remain an independent public company and its common stock will continue to be listed and traded on the OTC Markets Group's OTCQB marketplace as long as it continues to meet the requirements for such listing and trading. If the merger agreement is terminated in certain circumstances, Medistem would be required to pay Intrexon a termination fee of either \$750,000 or \$1.0 million and would be required to repay the outstanding principal balance on the loans made to Medistem by Intrexon pursuant to two promissory notes in the aggregate amount of \$700,000 in connection with the proposed merger. In other circumstances, if the merger agreement is terminated, Intrexon would be required to pay Medistem a termination fee of \$150,000. See the section entitled "The Merger Agreement - Termination Fees."

Q: When and where will the meeting be held?

A: The Medistem special meeting will be held at 9:00 a.m., local time, on March 4, 2014, at the offices of Jones Day, 12265 El Camino Real, Suite 300, San Diego, California 92130.

Q: What do I need to do now?

A: Carefully read and consider the information contained in and incorporated by reference into this proxy statement/prospectus, including its annexes. After you carefully read this proxy

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statement/prospectus, follow the voting instructions below. In order to assure that your shares are voted, please submit your proxy as instructed on your proxy or voting instruction card even if you currently plan to attend the special meeting in person.

Q: How do I vote?

A: You may vote For, Against or Abstain on any proposal. Votes will be counted by the inspector of elections appointed for the special meeting. The procedures for voting are as follows:

Voting by Proxy

Registered shareholders may vote by mail, by telephone or by Internet:

To vote by mail, please complete, sign, date and mail your proxy card in the postage prepaid envelope provided. Proxies should be mailed sufficiently in advance to ensure receipt prior to the special meeting.

To vote by telephone, call toll-free 1-800-690-6903 from any touch-tone telephone and follow the instructions. Have your proxy card available when you call. If you vote by phone, you do not need to mail your proxy card. Telephone voting is available until 11:59 p.m., Eastern Time, on March 3, 2014.

You can vote on the Internet at www.proxyvote.com. Have your proxy card in hand when going online and follow the online instructions. If you vote by the Internet, you do not need to mail your proxy card. Internet voting is available up until 11:59 p.m., Eastern Time, on March 3, 2014.

If your shares are held of record in the name of a bank, broker or other nominee you should follow the separate instructions that the nominee provides to you. Although most banks and brokers now offer telephone and Internet voting, availability and specific processes will depend on their voting arrangements.

If the special meeting is postponed or adjourned for any reason, at any subsequent reconvening of the special meeting all proxies will be voted in the same manner as the proxies would have been voted at the original convening of the special meeting, except for any proxies that have at that time effectively been revoked or withdrawn, even if the proxies had been effectively voted on the same or any other matter at a previous meeting.

Voting in Person at the Special Meeting

If you are a registered holder and attend the special meeting and wish to vote in person, you may request a ballot when you arrive. If your shares are held of record in the name of your bank, broker or other nominee and you would like to vote in person at the special meeting, you must bring to the special meeting a letter, account statement or other evidence from the nominee indicating that you were the beneficial owner of the shares on the record date for the special meeting and a legal proxy from the nominee.

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Q: How does the Medistem board of directors recommend that I vote?

A: The Medistem board of directors reviewed and considered the terms and conditions of the merger agreement and the transactions contemplated thereby, including the merger, and, after careful consideration, has unanimously:

determined that the merger agreement and the transactions contemplated thereby, including the merger, are advisable, fair to, and in the best interests of, Medistem and its shareholders;

adopted the merger agreement and approved the transactions contemplated thereby, including the merger; and

resolved to recommend the adoption and approval of the merger agreement to Medistem's shareholders.

The Medistem board of directors unanimously recommends that Medistem's shareholders vote **FOR** the merger proposal, **FOR** the approval, on a non-binding, advisory basis, of the merger-related compensation payments proposal and **FOR** the adjournment of the special meeting, if necessary to solicit additional proxies.

Q: What vote is required to approve each proposal?

A: The voting requirements to approve the proposals are as follows:

The approval of the merger proposal requires the affirmative vote of the shareholders of record as of the record date holding a majority of all outstanding shares of Medistem's common stock on that date.

The approval, on a non-binding, advisory basis, of compensation payable to Medistem's named executive officers that is based on or otherwise relates to the merger requires that the votes cast in favor of this proposal exceed the votes cast against this proposal, provided a quorum is present.

The approval of the adjournment of the special meeting, to solicit additional proxies in favor of the merger proposal if there are not sufficient votes at the time of such adjournment to approve the merger proposal, requires the affirmative vote of the holders of a majority of the shares of Medistem common stock present, in person or by proxy, at the special meeting and entitled to vote thereon, if a quorum is not present. If a quorum is present, the approval of the adjournment of the special meeting, to solicit proxies in favor of the merger proposal if there are not sufficient votes at the time of such adjournment to approve the merger proposal, requires that the votes cast in favor of the adjournment proposal exceed the votes cast against the adjournment proposal.

Q: How are the officers and directors of Medistem going to vote in the merger?

A: In connection with entering into the merger agreement, each of the directors and executive officers of Medistem and their respective permitted transferees, as applicable, in their individual capacities, each of whom are referred to herein as a supporting shareholder, entered into a voting agreement pursuant to which the supporting shareholder agreed to, among other things, vote his shares of Medistem common stock (i) in favor of the merger

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proposal and (ii) against an acquisition proposal other than the merger, subject to any termination of the voting agreement in accordance with its terms. In addition, the supporting shareholders agreed not to directly or indirectly transfer their respective shares of Medistem common stock during the term of the voting agreement, subject to certain limited exceptions. The voting agreements may be terminated by the supporting shareholders if the Medistem board of directors has withdrawn or changed its recommendation in favor of a competing transaction. As of the record date, the supporting shareholders as a group owned and were entitled to vote 9,243,218 shares of Medistem common stock, or approximately 64% of the outstanding shares of Medistem common stock on that date.

Q: What constitutes a quorum?

A: Shareholders who hold at least a majority of the issued and outstanding Medistem common stock as of the close of business on the record date and who are entitled to vote must be present or represented by proxy in order to constitute a quorum to conduct the special meeting.

Q: What will happen if I return my proxy card without indicating how to vote?

A: If you sign and return your proxy card without indicating how to vote on any particular proposal, the Medistem common stock represented by your proxy will be voted in favor of that proposal.

Q: What will happen if I fail to vote or I abstain from voting?

A: If you are a shareholder of record and do not vote by completing your proxy card, by telephone, through the Internet, or in person at the special meeting, your shares will not be voted. This will have the same effect as voting against the merger proposal but will have no effect on the outcome of the other two proposals. If your shares are held in street name by a bank, brokerage firm or other nominee, and you do not provide your bank, brokerage firm or other nominee with instructions as to how to vote your shares, your shares will not be voted at the special meeting. This will have the same effect as voting against the merger proposal but will have no effect on the outcome of the other two proposals.

Q: How many votes do I and others have?

A: Each Medistem shareholder is entitled to one vote for each share of Medistem common stock owned as of the record date. As of the close of business on the record date, there were 14,454,288 issued and outstanding shares of Medistem common stock. As of the record date, the directors and executive officers and their affiliates as a group owned and were entitled to vote 9,243,218 shares of Medistem common stock, or approximately 64% of the outstanding shares of Medistem common stock on that date.

Q: If my shares are held in street name by my broker, bank or other nominee, will my broker, bank or nominee vote my shares for me?

A: If you hold your shares through a broker, bank or other nominee, you must provide your broker, bank or nominee with instructions on how to vote your shares. Please follow the voting instructions provided by your broker, bank or nominee. Please note that you may not

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vote shares held in street name by returning a proxy card directly to Medistem or by voting in person at the special meeting unless you provide a legal proxy, which you must obtain from your broker, bank or other nominee. Brokers, banks and other nominees who hold shares of Medistem common stock on behalf of their customers may not vote such shares or give a proxy to Medistem to vote those shares without specific instructions from their customers.

Q: Am I entitled to dissenters' rights?

A: Yes. Medistem shareholders who do not vote in favor of the merger proposal and follow certain procedural steps will be entitled to dissenters' rights under Chapter 92A.300-500 of the Nevada Revised Statutes, which is referred to herein as the NRS, provided they take the steps required to perfect their rights under chapter 92A.300-500 of the NRS. For more information regarding dissenters' rights, see the section entitled Dissenters' Rights. In addition, a copy of Chapter 92A.300-500 of the NRS is attached as Annex B to this proxy statement.

Q: Can I change my vote after I have returned a proxy or voting instruction card?

A: Yes. If you are a registered holder and give your proxy card to Medistem or vote by telephone or the Internet, you have the power to revoke your proxy or change your vote by taking any of the following actions before your proxy is voted at the special meeting:

voting again by telephone or Internet any time prior to 11:59 p.m., Eastern Time, on March 3, 2014;

notifying the Secretary of Medistem in writing no later than the beginning of the special meeting of your revocation;

delivering to the Secretary of Medistem no later than the beginning of the special meeting a revised signed proxy card bearing a later date; or

attending the special meeting and voting in person, which will automatically cancel any proxy previously given, or revoking your proxy in person, but your attendance alone will not revoke any proxy that you have previously given.

If your shares are held in street name by your broker, bank or other nominee, you should contact them to change your vote.

Q: When do you expect the merger to be completed?

A: Intrexon and Medistem expect to complete the merger during the first quarter of 2014 if the approval of the merger proposal is obtained, assuming the other conditions that are set forth in the merger agreement to the consummation of the merger are satisfied or waived. However, it is possible that the merger will not be consummated within that timeframe.

Q: Do I need to do anything with my Medistem common stock certificates now?

A: No. After the merger is completed, if you held certificates representing shares of Medistem common stock prior to the merger, Intrexon's exchange agent will send you a letter of

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transmittal and instructions for exchanging your shares of Medistem common stock for the merger consideration. Upon surrender of the certificates for cancellation along with the executed letter of transmittal and other required documents described in the instructions, you will receive the merger consideration. The shares of Intrexon common stock you receive in the merger will be issued in book-entry form. **DO NOT SEND ANY STOCK CERTIFICATES WITH YOUR PROXY.**

Q: Do I need identification to attend the Medistem special meeting in person?

A: Yes. Please bring proper identification, together with proof that you are a record owner of Medistem common stock. If your shares are held of record in the name of your bank, broker or other nominee and you would like to vote in person at the special meeting, you must bring to the special meeting a letter, account statement or other evidence from the nominee indicating that you were the beneficial owner of the shares on the record date for the special meeting.

Q: Who can help answer my questions?

A: If you have questions about the merger agreement, the merger or the merger proposal or the other matters to be voted on at the special meeting or desire additional copies of this proxy statement/prospectus or additional proxy cards, you should contact Medistem, 9255 Towne Centre Drive, #450, San Diego, CA 92121 (858) 352-7071 Attn: Investor Relations.

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Summary

This summary highlights selected information contained or incorporated by reference in this proxy statement/prospectus and may not contain all of the information that is important to you. This summary is not intended to be complete and reference is made to, and this summary is qualified in its entirety by, the more detailed information contained or incorporated by reference in this proxy statement/prospectus and the annexes attached to this proxy statement/prospectus. You may obtain the information incorporated by reference into this proxy statement/prospectus without charge by following the instructions in the section entitled "Where You Can Find More Information." Page references have been included parenthetically to direct you to a more complete description of the topics presented in this summary.

The companies (see page 79)

Intrexon Corporation

Intrexon believes it is a leader in the field of synthetic biology, an emerging and rapidly evolving discipline that applies engineering principles to biological systems. Using its suite of proprietary and complementary technologies, Intrexon designs, builds and regulates gene programs, or sequences of DNA that control cellular function, and cellular systems, or activities that take place within a cell and the interaction of those systems in the greater cellular environment, to enable the development of new and improved products and manufacturing processes across a variety of end markets, including healthcare, food, energy and environmental sciences. Intrexon's synthetic biology capabilities include the ability to precisely control the amount, location and modification of biological molecules to control the function and output of living cells and optimize for desired results at an industrial scale.

Working with its collaborators, Intrexon seeks to create more effective, less costly and more sustainable solutions than can be provided through current industry practices. Intrexon believes its approach to synthetic biology can enable new and improved biotherapeutics, increase the productivity and quality of food crops and livestock, create sustainable alternative energy sources and chemical feedstocks and provide for enhanced environmental remediation. Intrexon's business model is to commercialize its technologies through exclusive channel collaborations, or ECCs, with collaborators that have industry expertise, development resources and sales and marketing capabilities to bring new and improved products and processes to market.

Intrexon's common stock is traded on the NYSE under the symbol XON. The principal executive offices of Intrexon are located at 222 Lakeview Avenue, Suite 1400, West Palm Beach, Florida 33401, and its telephone number is (561) 410-7000.

For more information regarding Intrexon's business, see the section entitled "Description of Intrexon's Business."

Medistem Inc.

Medistem is focused on the development of the Endometrial Regenerative Cell (ERC), a universal donor adult stem cell product. ERCs possess specialized abilities to stimulate new blood vessel growth and can differentiate into lung, liver, heart, brain, bone, cartilage, fat and pancreatic tissue. These unique properties have applications for treatment of critical limb ischemia (CLI), congestive heart failure (CHF), neurodegenerative diseases, liver failure, kidney failure, and diabetes.

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Since September 7, 2013, shares of Medistem common stock have traded on the OTC Markets Group's OTCQB marketplace under the stock symbol MEDS. Prior to that time, shares of Medistem common stock traded on the OTCPink marketplace. The principal executive offices of Medistem are located at 9255 Towne Centre Drive, #450, San Diego, CA 92121, and its telephone number is (858) 352-7071.

For more information regarding Medistem's business, see the section entitled Description of Medistem's Business.

XON Cells, Inc.

XON Cells, Inc., a wholly owned subsidiary of Intrexon, is a Nevada corporation formed solely for the purpose of effecting the merger and is referred to herein as Merger Sub.

Merger Sub has not conducted any activities other than those incidental to its formation and the matters contemplated by the merger agreement, including the preparation of applicable regulatory filings in connection with the merger. The principal executive offices of Merger Sub are located at 20374 Seneca Meadows Parkway, Germantown, Maryland 20876, and its telephone number is (301) 556-9900.

The merger (see page 81)

Pursuant to the terms and subject to the conditions of the merger agreement, at the closing of the proposed transactions contemplated by the merger agreement, Merger Sub will be merged with and into Medistem, and Medistem will continue as the surviving corporation of the merger and as a wholly owned subsidiary of Intrexon. Following the merger, Medistem will no longer be a publicly traded corporation. In the event that any shareholder of Medistem exercises dissenters' rights and does not withdraw or settle such exercise prior to the closing of the merger, then immediately following the closing, Medistem will be merged with and into a newly formed limited liability company that is a wholly owned subsidiary of Intrexon.

Merger consideration (see page 109)

At the effective time of the merger, each share of Medistem common stock (other than shares with respect to which dissenters' rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or Medistem), will be converted into the right to receive consideration equal to \$1.35, payable in (i) \$0.27 in cash, without interest and subject to applicable withholding tax, referred to as the cash consideration, and (ii) \$1.08 worth of shares of Intrexon common stock, referred to as the stock consideration, determined as the number of shares represented by \$1.08 divided by the volume-weighted average price of Intrexon common stock, as reported on the New York Stock Exchange, for the 20 trading days immediately preceding the last trading day prior to the date of the closing of the merger, in each case subject to calculation and adjustment as described in this proxy statement/prospectus. In no event will the total consideration paid to Medistem shareholders exceed \$26.0 million in the aggregate.

Medistem shareholders will not receive any fractional shares of Intrexon common stock in the merger. Instead, any shareholder who would otherwise be entitled to a fractional share of Intrexon common stock will be entitled to receive an amount in cash (rounded down to the nearest whole cent), without interest, equal to the product of such fraction multiplied by the Intrexon stock value.

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Treatment of Medistem equity awards, warrants and convertible promissory notes (see page 110)

In connection with the merger, as of the effective time of the merger, each outstanding Medistem stock option shall be canceled in exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, (i) \$1.35 minus the exercise price of such stock option divided by (ii) \$1.35 (the Net Option Share Amount), which shall be paid in (A) a cash amount equal to the product of the Net Option Share Amount multiplied by \$0.27 and (B) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (1) the product of the Net Option Share Amount multiplied by \$1.08, divided by (2) the Intrexon stock value. If the exercise price per share of any such stock option is equal to or greater than \$1.35, such stock option shall be canceled without any payment or other consideration being made in respect thereof.

As of the effective time of the merger, each outstanding warrant to purchase Medistem common stock shall be canceled in exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, (i) \$1.35 minus the exercise price of such warrant divided by (ii) \$1.35 (the Net Warrant Share Amount), which shall be paid in (A) a cash amount equal to the product of the Net Warrant Share Amount multiplied by \$0.27 and (B) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (1) the product of the Net Warrant Share Amount multiplied by \$1.08, divided by (2) the Intrexon stock value. If the exercise price per share of any such warrant is equal to or greater than \$1.35, such warrant shall be canceled without any payment or other consideration being made in respect thereof.

As of the effective time of the merger, each outstanding promissory note convertible into Medistem common stock shall be canceled exchange for the right to receive a combination of cash and shares of Intrexon common stock as described below, the total number of shares of Medistem common stock to which such promissory note was convertible immediately prior to the effective time of the merger (the Net Note Share Amount), which shall be paid in (i) a cash amount equal to the product of the Net Note Share Amount multiplied by \$0.27 and (ii) the number of whole and fractional shares of Intrexon common stock equal to the quotient of (A) the product of the Net Note Share Amount multiplied by \$1.08, divided by (B) the Intrexon stock value. If the conversion price per share of any such promissory note is equal to or greater than \$1.35, the outstanding principal balance of such promissory note, together with all accrued but unpaid interest thereon, shall instead be paid in full.

Notwithstanding the foregoing, the aggregate number of shares of Intrexon common stock issued or issuable in the merger may not exceed 19.9% of the number of shares of Intrexon common stock outstanding immediately prior to the effective time of the merger.

Recommendations of the Medistem board of directors (see page 73)

The Medistem board of directors unanimously recommends that Medistem's shareholders vote **FOR** the merger proposal, **FOR** the approval, on a non-binding, advisory basis, of the merger-related compensation payments proposal and **FOR** the adjournment of the special meeting, if necessary to solicit additional proxies.

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Medistem's reasons for the merger (see page 89)

In the course of reaching its decision to adopt the merger agreement and to recommend that Medistem shareholders vote to approve the merger proposal, Medistem's board of directors consulted with its senior management, financial advisor and legal counsel, reviewed a significant amount of information and considered a number of factors, including, among others, those contained in the section entitled "The Merger" Medistem's Reasons for the Merger and Recommendation of the Medistem Board of Directors.

Opinion of Griffin Securities, Inc. (see page 93)

The Board received an opinion, dated December 18, 2013, from Griffin Securities, Inc., referred to herein as "Griffin", that, as of that date and based on and subject to assumptions made, matters considered and limitations on the scope of review undertaken by Griffin as set forth therein, the merger consideration was fair, from a financial point of view, to the holders of the shares of Medistem common stock entitled to receive such consideration. The full text of Griffin's written opinion, which sets forth, among other things, the procedures followed, assumptions made, matters considered and limitations on the scope of review undertaken by Griffin in rendering its opinion is attached as Annex C to this proxy statement/prospectus. The opinion was delivered to the Medistem board of directors and addresses only the fairness, from a financial point of view, of the merger consideration to the holders of shares of Medistem common stock entitled to receive such consideration. The opinion does not address any other aspect of the proposed merger and does not constitute a recommendation to the Medistem board of directors or to any other persons in respect of the proposed merger, including as to how any holder of shares of Medistem common stock should vote or act in respect of the proposed merger.

Interests of Medistem's directors and executive officers in the merger (see page 98)

In considering the recommendation of the Medistem board of directors to approve the merger proposal, Medistem shareholders should be aware that Medistem's directors and executive officers may have interests in the merger that are different from, or in addition to, the interests of shareholders generally. The Medistem board of directors was aware of and considered these interests, among other matters, in adopting the merger agreement and approving the merger, and in recommending that the merger agreement be approved by shareholders. These interests include accelerated vesting of certain outstanding Medistem equity awards held by directors and executive officers of Medistem in connection with the merger, potential continued employment of executive officers following the merger, the continuation, for a period of six years following the closing of the merger, of indemnification and insurance coverage of directors and executive officers, and the advancement of expenses in the form of a loan or loans to Medistem by Intrexon for advancement to Medistem's directors and officers for claims in excess of existing Medistem insurance coverage, up to an aggregate of \$2.0 million of loans outstanding at any time, related to directors' and officers' actions in fulfilling their fiduciary duties in connection with Medistem's entry into the merger agreement for the period from the date the merger agreement was signed until consummation of the merger.

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Voting agreements (see page 126)

In connection with entering into the merger agreement, each of the directors and executive officers of Medistem and their respective permitted transferees, as applicable, in their individual capacities, each of whom are referred to herein as a supporting shareholder, entered into a voting agreement pursuant to which the supporting shareholder agreed to, among other things, vote his shares of Medistem common stock (i) in favor of the merger proposal and (ii) against an acquisition proposal other than the merger, subject to any termination of the voting agreement in accordance with its terms. In addition, the supporting shareholders agreed not to directly or indirectly transfer their respective shares of Medistem common stock during the term of the voting agreement, subject to certain limited exceptions. The voting agreements may be terminated by the supporting shareholders if the Medistem board of directors has withdrawn or changed its recommendation in favor of a competing transaction. As of the record date, the supporting shareholders as a group owned and were entitled to vote 9,243,218 shares of Medistem common stock, or approximately 64% of the outstanding shares of Medistem common stock on that date.

Litigation relating to the merger (see page 107)

In connection with the merger, four purported class action lawsuits brought on behalf of all Medistem shareholders were filed; one in the Eighth Judicial District Court in Clark County, Nevada: *Iden v. Medistem, et al.*, No. A-13-693813-C, filed December 31, 2013; and three in the Superior Court of California in San Diego County, California: *Bachand v. Medistem, et al.*, No. 37-2013-00081729-CU-SL-CTL, filed December 31, 2013; *Parent v. Medistem, et al.*, No. 37-2014-00083393-CU-SL-CTL, filed January 14, 2014; and *Raymond v. Medistem, et al.*, No. 37-2014-00083495-CU-SL-CTL, filed January 15, 2014. The complaints in the pending lawsuits are similar. Each complaint names Medistem, members of Medistem's board of directors, Intrexon, and Merger Sub as defendants. The complaints allege, among other things, that Medistem's board of directors breached its fiduciary duties to its shareholders by failing to maximize shareholder value or to engage in a fair sale process before approving the proposed acquisition of Medistem by Intrexon. The complaints further allege that Medistem, Intrexon and Merger Sub aided and abetted the Medistem board of directors in its breaches of fiduciary duty. The plaintiffs seek relief that includes an injunction prohibiting the consummation of the merger, rescission to the extent the merger terms have already been implemented, damages for the breaches of fiduciary duty, payment of plaintiffs' attorneys' fees and costs and, in the Nevada action, a contingent monetary award in an unspecified amount. Medistem and its board of directors believe that these allegations are without merit and intend to defend the lawsuits vigorously. There can be no assurance, however, with regard to the outcome of these lawsuits.

Dissenters' rights (see page 152)

Medistem shareholders who do not vote in favor of the adoption and approval of the merger agreement and follow certain procedural steps will be entitled to dissenters' rights under Chapter 92A.300-500 of the NRS, provided they take the steps required to perfect their rights under Chapter 92A.300-500 of the NRS.

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The merger agreement (see page 109)

A copy of the merger agreement, as amended, is attached as Annex A to this proxy statement/prospectus. You are encouraged to read the entire merger agreement carefully because it is the principal legal document governing the merger.

Conditions to completion of the merger (see page 121)

Mutual conditions

Each party's obligation to complete the merger is subject to the satisfaction or waiver of certain conditions, including:

the registration statement shall have been declared effective by the SEC and a stop order suspending the effectiveness of the registration shall not have been issued or a proceeding initiated or threatened for such purpose and not have been withdrawn;

the merger agreement shall have been adopted by the affirmative vote of the holders of a majority of the outstanding shares of Medistem's common stock;

no federal or state court of competent jurisdiction or other governmental entity shall have enacted, adopted, issued, promulgated, enforced or entered any law, order, decree, judgment, injunction or other ruling, which prevents or prohibits consummation of the merger; and

the shares of Intrexon's common stock issuable to Medistem's shareholders in the merger shall have been approved for listing on NYSE.

Conditions to the obligations of Medistem

The obligations of Medistem to complete the merger are subject to the satisfaction or waiver of certain additional conditions, including:

the representations and warranties of Intrexon shall be, with certain exceptions, true and correct in all respects, as of the closing date of the merger as though made on such date. The truth and accuracy of the representation and warranties shall be deemed to be satisfied so long as any failure of such representations and warranties to be true and correct would not be reasonably expected to have or result in, individually or in the aggregate, a material adverse effect with respect to Intrexon. Medistem shall have received a certificate of the chief executive officer or chief financial officer of Intrexon to that effect;

Intrexon shall have performed in all material respects the covenants and agreements (except for certain of the conduct of business covenants, which shall be subject to a material adverse effect standard) required to be performed by it under the merger agreement, and Medistem shall have received a certificate signed on behalf of Intrexon by its chief executive officer or chief financial officer to such effect; and

Medistem shall have received an opinion of counsel, dated as of the closing date, that the merger will qualify for United States federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code.

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Conditions to the obligations of Intrexon and merger sub

The obligations of Intrexon and Merger Sub to complete the merger are subject to the satisfaction or waiver of certain additional conditions, including

the representations and warranties of Medistem shall be, with certain exceptions, true and correct in all respects, as of the closing date of the merger as though made on such date. The truth and accuracy of the representation and warranties shall be deemed to be satisfied so long as any failure of such representations and warranties to be true and correct would not be reasonably expected to have or result in, individually or in the aggregate, a material adverse effect with respect to Medistem. Intrexon shall have received a certificate of the chief executive officer or chief financial officer of Medistem to that effect;

Medistem shall have performed in all material respects the covenants and agreements (except for certain of the conduct of business covenants, which shall be subject to a material adverse effect standard) required to be performed by it under the merger agreement, and Intrexon shall have received a certificate signed on behalf of Medistem by its chief executive officer or chief financial officer to such effect;

Medistem shall have obtained all of the consents required pursuant to the merger agreement;

Intrexon shall have received an opinion of counsel, dated as of the closing date, that the merger will qualify for United States federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code;

holders of no more than 7.5% of the outstanding shares of Medistem's common stock shall have validly exercised, or remained entitled to exercise, their dissenters' rights under Section 92A.440 of the NRS;

Intrexon shall have received the promissory note set forth in the merger agreement duly executed by Medistem;

Intrexon shall have completed, to its satisfaction in its sole discretion, its business, financial and legal due diligence investigation of Medistem; provided that this condition was no longer applicable on and after January 16, 2014;

the aggregate number of shares of Intrexon common stock issuable in the merger shall not be equal to or greater than 19.9% of the shares of Intrexon's common stock outstanding as of immediately prior to the effective time of the merger;

Thomas E. Ichim, Ph.D. shall have executed and delivered an employment agreement with Intrexon or Medistem, dated as of the closing date of the merger, and in a form to be mutually agreed by Intrexon and Medistem; and

each current employee, officer and consultant of Medistem and each its subsidiaries shall have executed a proprietary information and inventions assignment agreement in the form presented by Intrexon.

Medistem's ability to solicit other offers (see page 118)

Under the terms of the merger agreement, until 11:59 p.m., California time, on January 9, 2014 (referred to herein as the go shop period), Medistem was permitted to (i) solicit inquiries or

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proposals or offers to acquire Medistem or (ii) participate in discussions or negotiations regarding proposals or offers to acquire Medistem. On December 23, 2013, Medistem initiated a go shop outreach to 16 candidate biopharmaceutical companies based in Australia, Europe, Japan, Korea, and the U.S. Of these candidates, 12 indicated they had no interest and two candidates did not respond. One candidate responded that they had an interest in a regional collaboration. One candidate requested access to Medistem's manufacturing trade secrets. Given that the candidate is a direct competitor, management deemed that it was in the best interest of Medistem and its shareholders to decline the request and proceed with the merger.

Termination of the merger agreement (see page 123)

The merger agreement may be terminated under certain circumstances, including:

by mutual written consent of Intrexon and Medistem;

by either party if the merger is not consummated on or before March 12, 2014 (unless the SEC elects to review the registration statement, in which case such date shall be extended to the earlier of May 31, 2014 or 45 days after the date that Intrexon files its annual report on Form 10-K that includes Intrexon's audited financial statements for the year ended December 31, 2013);

by either party if a federal or state court of competent jurisdiction or other governmental entity shall make a ruling which prevents or prohibits consummation of the merger;

by either party if Medistem shall have failed to obtain the requisite affirmative vote of its shareholders;

by Intrexon, if the board of directors of Medistem shall have effected a change in recommendation, or if Medistem shall have entered into an acquisition proposal other than the merger;

by Medistem, if prior to the approval of the merger by the shareholders of Medistem, in order to accept a superior proposal, *provided that* Medistem complied with the go shop provisions of the merger agreement and shall have paid Intrexon the termination fee discussed below;

by either party if there shall have been a breach of any of the covenants or agreements or any of the representations or warranties by the other party that is not cured as set forth in the merger agreement, which breach or misrepresentation would constitute the failure of any of the conditions to closing, *provided that* neither party shall have the right to terminate pursuant to this provision if it is in breach of this agreement such that any of the conditions to closing would not be satisfied;

by Medistem, if Intrexon has not loaned the amount to Medistem payable by the promissory note set forth in the merger agreement; or

by Intrexon, if the results of its diligence investigation are unsatisfactory, as determined by Intrexon in its sole and absolute discretion; provided that this termination right was no longer applicable and/or exercisable by Intrexon on and after January 16, 2014.

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Termination fees

Medistem shall pay Intrexon a termination fee of \$1.0 million, if the merger agreement is terminated:

by Medistem, prior to the approval of the merger by the shareholders of Medistem, in order to accept a superior proposal;

by Intrexon, because the board of directors of Medistem shall have effected a change in recommendation, or because Medistem shall have entered into an acquisition proposal other than the merger;

by Medistem because the merger is not consummated on or before March 12, 2014 under the conditions described above; or

by Intrexon or Medistem because Medistem shall have failed to obtain the requisite affirmative vote of its shareholders, and (i) an acquisition proposal has been publicly announced prior to the occurrence of the events giving rise to the right to terminate and not withdrawn prior to the date of such termination and (ii) within six months of such termination Medistem enters into a definitive agreement or consummates such acquisition proposal.

Medistem shall pay Intrexon a termination fee of \$750,000, if the merger agreement is terminated by Medistem prior to the approval of the merger by the shareholders of Medistem in order to accept a superior proposal, if such termination occurs prior to (i) January 10, 2014, the start of the no-shop period as further described in this proxy statement/prospectus, during which Medistem may no longer solicit acquisition proposals (the no-shop period), or (ii) after the start of the no-shop period to enter into an alternative acquisition agreement with an excluded party, as further described in the merger agreement.

Intrexon shall pay Medistem a termination fee of \$150,000, if the merger agreement is terminated by Intrexon or Medistem (i) pursuant to any mutual termination right, any termination right exclusive to Medistem or pursuant to Intrexon's due diligence termination right and (ii) no termination fee is payable to Intrexon as a result of such termination.

In addition, if the merger agreement is terminated in certain circumstances, Medistem would be required to repay the outstanding principal balance on the loans made to Medistem by Intrexon pursuant to two promissory notes in the aggregate amount of \$700,000 in connection with the proposed merger.

Ownership of Intrexon after the merger

Based on the number of Medistem shares of common stock outstanding as of January 31, 2014, Intrexon expects to issue approximately 599,542 shares of its common stock to Medistem shareholders in the merger. The actual number of shares of Intrexon common stock to be issued in the merger will be determined at the completion of the merger based on the number of Medistem shares outstanding at the time of the consummation of the merger, subject to adjustment as described herein. Immediately after the consummation of the merger, and based on the number of shares of Intrexon common stock outstanding as of December 31, 2013, it is expected that former Medistem shareholders will own approximately 0.6% of the 97,653,254 shares of Intrexon common stock then outstanding.

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Directors and management after the merger (see page 103)

Upon completion of the merger, the board of directors and executive officers of Intrexon are expected to remain unchanged.

Material U.S. federal income tax consequences of the merger (see page 103)

It is intended, and each of Intrexon and Medistem expect, the merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended. If the merger so qualifies as a reorganization, a U.S. holder of Medistem common stock receiving Intrexon common stock and cash in exchange for Medistem common stock in the merger generally will recognize gain equal to the lesser of (i) the amount of cash received by the U.S. holder (excluding any cash received in lieu of fractional shares) and (ii) the excess of the amount realized by the U.S. holder over the U.S. holder's tax basis in the Medistem common stock. The amount realized by the U.S. holder will equal the sum of the fair market value of the Intrexon common stock and the amount of cash received by the U.S. holder. Losses will not be permitted to be recognized.

Tax matters are very complicated, and the tax consequences of the merger to a particular Medistem shareholder will depend in part on such shareholder's circumstances. Accordingly, you should consult your own tax advisor for a full understanding of the tax consequences of the merger to you, including the applicability and effect of federal, state, local and foreign income

and other tax laws.

Accounting treatment (see page 106)

In accordance with accounting principles generally accepted in the United States, Intrexon will account for the merger using the acquisition method of accounting for business combinations.

Procedure for receiving the merger consideration

Intrexon has appointed American Stock Transfer & Trust Company, LLC as its exchange agent, to coordinate the payment of the cash and stock merger consideration following the merger. If you own shares of Medistem common stock that are held in street name by your broker, bank or other nominee, you will receive instructions from your broker, bank or other nominee as to how to surrender your street name shares and receive cash and stock for those shares. If you hold certificated shares, the exchange agent will send you written instructions for surrendering your certificates and obtaining the cash and stock merger consideration at or about the date on which Medistem completes the merger. **Do not send in your share certificates now.**

Comparison of Intrexon and Medistem shareholder rights (see page 136)

The rights of Intrexon shareholders are currently governed by the Virginia Stock Corporation Act, which is referred to herein as the VSCA, and the articles of incorporation and bylaws of Intrexon. The rights of Medistem shareholders are currently governed by the Nevada Revised Statutes, which is referred to herein as the NRS, and the articles of incorporation and bylaws of Medistem. Upon completion of the merger, Medistem shareholders will become Intrexon shareholders. Accordingly, Medistem shareholders will have different rights as shareholders of Intrexon than as shareholders of Medistem, because the VSCA and the articles of incorporation and bylaws of Intrexon contain provisions that are different from the provisions contained in the NRS and the articles of incorporation and bylaws of Medistem.

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Proposal to approve the merger-related compensation for named executive officers (see page 73)

As required by Section 14A of the Exchange Act and the applicable SEC rules issued thereunder, which were enacted pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, Medistem is required to submit a proposal to Medistem shareholders for a non-binding, advisory vote to approve the payment of certain compensation to the named executive officers of Medistem that is based on or otherwise relates to the merger. This proposal, commonly known as say-on-golden parachute vote and which is referred to herein as the merger-related compensation payments proposal, gives Medistem shareholders the opportunity to express their views on the compensation that Medistem's named executive officers may be entitled to receive that is based on or otherwise relates to the merger.

Risk factors (see page 27)

The merger (including the possibility that the merger may not be consummated) poses a number of risks to Medistem shareholders. In addition, Medistem shareholders will be receiving shares of Intrexon common stock in the merger. Intrexon is subject to various risks associated with its business and a number of risks exist with respect to an investment in Intrexon common stock.

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Intrexon selected historical financial and other data

The following table sets forth Intrexon's selected consolidated financial data for the periods and as of the dates indicated. You should read the following selected consolidated financial data in conjunction with its audited and unaudited consolidated financial statements and the related notes thereto included elsewhere in this prospectus and the Intrexon Management's Discussion and Analysis of Financial Condition and Results of Operations section of this prospectus.

The consolidated statement of operations data for the years ended December 31, 2012 and 2011, and the consolidated balance sheet data as of December 31, 2012 and 2011, are derived from its audited consolidated financial statements included elsewhere in this prospectus. The consolidated statement of operations data for the nine months ended September 30, 2013 and 2012, and the consolidated balance sheet data as of September 30, 2013 are derived from its unaudited consolidated financial statements and the related notes thereto included elsewhere in this prospectus and have been prepared on the same basis as the audited consolidated financial statements. In the opinion of management, the unaudited financial information includes all adjustments, consisting of normal recurring adjustments, necessary for the fair statement of its financial position and results of operations for these periods. All previously reported share and per share amounts of its common stock, including shares of common stock underlying stock options and warrants, throughout this prospectus have been retroactively adjusted to reflect its 1-for-1.75 reverse stock split of its shares of common stock effective on July 26, 2013. Intrexon's audited and unaudited consolidated financial statements have been prepared in U.S. dollars in accordance with U.S. GAAP.

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Intrexon's historical results for any prior period are not necessarily indicative of results to be expected in any future period, and its results for any interim period are not necessarily indicative of results to be expected for a full fiscal year.

	Nine months ended September 30,		Years ended December 31,	
	2013	2012	2012	2011
(in thousands, except share and per share amounts)				
Statement of Operations Data:				
Revenues:				
Collaboration revenues	\$ 16,566	\$ 7,163	\$ 13,706	\$ 5,118
Other revenues	324	106	219	3,053
Total revenues	16,890	7,269	13,925	8,171
Operating expenses:				
Research and development	35,867	50,984	64,185	70,386
General and administrative	21,320	19,139	24,897	18,300
Other operating expenses				1,912
Total operating expenses	57,187	70,123	89,082	90,598
Loss from operations	(40,297)	(62,854)	(75,157)	(82,427)
Total other income (expense), net	12,797	11,917	(6,443)	(2,853)
Equity in net loss of affiliate	(390)		(274)	
Net loss	\$ (27,890)	\$ (50,937)	\$ (81,874)	\$ (85,280)
Net loss attributable to noncontrolling interest	1,114			
Net loss attributable to Intrexon	\$ (26,776)	\$ (50,937)	\$ (81,874)	\$ (85,280)
Accretion of dividends on redeemable convertible preferred stock, not declared	(18,391)	(16,291)	(21,994)	(13,868)
Net loss attributable to Intrexon common shareholders	\$ (45,167)	\$ (67,228)	\$ (103,868)	\$ (99,148)
Net loss attributable to Intrexon common shareholders per share, basic and diluted	\$ (2.05)	\$ (12.21)	\$ (18.77)	\$ (18.92)
Weighted average shares outstanding, basic and diluted	22,056,396	5,506,043	5,533,690	5,240,647
Unaudited Pro forma information(1)(2)				
Pro forma net loss attributable to common shareholders	\$ (26,776)		\$ (81,874)	
Pro forma net loss per share, basic and diluted	\$ (0.32)		\$ (1.17)	
Pro forma shares used in computation of pro forma net loss per share, basic and diluted	83,738,320		70,055,471	

- (1) Pro forma net loss attributable to common shareholders and pro forma net loss per share, basic and diluted have been calculated as of December 31, 2012 after giving effect to (i) the conversion of 112,906,464 shares of its preferred stock outstanding as of December 31, 2012 into 64,517,977 shares of common stock upon completion of its initial public offering on August 13, 2013; and (ii) upon the completion of its initial public offering the conversion of aggregate cumulative dividends on its preferred stock of \$50.5 million into 3,153,723 shares of its common stock, assuming for this purpose that the closing of its initial public offering occurred on December 31, 2012 at the initial public offering price of \$16.00 per share.

- (2) Pro forma net loss attributable to common shareholders and pro forma net loss per share, basic and diluted have been calculated as of September 30, 2013 after giving effect to (i) the conversion of 112,906,464 shares of its preferred stock outstanding on January 1, 2013 into 64,517,977 shares of common stock upon the completion of its initial public offering; (ii) the issuance of 19,047,619 shares of Series F preferred stock issued between January 1, 2013 and April 30, 2013 and the conversion of those shares into 10,884,353 shares of its common stock upon the completion of its initial public offering; and (iii) the conversion upon the completion of its initial public offering of aggregate cumulative dividends on its preferred stock of \$68.8 million into 4,302,800 shares of its common stock at the initial public offering price of \$16.00 per share.

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	September 30,		December 31,
	2013(3)	2012(2)	2011
	(In thousands, except share and per share amounts)		
Balance Sheet Data:			
Cash and cash equivalents	\$ 61,222	\$ 10,403	\$ 19,628
Other current assets	145,013	3,130	3,350
Equity securities	107,567	83,116	39,097
Other long-term assets	160,396	54,997	52,753
Total assets	474,198	151,646	114,828
Accounts payable, accrued expenses and other current liabilities, excluding current portion of deferred revenue	12,319	6,754	16,197
Deferred revenue, current and non-current	67,392	58,636	16,921
Other long-term liabilities(1)	3,279	1,150	1,288
Redeemable convertible preferred stock		406,659	301,681
Total Intrexon shareholders' equity (deficit)	377,133	(321,553)	(221,259)
Noncontrolling interest	14,075		
Total equity (deficit)	391,208	(321,553)	(221,259)

(1) Other long-term liabilities includes \$16, \$42 and \$97 related to capital leases as of September 30, 2013 and December 31, 2012 and 2011, respectively, and \$2,305 of long term debt as of September 30, 2013.

(2) We acquired four businesses in 2011: Agarigen, Inc. on January 26, 2011; Neugenesis Corporation on April 18, 2011; GT Life Sciences, Inc. on October 5, 2011; and Immunologix, Inc. on October 21, 2011.

(3) On March 15, 2013, we acquired 18,714,814 additional shares of AquaBounty Technologies, Inc. common stock increasing our ownership in AquaBounty Technologies, Inc. to 53.82 percent, resulting in us gaining control over AquaBounty. As such AquaBounty Technologies, Inc. was consolidated in our results of operations and financial position on March 15, 2013.

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Certain historical and per share information

The following table sets forth certain Intrexon common stock and Medistem common stock historical, pro forma combined and pro forma combined equivalent per share financial information. The pro forma combined and pro forma combined equivalent income per share data reflect the merger as if it had been effective on January 1, 2012. The pro forma combined and pro forma combined equivalent book value per share reflect the merger as if it had been effective as of September 30, 2013.

The pro forma data in the table assume that the merger is accounted for using the acquisition method of accounting and represents a current estimate based on available information of the combined company's results of operations for the periods presented. As of the date of this document, Intrexon has not completed the detailed valuation studies necessary to arrive at the required estimates of the fair value of the Medistem assets to be acquired and liabilities to be assumed and the related allocations of purchase price, nor has it identified all the adjustments necessary to conform Medistem's data to Intrexon's accounting policies. However, Intrexon has made certain adjustments to the historical book values of the assets and liabilities of Medistem as of September 30, 2013 to reflect certain preliminary estimates of the fair values necessary to prepare the unaudited pro forma combined and pro forma combined equivalent data. The fair value adjustments included in the unaudited pro forma combined and pro forma combined equivalent data represent management's estimate of these adjustments based upon currently available information. The preliminary purchase price allocation assigned value to certain identifiable intangible assets, including Medistem's developed technology and know-how. Actual results may differ from this pro forma combined data once Intrexon has determined the final purchase price for Medistem and has completed the detailed valuation studies necessary to finalize the pro forma combined amounts included in this section, although these amounts represent management's best estimates as of the date of this proxy statement/prospectus.

The pro forma combined and pro forma combined equivalent data is provided for illustrative purposes only and does not purport to represent what the actual consolidated results of operations or the consolidated financial position of Intrexon would have been had the merger occurred on the dates assumed, nor are they necessarily indicative of future consolidated results of operations or consolidated financial position.

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