INTREXON CORP
Form S-4/A
May 11, 2017
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As filed with the U.S. Securities and Exchange Commission on May 11, 2017

Registration No. 333-216808

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Amendment No. 2

to

FORM S-4

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

Intrexon Corporation

(Exact name of registrant as specified in its charter)

Virginia	8731	26-0084895
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

20374 Seneca Meadows Parkway

Germantown, Maryland 20876

Telephone: (301) 556-9900

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

Randal J. Kirk

Chairman of the Board, President and Chief Executive Officer

Intrexon Corporation

20374 Seneca Meadows Parkway

Germantown, Maryland 20876

Telephone: (301) 556-9900

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

Copies to:

Peter W. Smith	Donald P. Lehr	Asher Rubin
Corby J. Baumann	Chief Legal Officer	William I. Intner
Thompson Hine LLP	Intrexon Corporation	Hogan Lovells US LLP
335 Madison Avenue	20374 Seneca Meadows Parkway	100 International Drive
12th Floor	Germantown, Maryland 20876	Suite 2000
New York, New York 10017	Telephone: (301) 556-9900	Baltimore, Maryland 21202

Telephone: (212) 344-5680 **Telephone: (410) 659-2777**

Approximate date of commencement of the proposed sale of the securities to the public: As soon as practicable after this registration statement becomes effective and all other conditions to the proposed merger described herein have been satisfied or waived.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, 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 of 1933, as amended, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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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, a smaller reporting company, or an emerging growth company. See the definitions of large accelerated filer, accelerated filer, smaller reporting company, and emerging growth 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
		Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer)

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered[(1)]	Proposed maximum offering price per share	Proposed maximum aggregate offering price[(2)]	Amount of registration fee
Common Stock, no par value	1,787,769 shares	N/A	$19,788,847	$2,294(3)

(1) Represents the estimated maximum number of shares of common stock, no par value, of the registrant, referred to herein as Intrexon common stock, to be issued upon completion of the merger described in the proxy statement/prospectus contained herein, referred to herein as the merger, based upon the sum of (a) the product of (i) 3,009,710.50 shares of common stock, par value $.001 per share, of GenVec, Inc., referred to herein as

GenVec common stock, outstanding as of March 14, 2017 (including 287,378 shares of GenVec common stock potentially issuable upon the exercise of stock options and 448,700.50 shares of GenVec common stock potentially issuable upon the exercise of warrants), multiplied by (ii) the exchange ratio of 0.297 shares of Intrexon common stock for each share of GenVec common stock, plus (b) an additional 893,884 shares of Intrexon common stock representing the estimated maximum number of shares of Intrexon common stock potentially issuable as contingent consideration for the merger, as described in the proxy statement/prospectus contained herein, referred to herein as the contingent payment shares. In addition, this registration statement relates to an indeterminate amount of shares of Intrexon common stock that may be issued as a result of stock splits, stock dividends or similar transactions in accordance with Rule 416 under the Securities Act of 1933, as amended, which we refer to as the Securities Act.

(2) Estimated solely for the purpose of calculating the registration fee required by the Securities Act, and calculated in accordance with Rules 457(c) and 457(f)(1) of the Securities Act as follows: the product of (a) $6.575, the average of the high and low sales prices per share of GenVec common stock, as reported on The NASDAQ Capital Market on March 14, 2017, and (b) 3,009,710.50, which represents the estimated maximum number of shares of GenVec common stock that may be cancelled and exchanged for Intrexon common stock to be issued upon completion of the merger and the contingent payment shares, as described in (1) above. The product of (a) and (b) above is not being reduced by any value attributable to the contingent payment rights.

(3) Previously paid.

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 that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until this Registration Statement shall become effective on such date as the U.S. Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this proxy statement/prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the U.S. Securities and Exchange Commission is effective. This proxy statement/prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Preliminary Proxy Statement/Prospectus Subject To Completion, Dated May 11, 2017.

910 Clopper Road, Suite 220N

Gaithersburg, MD 20878

ph: 240-632-0740

fx: 240-632-0735

www.genvec.com

MERGER PROPOSED YOUR VOTE IS VERY IMPORTANT

May , 2017

Dear GenVec, Inc. Shareholders:

On behalf of the board of directors of GenVec, Inc. (GenVec), I am pleased to invite you to cast your vote at a special meeting of GenVec s shareholders called to consider adoption of an agreement and plan of merger under which GenVec will become a wholly owned subsidiary of Intrexon Corporation (Intrexon), as a result of the merger of Intrexon GV Holding, Inc., a wholly owned subsidiary of Intrexon, with and into GenVec. The accompanying proxy statement/prospectus provides notice of the special meeting of GenVec shareholders.

If the merger is completed, each share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger (other than shares owned by GenVec shareholders who have properly exercised their appraisal rights under Delaware law) will be converted into the right to receive (i) 0.297 shares of Intrexon common stock, *plus* (ii) one non-transferable contingent payment right, or CPR. Intrexon common stock is traded on the New York Stock Exchange under the symbol XON. On May 8, 2017, the last reported sale price of Intrexon common stock on the New York Stock Exchange was $19.36. However, the value of the shares of Intrexon common stock to be received by each GenVec shareholder at the effective time of the merger will fluctuate as the market price of Intrexon common stock fluctuates. Intrexon expects that it may issue up to 696,281 shares of Intrexon common stock in the merger (excluding any shares of Intrexon common stock that may be issued as payment under the CPRs if such CPRs are settled in shares of Intrexon common stock rather than cash and any shares of Intrexon common stock issuable upon exercise of warrants or stock options that are not in-the-money).

Each CPR will entitle its holder to receive from Intrexon an amount in cash (or, in certain circumstances, shares of Intrexon common stock) equal to (i) 50% of (a) all milestone payments, if any, made by Novartis Institutes for BioMedical Research, Inc. (Novartis) for milestones that are achieved or occur under the Research Collaboration and License Agreement between GenVec and Novartis, dated January 13, 2010 (the NVS License Agreement), during the 36-month period following the effective time of the merger, and (b) all royalty payments, if any, made by Novartis under the NVS License Agreement during such 36-month period, *divided by* (ii) all then-outstanding CPRs. The CPRs are to be paid in cash unless any such payment would prevent the transactions contemplated by the merger agreement from being treated as a tax free reorganization, in which case Intrexon would issue shares of its common stock in lieu of payment in cash of such amounts determined to be payable under the contingent payment rights agreement.

We cannot complete the merger unless the merger agreement is adopted by the affirmative vote of the holders of a majority of the outstanding shares of GenVec common stock. A failure to vote on the proposal to adopt the merger agreement has the same effect as a vote AGAINST the adoption of the merger agreement. Therefore, your vote is very important, regardless of the number of shares of common stock you own. Whether or not you expect to attend the special meeting in person, we urge you promptly to submit your vote by telephone or by mail according to the instructions on the enclosed proxy card.

The GenVec board of directors has determined that the merger agreement, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interests of, GenVec and its shareholders. The GenVec board of directors unanimously recommends that you vote FOR the proposal to adopt the merger agreement and FOR the other proposals to be voted upon at the special meeting (as more fully described in the accompanying proxy statement/prospectus).

More information about Intrexon, GenVec and the merger is contained in the proxy statement/prospectus. **We encourage you to read the enclosed proxy statement/prospectus carefully, including the section entitled Risk Factors beginning on page 27.**

If you have any questions regarding this proxy statement/prospectus, you may contact Saratoga Proxy Consulting, LLC, GenVec s proxy solicitor, by calling toll-free at (888) 368-0379.

The special meeting will be held at 8:30 a.m. Eastern Daylight Time, on June 15, 2017 at GenVec s office located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878.

We look forward to the successful completion of the acquisition of GenVec by Intrexon.

Thank you for your support,

Douglas J. Swirsky

President and Chief Executive Officer

Neither the U.S. 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.

The proxy statement/prospectus is dated May , 2017, and is first being mailed to GenVec shareholders on or about May , 2017.

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910 Clopper Road, Suite 220N

Gaithersburg, MD 20878

ph: 240-632-0740

fx: 240-632-0735

www.genvec.com

NOTICE OF SPECIAL MEETING OF SHAREHOLDERS

TO BE HELD ON JUNE 15, 2017

TO THE SHAREHOLDERS OF GENVEC, INC.:

Notice is hereby given that a special meeting of the shareholders of GenVec, Inc., a Delaware corporation, referred to herein as GenVec, will be held at 8:30 a.m. Eastern Daylight Time, on June 15, 2017 at GenVec s offices located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878.

The purposes of the meeting are to:

1. consider and vote on a proposal to adopt the Agreement and Plan of Merger, dated as of January 24, 2017, among GenVec, Intrexon Corporation, referred to herein as Intrexon, and Intrexon GV Holding, Inc., a wholly owned subsidiary of Intrexon, as it may be amended from time to time, a copy of which is included as Annex A to the proxy statement/prospectus of which this notice forms a part;

2. consider and vote on a proposal to approve, on a non-binding, advisory basis, compensation that will or may become payable to GenVec s named executive officers in connection with the merger;

3. consider and vote on a proposal to adjourn the special meeting, if necessary or appropriate, to solicit additional proxies in favor of the proposal to adopt of the merger agreement; and

4. transact such other business as may properly come before the special meeting or any adjournment or postponement of the special meeting.

The proxy statement/prospectus accompanying this notice, including the annexes thereto, contains further information with respect to the business to be transacted at the special meeting. We encourage you to read the accompanying proxy statement/prospectus, including any documents incorporated by reference, and the annexes carefully. The accompanying proxy statement/prospectus is a part of this notice.

GenVec s board of directors has fixed the close of business on April 28, 2017 as the record date for the determination of shareholders entitled to notice of, and to vote at, the special meeting and at any adjournment of the special meeting. A complete list of shareholders of record of GenVec entitled to vote at the special meeting will be available for ten days prior to the special meeting at GenVec s executive offices and principal place of business at 910 Clopper Road,

Suite 220N, Gaithersburg, Maryland 20878, for inspection by shareholders of GenVec during ordinary business hours for any purpose germane to the special meeting. The list will also be available at the special meeting for examination by any shareholder of record of GenVec present at the special meeting.

You are cordially invited to attend the special meeting. Your proxy is being solicited by GenVec s board of directors. Adoption of the merger agreement requires the affirmative vote of the holders of a majority of the outstanding shares of GenVec common stock. **Your vote is very important. We cannot complete the merger unless the merger agreement is adopted by the affirmative vote of the holders of a majority of the outstanding shares of GenVec common stock. A failure to vote on the proposal to adopt the merger agreement has the same effect as a vote by you AGAINST the adoption of the merger agreement. Whether or not you expect to attend the special meeting in person, we urge you to review the enclosed materials and request that you submit your proxy as promptly as possible (i) by telephone according to the instructions on the enclosed proxy card or (ii) by completing, signing, dating and returning the enclosed proxy card. Your proxy may be revoked by you at any time before the vote at the special meeting by following the procedures outlined in the accompanying proxy statement/prospectus. If your shares are held in street name, meaning that your shares are held by a broker, bank, or other nominee, you should follow the instructions provided by such nominee.**

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THE BOARD OF DIRECTORS OF GENVEC UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR THE MERGER PROPOSAL, FOR THE COMPENSATION PROPOSAL, AND FOR THE ADJOURNMENT PROPOSAL.

By Order of the Board of Directors,

/s/ Douglas J. Swirsky
Douglas J. Swirsky
President, Chief Executive Officer and Director

Gaithersburg, Maryland
May , 2017

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Additional information

This proxy statement/prospectus incorporates important business and financial information about Intrexon from other documents filed with the U.S. Securities and Exchange Commission, referred to herein 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, 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 Intrexon at the following address and telephone number:

Intrexon Corporation

20374 Seneca Meadows Parkway

Germantown, MD 20876

(301) 556-9900

Attn: Investor Relations

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

To receive timely delivery of requested documents in advance of the special meeting of GenVec shareholders, please make your request no later than June 8, 2017 (five business days before the date of the special meeting).

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 we refer to as the Securities Act, with respect to the shares of Intrexon common stock to be issued to GenVec shareholders pursuant to the merger agreement. This document also constitutes a proxy statement of GenVec under Section 14(a) of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act, with respect to the special meeting of GenVec shareholders at which such shareholders will be asked to vote upon the proposal to adopt the merger agreement, among other proposals.

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 and neither Intrexon nor GenVec takes any responsibility for any information that others may give you. 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 GenVec 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 GenVec has been provided by GenVec.

All references in this proxy statement/prospectus to: GenVec refer to GenVec, Inc., a Delaware corporation; Intrexon refer to Intrexon Corporation, a Virginia corporation, and its subsidiaries; Merger Sub refer to Intrexon GV Holding, Inc., a Delaware corporation and a wholly owned subsidiary of Intrexon formed solely for

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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 GenVec, 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 January 24, 2017, by and among Intrexon, Merger Sub and GenVec, 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 GenVec, with GenVec continuing as the surviving corporation.

Although Delaware 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.

As described in further detail below in the section entitled GenVec management s discussion and analysis of financial condition and results of operations Liquidity and Capital Resources NASDAQ Notifications and Reverse Stock Split, on December 1, 2016, GenVec effected a reverse stock split, which we refer to as the reverse stock split, of its outstanding common stock at a ratio of one-for-ten, whereby each ten shares of common stock were combined into one share of common stock. Unless otherwise noted, all share and per share amounts relating to GenVec common stock, GenVec stock options or warrants to purchase GenVec common stock, and the respective exercise prices of each such option or warrant, included within this proxy statement/prospectus have been retroactively adjusted to reflect the reduced number of shares resulting from the reverse stock split.

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Questions and answers about the special meeting

The following are some questions that you, as a shareholder of GenVec, may have regarding the special meeting of GenVec shareholders, which we refer to as the special meeting, the merger and the other matters being considered at the special meeting, as well as brief answers to those questions. GenVec urges you to read carefully the remainder of this proxy statement/prospectus because the information in this section does not provide all the information that might be important to you with respect to the special meeting, the merger and the other matters being considered at the special meeting. Additional important information is also contained in the annexes to and the documents incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information.

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

A: Intrexon and GenVec have agreed to the acquisition of GenVec 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. As a result of the merger described in this proxy statement/prospectus, GenVec will no longer be a publicly held company. Following the merger, GenVec common stock will be delisted from the NASDAQ Stock Market, referred to herein as NASDAQ, and deregistered under the Exchange Act. GenVec will no longer be required to file periodic reports with the SEC in respect of GenVec common stock.

You are receiving this proxy statement/prospectus because you have been identified as a shareholder of GenVec as of the close of business on the record date for the special meeting, which is April 28, 2017. This document serves as both a proxy statement of GenVec, used to solicit proxies for the special meeting of GenVec shareholders, and as a prospectus of Intrexon, used to offer shares of Intrexon common stock to GenVec shareholders in exchange for shares of GenVec 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 and contingent payment rights, which we refer to as CPRs, to be received pursuant to the merger and the special meeting of GenVec shareholders, and you should read it carefully. The enclosed proxy materials allow GenVec shareholders to submit their proxy without attending the special meeting in person.

Q: What am I being asked to vote on?

A: In order to complete the merger, GenVec shareholders must vote in favor of a proposal to adopt the merger agreement, which we refer to as the merger proposal, and all other conditions to the merger must be satisfied or waived. GenVec is holding the special meeting to obtain this approval. 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, compensation that will or may become payable to GenVec s named executive officers in connection with the merger, which we refer to as the merger-related compensation proposal.

You are also being asked to vote on a proposal to adjourn the special meeting, if necessary or appropriate, to solicit additional proxies in favor of the merger proposal, which we refer to as the adjournment 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 GenVec common stock issued and outstanding immediately prior to the effective time of the merger (other than shares with respect to which appraisal rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or GenVec) will be converted into the right to receive 0.297 of a share of Intrexon common stock, referred to herein as the stock consideration, and one CPR. We refer to the stock consideration plus a CPR, collectively, as the merger consideration.

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GenVec 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, without interest, equal to the product of such fraction multiplied by the last reported sale price of Intrexon common stock on the New York Stock Exchange, referred to herein as NYSE, on the last complete trading day prior to the effective time of the merger.

Q: What are the contingent payment rights?

A: As part of the merger consideration, Intrexon will issue the CPRs. A holder of a CPR will be entitled to receive payments from Intrexon, if (i) Intrexon or the surviving corporation receives milestone payments for milestones that are achieved or occur and/or (ii) Intrexon or the surviving corporation receives royalty payments, in each case, during the 36-month period following the effective time of the merger from Novartis Institutes for BioMedical Research, Inc., referred to herein, together with Novartis AG and its subsidiary corporations, including Novartis Pharma AG, as Novartis, pursuant to the Research Collaboration and License Agreement between GenVec and Novartis, dated January 13, 2010, as amended, referred to herein as the NVS License Agreement.

In particular, each CPR represents the right to receive an amount in cash (or, as described below, in certain circumstances, shares of Intrexon common stock) equal to (i) 50% of (a) all milestone payments, if any, received by Intrexon or the surviving corporation for milestones that are achieved or occur under the NVS License Agreement during such 36-month contingent payment period, and (b) all royalty payments, if any, received by Intrexon or the surviving corporation under the NVS License Agreement during such 36-month contingent payment period, *divided by* (ii) all then-outstanding CPRs.

See the section entitled Contingent payment rights agreement. You should also read the form of the contingent payment rights agreement included as Annex B to this proxy statement/prospectus for more information on the terms of the CPRs.

Q: How do I determine the value of the merger consideration?

A: The stock consideration payable for each share of GenVec common stock at closing is fixed at the right to receive 0.297 of a share of Intrexon common stock. The merger agreement does not contain any provision that would adjust the exchange ratio based on fluctuations in the market value of Intrexon common stock. Because of this, the implied value of the stock consideration payable for each share of GenVec common stock may fluctuate between now and the completion of the merger. The value of the consideration to GenVec shareholders will depend on the market value of Intrexon common stock at the time the merger is completed.

On January 23, 2017, the last trading day prior to the public announcement of the proposed merger, the closing price of Intrexon common stock on the NYSE was $22.09 per share. On May 8, 2017, the latest practicable date before the date of this proxy statement/prospectus, the closing price of Intrexon common stock on the NYSE was $19.36 per share. We encourage you to obtain a current market quotation before voting your shares.

The amount of consideration payable to GenVec shareholders in connection with the CPRs will ultimately depend on (i) whether any milestones are achieved or occur under the NVS License Agreement within 36 months after the

effective time of the merger, and, if so, whether any milestone payments are made under the NVS License Agreement with respect to such milestones, and (ii) whether any royalty payments are made under the NVS License Agreement within 36 months after the effective time of the merger. If such milestone or royalty payments are made, then the amount of consideration so payable will depend on the aggregate amount of (a) milestone payments received by Intrexon or the surviving corporation for milestones that are achieved or occur, and (b) royalty payments received by Intrexon or the surviving corporation, in each case, under the NVS License Agreement within 36 months after the effective time of the merger. See the section entitled Contingent payment rights agreement.

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A holder of a CPR will be entitled to receive payments from Intrexon, if (i) Intrexon or the surviving corporation receives milestone payments for milestones that are achieved or occur and/or (ii) Intrexon or the surviving corporation receives royalty payments, in each case, during the 36-month period following the effective time of the merger.

Q: How will the merger affect options and warrants to purchase GenVec common stock?

A: Each outstanding, unvested GenVec stock option will fully vest upon the approval of the merger proposal by the GenVec shareholders. In connection with the merger, each outstanding GenVec stock option may be exercised (including net exercise) for a period of 15 days prior to the effective time of the merger. Each share of GenVec common stock resulting from the exercise of an option during this exercise window will be treated as a share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger and will be eligible to receive the merger consideration. Any GenVec stock option that is not exercised and remains outstanding at the effective time of the merger will be automatically cancelled for no consideration.

At the effective time of the merger, each outstanding, unexpired and unexercised warrant to purchase shares of GenVec common stock will be assumed by Intrexon and converted into a warrant to purchase, at an aggregate exercise price equal to the aggregate exercise price of the warrant as of immediately prior to the effective time of the merger, and in lieu of the shares of GenVec common stock otherwise issuable upon exercise of such warrant, the applicable merger consideration (including shares of Intrexon common stock and CPRs) that would have been receivable upon consummation of the merger by the holder of such warrant if such warrant had been exercised immediately prior to the effective time of the merger. The other pre-existing terms of the warrants will continue to apply in accordance with their terms following the merger. See the section entitled The merger agreement Treatment of GenVec stock options and warrants.

Q: How will the merger impact GenVec s equity plans?

A: As of the effective time of the merger, the GenVec, Inc. 2002 Stock Incentive Plan (as amended) and the GenVec, Inc. 2015 Omnibus Incentive Plan (as amended), which amended and restated the GenVec, Inc. 2011 Omnibus Incentive Plan, will be terminated, and no further awards will be granted under the plans.

Q: What happens if the merger is not completed?

A: If the merger proposal is not approved by GenVec s shareholders or if the merger is not completed for any other reason, you will not receive any payment for your shares of GenVec common stock in connection with the merger. Instead, GenVec will remain an independent public company and its common stock will continue to be listed and traded on NASDAQ as long as it continues to meet the requirements for such listing and trading.

If the merger agreement is terminated under specified circumstances, GenVec would be required to pay Intrexon a termination fee of $550,000 or reimburse Intrexon for its reasonable out-of-pocket expenses (not to exceed $400,000). In addition, if (i) GenVec willfully breaches certain pre-closing covenants in the merger agreement and (ii) GenVec is otherwise required to reimburse Intrexon s out-of-pocket expenses as described in the foregoing sentence, then GenVec would also be obligated to pay Intrexon an additional $200,000. See the section entitled The merger

agreement Termination fee and the section entitled The merger agreement Costs and expenses.

Q: When and where will the meeting be held?

A: The special meeting will be held at 8:30 a.m., Eastern Daylight Time, on June 15, 2017, at GenVec s office located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878.

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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 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 designated by GenVec s board of directors. The procedures for voting are as follows:

Voting by Proxy

Registered shareholders may vote by mail or by telephone:

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 at (800) 776-9437 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 Daylight Time, on June 14, 2017.

If your shares are held of record in street name, meaning that your shares are held by a broker, bank or other nominee, you should follow the separate instructions that such 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 in street name by a broker, bank or other nominee, and you would like to vote in person at the special meeting, you must bring to the special meeting (i) a letter, account statement or other evidence from such broker, bank or other nominee indicating that you were the beneficial owner of the shares on the record date for the special meeting and (ii) a legal proxy from the record holder of the shares of GenVec common stock (i.e., your broker, bank or nominee) authorizing you to vote at the special meeting.

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

A: The GenVec 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, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interests of, GenVec and its shareholders;

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approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement; and

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

The GenVec board of directors unanimously recommends that GenVec s shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment proposal.

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 holders of a majority of the outstanding shares of GenVec common stock.

The approval of the merger-related compensation proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.

The approval of the adjournment proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.

Q: What constitutes a quorum?

A: Shareholders who hold at least a majority of the issued and outstanding GenVec 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 are a registered holder of record and you sign and return your proxy card without indicating how to vote on any particular proposal, the GenVec common stock represented by your proxy will be voted as recommended by the GenVec board of directors. The GenVec board of directors has unanimously recommended that GenVec s shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment 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 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 it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal. If your shares are held in street name, meaning that your shares are held by a broker, bank or other nominee, and you do not provide your broker, bank 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 it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal.

If you are a shareholder of record and vote Abstain on the merger proposal, the merger-related compensation proposal or the adjournment proposal, it will have the same effect as voting against such proposal. Likewise, if your shares are held in street name and you instruct your broker, bank or other nominee to vote Abstain on the merger proposal, the merger-related compensation proposal or the adjournment proposal, it will have the same effect as voting against such proposal.

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Q: How many votes do I and others have?

A: Each GenVec shareholder is entitled to one vote on each matter to be acted upon at the special meeting for each share of GenVec common stock owned by such shareholder as of the record date. As of the close of business on the record date, there were 2,273,632 issued and outstanding shares of GenVec common stock. As of the record date, the directors and executive officers of GenVec and their affiliates as a group owned and were entitled to vote 72,437 shares of GenVec common stock, or approximately 3.2% of the outstanding shares of GenVec common stock on that date.

Q: If my shares are held in street name, meaning that my shares are held by a broker, bank, or other nominee, will my broker, bank or other 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 other nominee with instructions on how to vote your shares. Please follow the voting instructions provided by your broker, bank or other nominee. Please note that you may not vote shares held in street name by returning a proxy card directly to GenVec 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. See How do I vote? above. Brokers, banks and other nominees who hold shares of GenVec common stock on behalf of their customers may not vote such shares or give a proxy to GenVec to vote those shares without specific instructions from their customers.

Q: Am I entitled to appraisal rights?

A: Yes. Under Delaware law, record holders of GenVec common stock who do not vote in favor of the adoption of the merger agreement, who continuously hold shares of GenVec common stock through the effective time of the merger and who otherwise comply precisely with the applicable requirements of Section 262 of the Delaware General Corporation Law, which we refer to as the DGCL, will be entitled to seek appraisal rights in connection with the merger, and if the merger is completed, obtain payment in cash of the fair value of their shares of GenVec common stock as determined by the Delaware Court of Chancery, instead of the merger consideration. These procedures are summarized in the section entitled Appraisal rights. In addition, the text of the applicable provisions of Delaware law is included as Annex D to this proxy statement/prospectus. Failure to strictly comply with these provisions will result in a loss of the right of appraisal.

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 GenVec or vote by telephone, 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 any time prior to 11:59 p.m., Eastern Daylight Time, on June 14, 2017;

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

delivering to the Corporate Secretary of GenVec 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, meaning that your shares are held by a broker, bank or other nominee, you should contact such broker, bank or other nominee to change your vote.

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

A: Intrexon and GenVec expect to complete the merger during the second quarter of 2017 if the approval of the merger proposal is obtained, assuming the other conditions to the consummation of the merger that are set forth in the merger agreement are satisfied or waived. However, it is possible that the merger will not be consummated within that timeframe (or at all).

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

A: No. After the merger is completed, if you held certificates representing shares of GenVec common stock prior to the merger, Intrexon s exchange agent will send you a letter of transmittal and instructions for exchanging your shares of GenVec common stock for the merger consideration. Upon surrender of the certificates for cancellation and delivery of 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, unless you request a physical certificate or a physical certificate is otherwise required under applicable law. **DO NOT SEND ANY STOCK CERTIFICATES WITH YOUR PROXY.**

Q: What happens if I sell my shares of GenVec common stock before the special meeting?

A: The record date for the special meeting is earlier than the date of the special meeting and the date that the merger is expected to be completed. If you transfer your shares of GenVec common stock after the record date but before the special meeting, you will retain your right to vote at the special meeting. However, you will have transferred your right to receive the merger consideration in the merger. In order to receive the merger consideration, holders of GenVec common stock must hold their shares through the completion of the merger.

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

A: Yes. Please bring proper identification, together with proof that you are a record owner of GenVec common stock. If your shares are held of record in street name, meaning that your shares are held by a broker, bank or other nominee, and you would like to vote in person at the special meeting, you must bring to the special meeting (i) a letter, account statement or other evidence from such broker, bank or other nominee indicating that you were the beneficial owner of the shares on the record date for the special meeting and (ii) a legal proxy from the record holder of the shares of GenVec common stock (i.e., your broker, bank or nominee) authorizing you to vote at 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, please contact Saratoga Proxy Consulting, LLC, which we refer to as Saratoga, GenVec s proxy solicitor, by calling toll-free at (888) 368-0379. Banks, brokerage firms, and other nominees may call collect at (212) 257-1311.

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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 should read carefully the entire proxy statement/prospectus and the additional documents referenced in it to understand fully the merger agreement and the merger. 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 62)

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 to enable rational, design-based control of cellular function for a specific purpose. Using its suite of proprietary and complementary technologies, Intrexon designs, builds and regulates gene programs, which are DNA sequences that consist of key genetic components. A single gene program or a complex, multi-genic program is fabricated and stored within a DNA vector. Vectors are segments of DNA used as a vehicle to transmit genetic information. DNA vectors can, in turn, be introduced into cells in order to generate a simple or complex cellular system, which are the basic and complex cellular activities that take place within a cell and the interaction of those systems in the greater cellular environment. It is these genetically modified cell systems that can be used to produce biological effector molecules, or be employed directly to enable the development of new and improved products and manufacturing processes across a variety of end markets, including health, food, energy, environment and consumer. 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 utilize biologically-based applications for the delivery of innovative consumer products and provide for a diverse set of environmental solutions. Intrexon s business model is to commercialize its technologies through exclusive channel collaborations, referred to herein as 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 is incorporated in Virginia. Intrexon s common stock is traded on the NYSE under the symbol XON. The principal executive offices of Intrexon are located at 20374 Seneca Meadows Parkway, Germantown, Maryland 20876, and its telephone number is (301) 556-9900.

For more information regarding Intrexon s business, see the section entitled Description of Intrexon s business in this proxy statement/prospectus, Item 1 of Intrexon s Annual Report on Form 10-K for its 2016 fiscal year and the other documents incorporated by reference into this proxy statement/prospectus.

GenVec, Inc.

GenVec is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. GenVec is a pioneer in the design, testing and manufacture of adenoviral-based product candidates that

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can deliver on the promise of gene-based medicine. GenVec s lead product candidate, CGF166, is licensed to Novartis and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to its internal and partnered pipeline, GenVec also focuses on opportunities to license its proprietary technology platform, including vectors and production cell lines, to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

GenVec is incorporated in Delaware. GenVec s common stock is traded on NASDAQ under the symbol GNVC. The principal executive offices of GenVec are located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878, and its telephone number is (240) 632-0740.

For more information regarding GenVec s business, see the section entitled Description of GenVec s business.

Intrexon GV Holding, Inc.

Merger Sub is a wholly owned subsidiary of Intrexon formed solely for the purpose of effecting the merger. Merger Sub is incorporated in Delaware.

Merger Sub has not conducted any activities other than those incidental to its formation and the matters contemplated by the merger agreement. 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 64)

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 GenVec. GenVec will continue as the surviving corporation of the merger, but it will become a wholly owned subsidiary of Intrexon.

Merger consideration (see page 101)

At the effective time of the merger, each share of GenVec common stock (other than shares with respect to which appraisal rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or GenVec) will be converted into the right to receive 0.297 of a share of Intrexon common stock and one CPR. For more information on the CPRs, see the section entitled Contingent payment rights agreement.

GenVec 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, without interest, equal to the product of such fraction multiplied by the last reported sale price of Intrexon common stock on the NYSE on the last complete trading day prior to the effective time of the merger.

Treatment of GenVec stock options and warrants (see page 101)

Each outstanding, unvested GenVec stock option will fully vest upon the approval of the merger proposal by the GenVec shareholders. In connection with the merger, each outstanding GenVec stock option may be exercised (including net exercise) for a period of 15 days prior to the effective time of the merger. Each share of GenVec common stock resulting from the exercise of an option during this exercise window will be treated as a share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger and will be eligible to receive the merger consideration. Any GenVec stock option that is not exercised and remains outstanding at the effective time of the merger will be automatically cancelled for no consideration.

At the effective time of the merger, each outstanding, unexpired and unexercised warrant to purchase shares of GenVec common stock will be assumed by Intrexon and converted into a warrant to purchase, at an aggregate exercise price equal to the aggregate exercise price of the warrant as of immediately prior to the effective time of

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the merger, and in lieu of the shares of GenVec common stock otherwise issuable upon exercise of such warrant, the applicable merger consideration (including shares of Intrexon common stock and CPRs) that would have been receivable upon consummation of the merger by the holder of such warrant if such warrant had been exercised immediately prior to the effective time of the merger. The other pre-existing terms of the warrants will continue to apply in accordance with their terms following the merger. See the section entitled The merger agreement Treatment of GenVec stock options and warrants.

Contingent payment rights agreement (see page 115)

Each share of GenVec common stock outstanding at the effective time of the merger (including through exercise of a GenVec stock option), and each share of GenVec common stock underlying a warrant that is converted into a warrant to purchase merger consideration, will, upon the effective time of the merger, or with respect to a warrant, upon the exercise of such warrant, entitle the holder to receive one CPR. Each CPR represents the right to receive an amount equal to (i) 50% of (a) all milestone payments, if any, received by Intrexon or GenVec for milestones that are achieved or occur under the NVS License Agreement within 36 months after the effective time of the merger and (b) all royalty payments, if any, received by Intrexon or GenVec under the NVS License Agreement within such 36-month period, *divided by* (ii) the total number of CPRs outstanding at such time. To the extent any applicable milestone or royalty payment is received by Intrexon or GenVec, each holder of a CPR will receive a payment equal to the amount described in the foregoing sentence multiplied by the number of CPRs held by such holder at the applicable time. Payments to holders of CPRs will be made in cash, except under certain circumstances, where payments will be made in the form of shares of Intrexon common stock. See the section entitled Contingent payment rights agreement Form of CPR payments.

The GenVec special meeting (see page 57)

Date, time and place

The special meeting will be held at 8:30 a.m., Eastern Daylight Time, on June 15, 2017, at GenVec s office located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878.

Purpose of the special meeting

At the special meeting you will be asked:

to consider and vote upon the merger proposal;

to consider and vote upon the merger-related compensation proposal; and

to consider and vote upon the adjournment proposal.

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

Record date; stock entitled to vote

The GenVec board of directors has fixed the close of business on April 28, 2017 as the record date for the determination of shareholders entitled to notice of, and to vote at, the special meeting and at any adjournment or postponement of the special meeting.

At the close of business on the record date, there were 2,273,632 shares of GenVec common stock outstanding and entitled to vote held by 17 holders of record. As of the record date, the directors and executive officers of GenVec and their affiliates as a group owned and were entitled to vote 72,437 shares of GenVec common stock, or approximately 3.2% of the shares of GenVec common stock outstanding and entitled to vote as of that date.

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Vote required

The votes required for each proposal are as follows:

Proposal 1. The merger proposal requires the affirmative vote of the holders of a majority of the outstanding shares of GenVec common stock.

Proposal 2. The merger-related compensation proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.

Proposal 3. The adjournment proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.

If you vote ABSTAIN on the merger proposal, the merger-related compensation proposal or the adjournment proposal, it will have the same effect as voting AGAINST such proposal.

If you are a shareholder of record and do not vote by completing your proxy card, by telephone 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 it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal.

If your shares are held in street name and you do not provide your broker, bank or other nominee with instructions as to how to vote your shares on a particular proposal, your shares will not be voted on that proposal. This will have the same effect as voting AGAINST the merger proposal, but it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal.

Recommendations of the GenVec board of directors (see page 57)

The GenVec board of directors unanimously recommends that GenVec s shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment proposal.

GenVec s reasons for the merger (see page 73)

In the course of reaching its decision to adopt the merger agreement and to recommend that GenVec shareholders vote to approve the merger proposal, GenVec 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 Recommendation of the GenVec board of directors; GenVec s reasons for the merger.

Opinion of Roth Capital Partners (see page 77)

GenVec s board of directors received an opinion, dated January 24, 2017, from Roth Capital Partners, LLC, referred to herein as Roth, that, as of that date and based on and subject to assumptions, factors, qualifications and limitations set forth therein, the consideration to be received by holders of GenVec common stock in the merger was fair, from a financial point of view, to such holders. The full text of Roth s written opinion, which sets forth, among other things, the procedures followed, assumptions made, qualifications and limitations on the review undertaken and other matters

considered by Roth in rendering its opinion, is attached as Annex E to this proxy statement/prospectus. The opinion was prepared for the information of the GenVec board of directors and addresses only the fairness, from a financial point of view, to holders of GenVec common stock of the consideration to be received by such holders in the merger. The opinion does not address any other aspect of the

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proposed merger and does not constitute a recommendation to the GenVec board of directors or to any other persons in respect of the proposed merger, including as to how any holder of shares of GenVec common stock should vote or act in respect of the proposed merger.

Interests of GenVec s directors and executive officers in the merger (see page 87)

In considering the recommendation of the GenVec board of directors to approve the merger proposal, GenVec shareholders should be aware that GenVec 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 GenVec board of directors was aware of and considered these potential interests, among other things, in adopting the merger agreement and approving the merger, and in recommending that the merger agreement be adopted by shareholders. These interests include accelerated vesting of certain outstanding GenVec equity awards held by the directors and the executive officers of GenVec in connection with the merger, potential continued employment of executive officers following the merger, potential severance payments and benefits if the employment of the executive officers is terminated in connection with or following the merger, and the continuation, for a period of six years following the effective time of the merger, of indemnification and insurance coverage of the directors and executive officers.

Appraisal rights (see page 147)

GenVec shareholders who do not vote in favor of the adoption of the merger agreement and comply precisely with the applicable requirements of Section 262 of the DGCL will be entitled to seek appraisal rights in connection with the merger. The text of the applicable provisions of Delaware law is included as Annex D to this proxy statement/prospectus.

Regulatory approvals required for the merger (see page 96)

Intrexon and GenVec are not aware of any material governmental approvals, waivers or actions that are required to complete the merger. If any such governmental approvals, waivers or actions are required, Intrexon and GenVec have agreed to use reasonable best efforts to obtain those approvals, waivers or actions. There can be no assurance, however, that any waivers, approvals or actions will be obtained.

The merger agreement (see page 101)

A copy of the merger agreement 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 111)

Mutual conditions

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

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

the consummation of the merger shall not then be restrained, enjoined or prohibited by any order of any governmental authority and there shall not be in effect any law enacted or promulgated by any governmental authority that prevents or makes illegal the consummation of the merger;

the shares of Intrexon common stock issuable to the holders of GenVec common stock pursuant to the merger agreement shall have been approved for listing on NYSE, subject to official notice of issuance;

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the Registration Statement on Form S-4 shall have been declared effective by the SEC, no stop order suspending the effectiveness of such Registration Statement shall be in effect and no proceedings for such purpose shall be pending before the SEC; and

holders of no more than 20% of the outstanding shares of GenVec s common stock shall have validly exercised their appraisal, dissenters or similar rights under applicable law.

Conditions to the obligations of GenVec

The obligations of GenVec 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 as of the date of the merger agreement and as of the effective time of the merger, as though made at such time, generally subject to a material adverse effect standard; and

Intrexon shall have performed in all material respects the covenants and agreements required to be performed by it under the merger agreement prior to the closing of the merger.

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 conditions, including

the representations and warranties of GenVec shall be, with certain exceptions, true and correct as of the date of the merger agreement and as of the effective time of the merger, as though made at such time, generally subject to a material adverse effect standard;

GenVec shall have performed in all material respects the covenants and agreements required to be performed by it under the merger agreement prior to the closing of the merger;

since January 24, 2017, there shall not have been any change, event, development, condition, occurrence or effect that has had or would reasonably be expected to have a material adverse effect on GenVec; and

GenVec shall have delivered to Intrexon a statement satisfying the requirements of certain U.S. treasury regulations certifying that interests in GenVec are not United States real property interests within the meaning of Section 897(c) of the Internal Revenue Code of 1986, as amended, which we refer to as the Code.

No solicitation by GenVec (see page 108)

Subject to certain exceptions, the merger agreement precludes GenVec from soliciting from a third party, or engaging in discussions or negotiations with a third party with respect to, a proposal for an alternative transaction, including the acquisition of a significant interest in GenVec s equity or assets. Notwithstanding such restrictions, the merger agreement provides that, prior to approval of the merger proposal by GenVec s shareholders, under certain specified circumstances, if GenVec receives an unsolicited proposal from a third party for an alternative transaction that its board of directors determines in good faith could reasonably be expected to result in a proposal that is superior to the merger, GenVec may furnish information, including non-public information, to that third party and engage in discussions or negotiations regarding an alternative transaction with that third party. GenVec s board of directors may change its recommendation to GenVec s shareholders to approve the merger proposal, and, as described below under

Termination of the merger agreement, GenVec may terminate the merger agreement, if GenVec has received a proposal for an alternative transaction that its board of directors determines in good faith to be superior to the merger and certain other

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conditions are met, including GenVec s provision to Intrexon of notice of such a proposal and an opportunity to negotiate revisions to the terms of the merger agreement.

In addition, under certain circumstances, GenVec s board of directors may change its recommendation to GenVec s shareholders to approve the merger proposal in response to an event that was not known to the board, and could not reasonably be expected to have been known to the board, on or prior to the date of the merger agreement. The merger agreement refers to this as an intervening event. However, the board of directors of GenVec may only change its recommendation in response to an intervening event if (i) the board determines in good faith that such intervening event has occurred and is continuing, (ii) the board determines that failure to change its recommendation would breach or would reasonably be expected to breach the board s fiduciary duties, and (iii) certain other conditions are met, including GenVec s provision to Intrexon of notice of such intervening event and an opportunity to negotiate revisions to the terms of the merger agreement.

Termination of the merger agreement (see page 112)

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

by mutual written consent of Intrexon and GenVec;

by either GenVec or Intrexon, if GenVec shall have failed to obtain the requisite affirmative vote of its shareholders to adopt the merger agreement;

by either GenVec or Intrexon, if a governmental authority shall have issued a final and non-appealable order that permanently restrains, enjoins or prohibits consummation of the merger, or if any law is in effect that prevents or makes illegal consummation of the merger;

by either GenVec or Intrexon, if the merger is not consummated on or before July 24, 2017;

by Intrexon, prior to the approval of the merger proposal by the shareholders of GenVec, if the board of directors of GenVec shall have effected a change in its recommendation to GenVec s shareholders to adopt the merger agreement;

by GenVec, prior to the approval of the merger proposal by its shareholders, in order to accept a superior proposal, provided that GenVec has complied with the provisions of the merger agreement that prohibit solicitation of alternative acquisition proposals (as described above under No solicitation by GenVec) and met certain other conditions, including payment to Intrexon of the termination fee discussed below; or

by either party if there shall have been a breach of any of the covenants or agreements or any of the representations or warranties in the merger agreement by the other party that is not cured (or is not capable of cure) within the timeframe specified in the merger agreement, which breach or misrepresentation would

prevent the satisfaction of certain conditions to closing.

Termination fee

GenVec shall pay Intrexon a termination fee of $550,000, if the merger agreement is terminated:

by Intrexon, prior to the approval of the merger proposal by the shareholders of GenVec, due to the board of directors of GenVec effecting a change in its recommendation to GenVec s shareholders to adopt the merger agreement;

by GenVec, prior to the adoption of the merger proposal by its shareholders, in order to accept a superior proposal; or

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by Intrexon or GenVec because the merger is not consummated on or before July 24, 2017 or by Intrexon because there has been an uncured breach by GenVec of any covenant or agreement in the merger agreement, which breach would prevent the satisfaction of certain conditions to closing, and (i) an acquisition proposal has been publicly announced or made to GenVec after the date of the merger agreement (but prior to the termination of the merger agreement) and has not been withdrawn prior to the date of termination of the merger agreement, and (ii) within twelve months of such termination, GenVec enters into a letter of intent or agreement with respect to, or consummates, an acquisition proposal.

In addition, GenVec shall pay to Intrexon, in an amount not to exceed $400,000, the reasonable costs, fees and expenses incurred by Intrexon in connection with the investigation, due diligence, negotiation and documentation of the merger agreement, in the event Intrexon (i) terminates the merger agreement because there has been an uncured breach by GenVec of any covenant or agreement in the merger agreement, which breach would prevent the satisfaction of certain conditions to closing and (ii) within six months after the date of such termination, GenVec enters into a definitive agreement with a third party in respect of an acquisition proposal. In addition to such expense reimbursement (and only when such expense reimbursement is due), GenVec will also be obligated to pay Intrexon an additional $200,000 if GenVec willfully breached in any material respect the provisions of the merger agreement prohibiting solicitation of alternative acquisition proposals (as described above under No solicitation by GenVec). In the event that GenVec reimburses Intrexon s expenses as described in this paragraph and the termination fee thereafter becomes payable, the termination fee will be reduced by the expenses so reimbursed (as well as by the additional $200,000 paid by GenVec as described in the previous sentence, if applicable).

Ownership of Intrexon after the merger

Based on the number of shares of GenVec common stock outstanding as of May 8, 2017 (including the number of shares of GenVec common stock potentially issuable upon the exercise of stock options and warrants), Intrexon expects to issue approximately 696,281 shares of its common stock to GenVec shareholders in connection with the closing of the merger. The CPRs are to be paid in cash unless such payment would prevent the transactions contemplated by the merger agreement from being treated as a tax free reorganization, in which case Intrexon would issue shares of its common stock in lieu of payment in cash of such amounts determined to be payable under the contingent payment rights agreement. The actual number of shares of Intrexon common stock to be issued as stock consideration will be determined at the completion of the merger based on the number of GenVec common shares outstanding at such time, and the actual number of shares of Intrexon common stock to be issued in connection with the CPRs (if any) will ultimately depend on the aggregate amount of any milestone payments received based on milestones that are achieved or occur, and on the aggregate amount of any royalty payments received, within 36 months after the closing of the merger under the NVS License Agreement.

Immediately after the consummation of the merger, and based on the number of shares of Intrexon common stock outstanding as of the record date, it is expected that former GenVec shareholders will own approximately 0.58% of the 119,565,470 shares of Intrexon common stock then outstanding.

Directors and management after the merger (see page 96)

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 122)

Pursuant to the terms of the merger agreement, Intrexon and GenVec agreed not to take any action that would reasonably be expected to prevent or impede the merger from qualifying as a reorganization within the meaning of

Section 368(a) of the Code. However, the qualification as a reorganization under the Code is

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dependent on various requirements, not all of which can be finally determined at this time, most specifically the requirement that the value of Intrexon common stock received by holders of GenVec common stock constitute a certain percentage of the total consideration, including the fair market value of the CPRs received and any cash received by such holders. The final measurement of this test depends on facts and circumstances that cannot yet be determined.

Assuming that the merger is treated as a reorganization and a closed transaction, (i) a United States holder will recognize gain, but not loss, with respect to the receipt of merger consideration other than Intrexon voting common stock (e.g., CPRs and cash) and (ii) will recognize no gain or loss with respect to the Intrexon voting common stock received in the merger in exchange for GenVec common stock. If the merger does not qualify as a reorganization, the receipt of the merger consideration by a United States holder in exchange for shares of GenVec common stock will be a taxable transaction for United States federal income tax purposes. The merger agreement does not require that the merger qualify as a tax-free reorganization and does not contemplate that a tax opinion will be required or delivered as a condition to closing.

For a more complete discussion of the tax consequences of the merger, see the section entitled Material U.S. federal income tax consequences of the merger. **Tax matters are very complicated, and the tax consequences of the merger to a particular GenVec shareholder will depend in part on such shareholder s circumstances. Accordingly, you are urged to 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 96)

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 (see page 102)

Intrexon has appointed American Stock Transfer & Trust Company, LLC, referred to herein as AST, as its exchange agent to coordinate the payment of the stock consideration following the merger. If you own shares of GenVec common stock that are held in street name, meaning that your shares are held by a 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 stock for those shares. If you are the record holder of book-entry shares or hold certificated shares, the exchange agent will send you written instructions for surrendering your book-entry shares or certificates and obtaining the stock consideration at or about the date on which GenVec completes the merger. **Do not send in your share certificates now.**

Intrexon has also appointed AST as its rights agent to coordinate the payment of cash and/or shares of Intrexon common stock in connection with the CPRs. Holders of GenVec common stock will receive one CPR for each share of GenVec common stock outstanding immediately prior to the effective time of the merger. The amount of cash and/or shares of Intrexon common stock ultimately payable in connection with the CPRs will be determined pursuant to the terms of the contingent payment rights agreement entered into by Intrexon and AST, the form of which is included as Annex B to this proxy statement/prospectus. Pursuant to the terms of the agreement, Intrexon will, on or before certain specified dates, provide notice to AST indicating, among other things, the amount of cash and/or shares of Intrexon common stock payable to the holders of the CPRs.

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Comparison of Intrexon and GenVec shareholder rights (see page 129)

The rights of Intrexon shareholders are currently governed by the Virginia Stock Corporation Act, which we refer to as the VSCA, and the articles of incorporation and bylaws of Intrexon. The rights of GenVec shareholders are currently governed by the DGCL, and the certificate of incorporation and bylaws of GenVec. Upon completion of the merger, GenVec shareholders will become Intrexon shareholders. GenVec shareholders will have different rights as shareholders of Intrexon than as shareholders of GenVec, because the VSCA and the articles of incorporation and bylaws of Intrexon contain provisions that are different from the provisions contained in the DGCL and the certificate of incorporation and bylaws of GenVec.

Risk factors (see page 27)

The merger (including the possibility that the merger may not be consummated) poses a number of risks to GenVec shareholders. In addition, GenVec 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 historical consolidated financial data for the periods and as of the dates indicated. The consolidated statement of operations data for the years ended December 31, 2016, 2015, 2014, 2013 and 2012 and the consolidated balance sheet data as of December 31, 2016, 2015, 2014, 2013 and 2012 are derived from Intrexon s audited consolidated financial statements. The consolidated statement of operations data for the three-month periods ended March 31, 2017 and March 31, 2016 and the consolidated balance sheet data as of March 31, 2017 are derived from Intrexon s unaudited consolidated financial statements. You should read the following selected consolidated financial data together with the financial statements that are included in Intrexon s annual report on Form 10-K and quarterly report on Form 10-Q, incorporated by reference into this document, including their accompanying notes and management s discussion and analysis of operations and financial condition contained in such reports. See the section entitled Where you can find more information.

In the opinion of Intrexon s 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. Intrexon s audited consolidated financial statements have been prepared in U.S. dollars in accordance with U.S. GAAP.

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.

	Three Months Ended March 31,		Year Ended December 31,				
	2017	2016	2016	2015	2014	2013	2012
	(In thousands, except share and per share amounts)						
Statement of Operations Data:							
Collaboration and licensing revenues	$ 33,065	$ 24,073	$ 109,871	$ 87,821	$ 45,212	$ 23,525	$ 13,706
Product revenues	8,130	8,555	36,958	41,879	11,481	164	
Service revenues	12,031	10,665	43,049	42,923	14,761		
Total revenues	53,747	43,438	190,926	173,605	71,930	23,760	13,774
Total operating expenses	85,128	83,971	316,092	320,469	141,892	81,783	88,931
Operating loss	(31,381)	(40,533)	(125,166)	(146,864)	(69,962)	(58,023)	(75,157)
Net loss	(32,377)	(65,320)	(190,274)	(87,994)	(85,616)	(40,908)	(81,874)
Net loss attributable to noncontrolling interests	978	891	3,662	3,501	3,794	1,928	
	(31,399)	(64,429)	(186,612)	(84,493)	(81,822)	(38,980)	(81,874)

Net loss attributable to Intrexon							
Accretion of dividends on redeemable convertible preferred stock						(18,391)	(21,994)
Net loss attributable to common shareholders	(31,399)	(64,429)	(186,612)	(84,493)	(81,822)	(57,371)	(103,868)
Net loss attributable to common shareholders per share, basic and diluted	(0.26)	(0.55)	$ (1.58)	$ (0.76)	$ (0.83)	$ (1.40)	$ (18.77)
Weighted average shares outstanding, basic and diluted	118,956,780	116,861,151	117,983,836	111,066,352	99,170,653	40,951,952	5,533,690

	As of March 31, 2017	2016	2015[4]	As of December 31, 2014[3]	2013[2]	2012
				(In thousands)		
Balance Sheet Data:						
Cash and cash equivalents	$ 69,852	$ 62,607	$ 135,782	$ 27,466	$ 49,509	$ 10,403
Short-term and long-term investments	135,377	180,595	207,975	115,608	188,561	260
Equity securities	21,476	23,522	83,653	164,889	141,525	83,116
Investments in preferred stock	134,661	129,545				
Total assets	915,928	949,068	982,046	576,272	469,472	151,646
Deferred revenue, current and non-current	297,291	310,142	197,729	113,209	73,571	58,636
Other liabilities[1]	68,476	69,678	79,431	53,774	14,558	7,904
Redeemable convertible preferred stock						406,659
Total Intrexon shareholders	528,538	560,237	694,078	384,761	366,722	(321,553)

equity (deficit)						
Noncontrolling interests	21,623	9,011	10,808	24,528	14,621	
Total equity (deficit)	550,161	569,248	704,886	409,289	381,343	(321,553)

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(1) Other liabilities include $7,996, $7,948, $8,528, $10,369 and $1,653 of long term debt as of March 31, 2017, and December 31, 2016, 2015, 2014 and 2013, respectively; and $6,887, $8,801, $15,629 and $20,485 of deferred consideration as of March 31, 2017, and December 31, 2016, 2015 and 2014, respectively.
(2) In 2013, Intrexon acquired ownership interests in AquaBounty Technologies, Inc., referred to herein as AquaBounty, and Biological & Popular Culture, Inc., or BioPop, which resulted in its gaining control over these entities, resulting in consolidation effective on the respective acquisition dates.
(3) In 2014, Intrexon acquired Medistem, Inc. and Trans Ova and began including the results of their operations effective on the respective acquisition dates.
(4) In 2015, Intrexon acquired ActoGeniX NV, or ActoGeniX, Okanagan, and Oxitec and began including the results of their operations effective on the respective acquisition dates.

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GenVec selected historical financial and other data

The following table sets forth GenVec s selected historical financial data for the periods and as of the dates indicated. The statement of operations data for the three months ended March 31, 2017 and 2016 and the balance sheet data as of March 31, 2017 are derived from GenVec s unaudited condensed financial statements included elsewhere in this proxy statement/prospectus. The statement of operations data for the years ended December 31, 2016 and 2015 and the balance sheet data as of December 31, 2016 and 2015 are derived from GenVec s audited financial statements included elsewhere in this proxy statement/prospectus. The statement of operations data for the years ended December 31, 2014, 2013 and 2012 and the balance sheet data as of December 31, 2014, 2013 and 2012 are derived from GenVec s audited financial statements that are not included or incorporated by reference in this proxy statement/prospectus, but which have previously been filed with the SEC and are publicly available. See the section entitled Where you can find more information. You should read the following selected financial data together with the section entitled GenVec management s discussion and analysis of financial conditions and results of operations and with GenVec s audited and unaudited condensed financial statements and related notes included elsewhere in this proxy statement/prospectus.

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. GenVec s audited financial statements have been prepared in U.S. dollars in accordance with U.S. GAAP. All share and per share amounts set forth in the following tables have been retroactively adjusted to reflect the reverse stock split.

GenVec 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.

Summary Statement of Operations:

	Three months ended March 31,		Years ended December 31,				
	2017	2016	2016	2015	2014	2013	2012
	(in thousands, except per share data)						
Revenues	$ 114	$ 290	$ 511	$ 885	$ 6,041	$ 3,682	$ 9,353
Operating expenses:							
General and administrative	2,654	1,412	5,227	4,901	6,314	8,484	9,102
Research and development	767	737	2,499	2,551	2,264	5,492	14,348
Total operating expenses	3,421	2,149	7,726	7,452	8,578	13,976	23,450
Operating loss	(3,307)	(1,859)	(7,215)	(6,567)	(2,537)	(10,294)	(14,097)
Other income, net	(966)	(1)	1,428	22	22	275	42
Net loss	$ (4,273)	$ (1,860)	$ (5,787)	$ (6,545)	$ (2,515)	$ (10,019)	$ (14,055)

Basic and diluted net loss per share	$ (1.88)	$ (1.08)	$ (2.78)	$ (3.90)	$ (1.59)	$ (7.74)	$ (10.86)
Shares used in computation of basic and diluted net loss per share	2,273,632	1,726,435	2,080,089	1,677,812	1,582,698	1,294,824	1,293,994

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Summary Balance Sheet Data:

	As of March 31, 2017	As of December 31, 2016	2015	2014	2013	2012
				(in thousands)		
Cash, cash equivalents, and short-term investments	$ 4,285	$ 7,165	$ 8,676	$ 14,692	$ 6,105	$ 15,255
Working capital	2,398	5,611	7,393	13,014	3,999	12,741
Total assets	4,906	7,707	9,463	15,609	7,254	17,430
Accumulated deficit	(294,900)	(290,627)	(284,840)	(278,295)	(275,780)	(265,761)
Total stockholders equity	583	4,705	7,680	13,298	4,610	13,743

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Comparative market price and dividend information

Intrexon common stock is listed and traded on the NYSE under the symbol XON. GenVec common stock is listed and traded on NASDAQ under the symbol GNVC. The following table sets forth, for the respective periods indicated, the high and low sale prices per share of Intrexon common stock (as reported on the NYSE) and GenVec common stock (as reported on NASDAQ), as well as dividend information. The sale prices per share of GenVec common set forth in the table below have been retroactively adjusted to reflect the reverse stock split.

	Intrexon			GenVec		
	High	Low	Dividend	High	Low	Dividend
Year Ended December 31, 2017						
Second Quarter (through May 8, 2017)	$ 21.75	$ 18.41		$ 6.92	$ 5.44	
First Quarter	$ 26.95	$ 18.55	(1)	$ 10.44	$ 3.17	
Year Ended December 31, 2016						
Fourth Quarter	$ 32.90	$ 24.01		$ 4.70	$ 2.70	
Third Quarter	$ 30.56	$ 22.88		$ 7.60	$ 4.52	
Second Quarter	$ 38.60	$ 22.81		$ 14.00	$ 5.71	
First Quarter	$ 40.24	$ 18.52		$ 18.50	$ 3.50	
Year Ended December 31, 2015						
Fourth Quarter	$ 43.76	$ 27.52		$ 36.90	$ 15.10	
Third Quarter	$ 69.45	$ 28.39		$ 35.00	$ 20.00	
Second Quarter	$ 51.44	$ 37.30	(2)	$ 30.80	$ 17.90	
First Quarter	$ 50.98	$ 25.23		$ 46.70	$ 20.40	
Year Ended December 31, 2014						
Fourth Quarter	$ 28.78	$ 16.13		$ 23.00	$ 16.11	
Third quarter	$ 26.62	$ 17.35		$ 27.60	$ 18.20	
Second quarter	$ 26.60	$ 13.13		$ 30.10	$ 19.80	
First quarter	$ 38.50	$ 22.53		$ 42.50	$ 21.80	

(1) As further described under the section entitled Dividend policy below, on January 18, 2017, Intrexon distributed 1,776,557 shares of AquaBounty common stock to its shareholders.

(2) As further described under the section entitled Dividend policy below, in June 2015 Intrexon distributed 17,830,305 shares of common stock of ZIOPHARM Oncology, Inc., referred to herein as ZIOPHARM, to its shareholders.

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The following table sets forth the closing sale prices per share of Intrexon common stock and GenVec common stock as of January 23, 2017 (as reported on the NYSE and NASDAQ, respectively), the last trading day prior to the public announcement of the proposed merger, and as of May 8, 2017 the most recent practicable trading day prior to the date of this proxy statement/prospectus. The table also includes the market value of GenVec common stock on an equivalent price per share basis, as determined by reference to the stock consideration to be received in respect of each share of GenVec common stock in the merger. These equivalent prices per share reflect the fluctuating value of the Intrexon common stock that GenVec shareholders would receive in exchange for each share of GenVec if the merger was completed on either of these dates, applying an exchange ratio of 0.297 shares of Intrexon common stock for each share of GenVec common stock. Immediately prior to the public announcement of the transaction, the exchange ratio represented an implied value of $7.00 per share of GenVec common stock based on Intrexon s five-day volume weighted average price as of January 23, 2017, the last trading day before the first public announcement of the proposed merger. The exchange ratio, and resulting equivalent value of GenVec common stock, do not give effect to any payment under the contingent payment rights agreement.

	Intrexon Common Stock	GenVec Common Stock	Exchange Ratio	Equivalent Value of GenVec Common Stock (Excluding the Value of Contingent Payment Rights)
January 23, 2017	$ 22.09	$ 4.54	0.297	$ 6.56
May 8, 2017	$ 19.36	$ 5.88	0.297	$ 5.75

The above table shows only historical comparisons, and these comparisons may not provide meaningful information to GenVec shareholders in determining whether to adopt the merger agreement. The value of Intrexon common stock is subject to fluctuation and the consideration to GenVec shareholders will depend on the market value of Intrexon common stock at the time the merger is completed. GenVec shareholders are urged to obtain current market quotations for Intrexon common stock and GenVec common stock and to review carefully the other information contained in this proxy statement/prospectus or incorporated by reference into this proxy statement/prospectus in considering whether to adopt the merger agreement.

Dividend policy

Intrexon has never declared or paid any cash dividends on its capital stock. Intrexon currently intends to retain earnings, if any, to finance the growth and development of its business. It does not expect to pay any cash dividends on its common stock in the foreseeable future. Intrexon has on two occasions distributed equity securities of other companies it owned to its shareholders as a special stock dividend: 17,830,305 shares of ZIOPHARM common stock were distributed in June 2015 and 1,776,557 shares of AquaBounty common stock were distributed in January 2017. Payment of future dividends, if any, will be at the discretion of Intrexon s board of directors and will depend on its financial condition, results of operations, capital requirements, restrictions contained in current or future financing instruments, provisions of applicable law and other factors that its board of directors deems relevant.

GenVec has never declared or paid any cash dividends on its capital stock and does not anticipate paying any cash dividends in the foreseeable future.

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Comparative historical and unaudited pro forma per share data

The following table sets forth selected historical and unaudited pro forma per share information for Intrexon and GenVec for the three months ended March 31, 2017 and the year ended December 31, 2016. The unaudited pro forma combined and pro forma combined equivalent net loss attributable to common shareholders per share information set forth in the following table reflects the merger as though it had occurred on January 1, 2016. The unaudited pro forma book value and pro forma combined equivalent book value per common share at March 31, 2017 reflects the merger as though it had occurred on March 31, 2017. The information in the tables is based on, and should be read together with, the historical financial information that Intrexon has presented in its filings with the SEC and the financial statements of GenVec and notes thereto included elsewhere in this proxy statement/prospectus. See the section entitled Where you can find more information.

The pro forma data in the table assume that the merger is accounted for using the acquisition method of accounting and represent current estimates 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 GenVec 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 GenVec s data to Intrexon s accounting policies. However, Intrexon has made certain adjustments to the historical book values of the assets and liabilities of GenVec as of March 31, 2017 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 GenVec s developed technology and know-how. The pro forma information is preliminary and is subject to change once Intrexon has determined the final purchase price for GenVec and has completed the detailed valuation studies necessary to finalize the pro forma combined and pro forma combined equivalent amounts included in this section, which changes could be material.

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The unaudited pro forma combined and pro forma combined equivalent data per share data is presented for illustrative purposes only and is not necessarily indicative of actual or future financial position or results of operations that would have been realized if the proposed merger had been completed as of the dates indicated or will be realized upon the completion of the proposed merger. All share and per share amounts set forth in the following table with respect to GenVec common stock have been retroactively adjusted to reflect the reverse stock split.

	Three months ended March 31, 2017	Year ended December 31, 2016
Intrexon historical data:		
Net loss attributable to common shareholders per share, basic and diluted	$ (0.26)	$ (1.58)
Book value per common share[1]	$ 4.42	
GenVec historical data:		
Net loss per common share, basic and diluted	$ (1.88)	$ (2.78)
Book value per common share[1]	$ 0.26	
Unaudited pro forma combined:[2]		
Net loss attributable to common shareholders per share, basic and diluted[3]	$ (0.30)	$ (1.63)
Book value per common share[1]	$ 4.51	
Unaudited pro forma combined equivalent data:[4]		
Net loss attributable to common shareholders per share, basic and diluted	$ (0.09)	$ (0.48)
Book value per common share	$ 1.34	

(1) The historical book value per common share is computed by dividing shareholders equity by the number of shares of common stock outstanding as of March 31, 2017. The unaudited pro forma combined book value per share is computed by dividing the pro forma combined shareholders equity by the pro forma number of shares of Intrexon common stock outstanding as of March 31, 2017, assuming the merger had occurred as of that date. As of March 31, 2017, there were 119,552,674 shares of Intrexon common stock outstanding.

(2) The unaudited pro forma combined amounts for the three months ended March 31, 2017 and the year ended December 31, 2016 have been developed from the (i) historical financial information that Intrexon has presented in its filings with the SEC and (ii) the financial statements of GenVec and notes thereto included elsewhere in this proxy statement/prospectus. As of March 31, 2017, there were 2,273,632 shares of GenVec common stock outstanding.

(3) Unaudited pro forma net loss attributable to common shareholders per share, basic and diluted has been calculated as of March 31, 2017 and December 31, 2016, after giving effect to the issuance of 696,281 shares assumed to be issued in the merger.

This reflects (i) 675,269 shares of Intrexon common stock issued in exchange for the 2,273,632 shares of GenVec common stock outstanding as of March 31, 2017, (ii) 21,012 shares of Intrexon common stock issuable pursuant to the exercise of the outstanding stock options of GenVec with an exercise price that is less than the implied price of $7.00

per share of GenVec common stock in the merger, (iii) no shares of Intrexon common stock issuable pursuant to outstanding stock options of GenVec with an exercise price that is equal to, or in excess of, the implied price of $7.00 per share of GenVec common stock in the merger, and (iv) no shares of Intrexon common stock issuable pursuant to the warrants to purchase shares of GenVec common stock as the exercise price per share is in excess of the implied price of $7.00 per share of GenVec common stock in the merger.

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The foregoing also assumes (x) the closing price of Intrexon s common stock of $19.36 as reported on the NYSE on May 8, 2017, and (y) any payment made in respect of the CPRs is made in cash and not shares of Intrexon common stock.

(4) The unaudited pro forma combined equivalent data is calculated by multiplying the unaudited pro forma combined data amounts by the exchange ratio of 0.297.

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Risk factors

By voting in favor of the merger proposal, GenVec shareholders will be choosing to invest in Intrexon common stock following the consummation of the merger. An investment in Intrexon common stock involves a high degree of risk. In addition to the other information included and incorporated by reference in this proxy statement/prospectus, including the matters addressed in the section entitled Cautionary note regarding forward-looking statements , you should carefully consider the following risks described below in evaluating whether to vote to approve the merger proposal. In addition, you should read carefully and consider the risks associated with the businesses of each of Intrexon and GenVec because these risks will also affect the combined company. Information on risks associated with GenVec s business can be found below. Information on risks associated with Intrexon s business can be found in Intrexon s Annual Report on Form 10-K for the year ended December 31, 2016 as updated by any subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, which are filed with the SEC and incorporated by reference into this proxy statement/prospectus. For further information regarding the documents incorporated into this proxy statement/prospectus by reference, see the section entitled Where you can find more information. Realization of any of the risks described below, any of the events described under Cautionary note regarding forward-looking statements or any of the risks or events described in the documents incorporated by reference could have a material adverse effect on Intrexon s, GenVec s, or the combined company s businesses, financial condition, cash flows and results of operations and could result in a decline in the trading prices of their respective common units.

Risks related to the merger

Failure to consummate the merger could negatively impact the stock price and the future business and financial results of Intrexon and GenVec.

The merger agreement contains a number of customary conditions to closing, including the accuracy of Intrexon s and GenVec s representations and warranties to varying standards, the performance of each company s covenants, the absence of any legal prohibitions to closing, the adoption of the merger agreement by GenVec shareholders and certain other conditions. Many of the conditions to closing are not within either Intrexon s or GenVec s control and neither company can predict when or if these conditions will be satisfied.

If any condition to the merger is not satisfied or waived, it is possible that the merger will not be consummated in the expected time frame or at all. In addition, Intrexon and GenVec may terminate the merger agreement under certain circumstances even if the merger agreement is adopted by GenVec shareholders, including if the merger has not been completed, subject to certain conditions, on or before July 24, 2017. If the merger is not completed for any reason, the ongoing businesses of Intrexon and GenVec may be adversely affected and the companies will be subject to several risks, including the following:

- having to pay all of the fees and expenses incurred in connection with the proposed merger;
- GenVec having to pay, under certain circumstances, a termination fee equal to $550,000;
- GenVec having to reimburse, under certain circumstances, Intrexon for reasonable out-of-pocket expenses in an amount of up to $400,000 and to pay, in certain circumstances, an additional expense amount equal to $200,000; and

focusing each company s management on the proposed merger instead of on pursuing other opportunities that could be beneficial to Intrexon and GenVec, without realizing any of the benefits of having the proposed merger completed.

If the merger agreement is terminated, Intrexon or GenVec may be unable to find another party willing to engage in a similar transaction on terms as favorable as those set forth in the merger agreement, or at all. The negative publicity that could accompany such a termination could adversely impact GenVec s ability to find an alternate partner for a strategic transaction or to obtain required financing for any such transaction.

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In addition, although Intrexon and GenVec are not aware of any material governmental approvals, waivers or actions that are required to complete the merger, if any such approvals, waivers or actions are required, there can be no assurance, that any such waivers, approvals or actions will be obtained.

Failure to complete the merger could result in a decrease in the market price of GenVec common stock to the extent that the current market price of those shares reflects a market assumption that the merger will be completed. In addition, neither company would realize any of the expected benefits of having completed the merger. Further, failure to complete the merger could result in damage to GenVec s reputation and business relationships. GenVec could also be subject to litigation related to any failure to consummate the merger or related to any enforcement proceedings commenced against GenVec to perform its obligations under the merger agreement.

Therefore, a failure to consummate the merger could materially and adversely affect Intrexon s or GenVec s business, financial results and stock price, and could limit each company s ability to pursue its strategic goals.

GenVec has suffered recurring losses from operations and has an accumulated deficit, which raises substantial doubt about its ability to continue as a going concern, and, if the merger is not consummated, absent additional financing, GenVec may be unable to remain a going concern.

GenVec has suffered recurring losses from operations and has an accumulated deficit. If the merger is not consummated and GenVec is unsuccessful in its efforts to raise additional capital, based on GenVec s current levels of operating expenses, GenVec s current capital is not expected to fund its operations for the next twelve months. These conditions raise substantial doubt about GenVec s ability to continue as a going concern. The Report of Independent Registered Public Accounting Firm at the beginning of the GenVec s audited financial statements included in this proxy statement/prospectus includes an explanatory paragraph about GenVec s ability to continue as a going concern.

The financial statements of GenVec included herein were prepared on the basis of a going concern, which contemplates that GenVec will be able to realize its assets and discharge liabilities in the normal course of business. GenVec s financial statements do not include any adjustments that might be necessary if GenVec is unable to continue as a going concern. In addition, GenVec s financial situation and the presence of an explanatory paragraph about GenVec s ability to continue as a going concern could make it more difficult to raise the capital necessary to address GenVec s current needs.

Because the market price of Intrexon common stock will fluctuate, you cannot be sure of the market value of the shares of Intrexon common stock you will receive in the merger.

Upon completion of the merger, each share of GenVec common stock that you hold will be converted into the right to receive the per share merger consideration consisting of (i) 0.297 shares of Intrexon common stock plus (ii) one CPR. There will be no adjustment to the per share merger consideration due to changes in the market price of either shares of GenVec common stock or shares of Intrexon common stock and the merger agreement does not provide for any price-based termination right. Accordingly, the market value of the shares of Intrexon common stock that you will be entitled to receive upon completion of the merger will depend on the market value of the shares of Intrexon common stock at the time of the completion of the merger and could vary significantly from the market value on the date of this proxy statement/prospectus or the date of the special meeting. In addition, the market value of the shares of Intrexon common stock that you will be entitled to receive in the merger with respect to the stock consideration also will continue to fluctuate after the completion of the merger and you could lose the value of your investment in Intrexon common stock.

Such variations could be the result of changes in the business or operations of GenVec or Intrexon prior to the merger and Intrexon following the merger, market assessments of the likelihood that the merger will be completed or the timing of the completion of the merger, general market and economic conditions and other

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factors both within and beyond the control of GenVec or Intrexon. Because the merger will be completed after the special meeting, at the time of the meeting you will not know the value of the merger consideration that you will receive upon completion of the merger.

The contingent payment rights may not result in payments to holders.

Under the terms of the merger agreement, each share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger (other than shares with respect to which appraisal rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or GenVec), and each share of GenVec common stock underlying a warrant to purchase shares of GenVec common stock that is converted into a warrant to purchase merger consideration in connection with the merger, will, upon the effective time of the merger or, with respect to a warrant, upon the exercise of such warrant, be converted into the right to receive 0.297 of a share of Intrexon common stock and a CPR that entitles the holder to receive, without interest and subject to applicable withholding tax, a portion of (i) milestone payments received by Intrexon or the surviving corporation for milestones that are achieved or occur, and (ii) royalty payments received by Intrexon or the surviving corporation, in each case, under the NVS License Agreement within 36 months after the closing of the merger. As of the date hereof, the first four development and regulatory milestones under the NVS License Agreement have been met. As of the date hereof, GenVec has not received any royalty payments from Novartis under the NVS License Agreement. GenVec cannot determine whether any milestones will be achieved or occur within the 36-month period after the closing of the merger, and it does not expect that any royalty payments will be made during that period. Accordingly, neither Intrexon nor GenVec can assure you that any milestone or royalty payments will be received by Intrexon or the surviving corporation after the date hereof. If these payment events do not occur, no payments will be made under the contingent payment rights agreement. Accordingly, the CPRs may ultimately have no value and expire without yielding any payments to holders of CPRs. It is difficult to value the CPRs, and the amount of actual payments on the CPRs is highly speculative.

You will not be able to determine the amount of payment (if any) to be received under the contingent payment rights until certain milestone or royalty payments have been made by Novartis.

If any payment is made on the CPRs, it will not be made until certain milestones are achieved or occur or certain royalty payments are earned under the NVS License Agreement and Intrexon or the surviving corporation has received payments for such milestones or royalties. GenVec cannot determine whether any milestones will be achieved or occur within the 36-month period after closing of the merger, and it does not expect that any royalty payments will be made during that period. After receipt of such amounts (if any), the holders of the CPRs would collectively be entitled to receive 50% of the amounts received by Intrexon or the surviving corporation in respect of such milestone or royalty payments. There is no guarantee that any milestones will be achieved or occur or that any milestone or royalty payments will be made under the NVS License Agreement.

The contingent payment rights are not registered and may not be transferred except in certain limited circumstances.

The CPRs that will be issued as part of the merger consideration, or upon exercise of each warrant to purchase shares of GenVec common stock that is converted into a warrant to purchase merger consideration in connection with the merger, will not be registered under the Securities Act and will not be listed on any exchange. Intrexon does not intend to, and is not obligated to, register the CPRs or list them on an exchange. Subject to certain limited exceptions, holders of CPRs will not be able to transfer or sell the CPRs. As a result, GenVec shareholders should anticipate holding the CPRs until such time as they expire. In addition, until such time as any royalty or milestone payments are made under the NVS License Agreement (if any), the CPRs will be difficult to value and may not ultimately result in any additional amounts being payable to the GenVec shareholders.

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The U.S. federal income tax treatment of the merger depends, in part, upon the aggregate amount of the consideration received by the holders of the GenVec common stock and the aggregate amount of such consideration that is paid in cash (rather than shares of Intrexon common stock).

Pursuant to the terms of the merger agreement, Intrexon and GenVec agreed not to take any action that would reasonably be expected to prevent or impede the merger from qualifying as a reorganization within the meaning of Section 368(a) of the Code. However, the qualification of the merger as a reorganization depends on compliance with numerous technical requirements of these provisions of the Code not all of which can be finally determined at this time, most specifically whether holders of GenVec common stock will receive a sufficient amount of Intrexon voting common stock to satisfy the control test set forth in Section 368(a)(2)(E) of the Code.

Under the contingent payment rights agreement, the holders of the GenVec common stock are entitled to receive 50% of the amounts actually received by GenVec under the NVS License Agreement as royalty payments or milestone payments during the 36-month period following the signing of the merger agreement. As of the date hereof, GenVec has not received any royalty payments from Novartis under the NVS License Agreement. In addition, as of the date hereof, GenVec cannot determine whether any milestones under the NVS License Agreement will be achieved or occur within the 36-month period after the closing of the merger. Neither Intrexon nor GenVec can assure you that any milestone or royalty payments will be received by Intrexon or the surviving corporation after the date hereof. Accordingly, at the effective time of the merger, the aggregate amount of consideration to be received by the holders of the GenVec common stock will not be known (and will not be determinable) because the aggregate amount (if any) paid to the holders of the GenVec common stock will not be known until after the expiration of the 36-month period following the signing of the merger agreement.

Moreover, the contingent payment rights agreement provides that the CPRs are to be paid in cash unless any such payment would prevent the transactions contemplated by the merger agreement from being treated as a tax free reorganization, in which case Intrexon would issue shares of its common stock in lieu of payment in cash of such amounts determined to be payable under the contingent payment rights agreement. But, the contingent payments rights agreement also limits the number of Intrexon common shares that may be issued in connection with the reorganization. Once this limit is met, all additional payments under the contingent rights agreement will be made in cash. As a result, the actual amount of consideration to be received by the holders of the GenVec common stock and the amount of such consideration that is paid in cash is not currently known (and will not be known) until following the expiration of the 36-month period.

Tax matters are very complicated, and the tax consequences of the merger to a particular GenVec shareholder will depend in part on such shareholder s circumstances. Accordingly, you are urged to 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.

Due to these uncertainties, the tax treatment of the merger is unclear and uncertain.

Moreover, the U.S. federal income tax treatment of the contingent payment rights is unclear.

The tax treatment of CPRs could impact whether or not the merger will qualify as a reorganization under Section 368(a) of the Code. In that regard, there is no legal authority directly addressing the U.S. federal income tax classification of a CPR or the treatment of payments that may be received pursuant to a CPR. Accordingly, the impact of CPRs on the tax treatment of the merger and the amount, timing and character of any gain, income or loss with respect to the CPRs are uncertain. Due to the legal and factual uncertainties regarding the tax treatment of CPRs, GenVec shareholders are urged to consult their own tax advisers to determine the timing and characterization of

income, gain or loss resulting from receipt of payments (if any) pursuant to the CPRs. See the section entitled Material U.S. federal income tax consequences of the merger.

Tax matters are very complicated, and the tax consequences of the merger to a particular GenVec shareholder will depend in part on such shareholder s circumstances. Accordingly, you are urged to consult your own tax

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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.

If the merger is consummated, Intrexon may not realize the anticipated benefits of the merger.

The success of the GenVec acquisition, if completed, will depend, in part, on Intrexon s ability to realize the anticipated benefits from combining GenVec s business with Intrexon s business, including the ability to expand on GenVec s expertise in adenoviral vectors and the current Good Manufacturing Practices, which we refer to as cGMP, of the U.S. Food and Drug Administration, which we refer to as the FDA, drug product manufacturing to enhance Intrexon s gene transfer capabilities and to expedite the design and production of vectors that complement Intrexon s multigene programming and focus on safety with limited off-target effect. The combined company will require additional resources to accomplish Intrexon s goals for the merger, and Intrexon may not have the resources to accomplish these goals, or may choose to spend those resources on other business opportunities.

Integrating operations will be complex and will require significant efforts and expenditures on the part of both Intrexon and GenVec. Intrexon s management might have its attention diverted while trying to integrate operations and corporate and administrative infrastructures. GenVec will continue to operate independently of Intrexon until the closing of the acquisition, which is expected to take place in the second quarter of 2017. The integration process could result in the loss of key employees, the disruption of each company s ongoing businesses, tax costs or inefficiencies, or inconsistencies in standards, controls, information technology systems, procedures and policies, any of which could adversely affect Intrexon s and GenVec s ability to maintain relationships with customers, employees or other third parties or Intrexon s ability to achieve the anticipated benefits of the GenVec acquisition and could harm Intrexon s financial performance.

If Intrexon is unable to successfully or timely integrate the operations of GenVec s business into Intrexon s business, Intrexon may be unable to realize the anticipated benefits resulting from the proposed acquisition and its business and results of operations could be adversely affected.

The pendency of the merger could adversely affect the business and operations of each of Intrexon and GenVec.

Some customers and collaborators of each of Intrexon and GenVec may delay or defer decisions because of uncertainties or lack of understanding about the merger s potential effect on their businesses, which could negatively impact the revenues, earnings, cash flows and expenses of Intrexon and/or GenVec, regardless of whether the merger is completed. Similarly, current and prospective employees of Intrexon and GenVec may experience uncertainty about their roles with the combined company following the merger, which may materially adversely affect the ability of each of Intrexon and GenVec to attract, retain and motivate key personnel during the pendency of the merger and which may materially adversely divert attention from the daily activities of Intrexon and GenVec s existing employees.

Intrexon will incur significant transaction costs as a result of the merger.

Intrexon expects to incur significant one-time transaction costs related to the merger. These transaction costs include legal and accounting fees and expenses and filing fees, printing expenses and other related charges. Intrexon may also incur additional unanticipated transaction costs in connection with the merger. A portion of the transaction costs related to the merger will be incurred regardless of whether the merger is completed. Additional costs will be incurred in connection with integrating the two companies businesses. Costs in connection with the merger and integration may be higher than expected. These costs could adversely affect Intrexon s financial condition, operating results or prospects of the combined company.

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The merger agreement limits GenVec s ability to pursue alternatives to the merger.

Under the merger agreement, GenVec agreed not to, beginning on the date of the merger agreement, (i) solicit alternative acquisition proposals or (ii) engage or participate in discussions or negotiations with, or provide non-public information to, any person relating to any such alternative acquisition proposal, subject to certain limited exceptions. Intrexon generally has an opportunity to offer to modify the terms of the proposed merger in response to any competing acquisition proposal that may be made before the GenVec board of directors may withdraw or change its recommendation to GenVec s shareholders.

If the merger agreement is terminated in certain circumstances, GenVec would be required to pay Intrexon a termination fee equal to $550,000. See the section entitled The merger agreement Covenants regarding alternative acquisition proposals and The merger agreement Termination fee. In addition, if the merger agreement is terminated under certain circumstances, GenVec would be required to compensate Intrexon for its actual reasonable out-of-pocket costs and expenses up to $400,000, plus an additional expense amount equal to $200,000. See the section entitled The merger agreement Costs and expenses.

These provisions could discourage a third party that might have an interest in acquiring all or a significant part of GenVec from considering or proposing such an acquisition, even if it were prepared to pay consideration with a higher per share cash or market value than that market value proposed to be received or realized in the merger, or could result in a third party proposing to pay a lower price than it might otherwise have proposed to pay because of the added expense of the termination fee (or the expense reimbursement and additional expense amount) that becomes payable to Intrexon in certain circumstances.

If the merger agreement is terminated and GenVec decides to seek another business combination, it may not be able to negotiate a transaction with another party on terms comparable to, or better than, the terms of the merger.

Under the terms of the merger agreement, GenVec is subject to certain restrictions on its business activities.

The merger agreement generally requires GenVec to operate its business in the ordinary course pending consummation of the merger, and restricts GenVec from taking certain specified actions until the merger is completed. These restrictions may prevent GenVec from making desirable expenditures, including capital expenditures, pursuing otherwise attractive business opportunities and making other changes to its business prior to completion of the merger or termination of the merger agreement. See the section entitled The merger agreement Covenants Interim conduct of GenVec s business.

Certain executive officers and directors of GenVec may have interests in the merger that may differ from, or are in addition to, the interests of GenVec shareholders.

Executive officers of GenVec negotiated the terms of the merger agreement and the GenVec board of directors unanimously determined that the merger agreement, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interest of, GenVec and its shareholders, unanimously approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement, and unanimously recommended that the GenVec shareholders vote in favor of the adoption and approval of the merger agreement. In considering these facts and the other information contained in this proxy statement/prospectus, you should be aware that GenVec s executive officers and directors may have interests in the merger that are different from, or in addition to, the interests of GenVec shareholders generally. For a detailed discussion of the special interests that GenVec s directors and executive officers may have in the merger, see the section entitled The Merger Interests of GenVec s directors and executive officers in

the merger.

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The market price of Intrexon common stock after the merger may be affected by factors different from those currently affecting the financial condition, results of operations and business of GenVec.

Upon completion of the merger, holders of GenVec common stock will become holders of Intrexon common stock. Intrexon s business differs from that of GenVec in important respects, and, accordingly, the financial condition and operating results of the combined company and the market price of Intrexon common stock after the completion of the merger may be affected by factors different from those currently affecting the financial condition and operating results of GenVec.

The issuance of Intrexon common stock in connection with the merger could decrease the market price of Intrexon common stock.

At the completion of the merger, Intrexon expects to issue up to approximately 696,281 shares of Intrexon common stock, or approximately 0.58% of the number of shares of Intrexon common stock outstanding as of the record date, to GenVec shareholders in the merger. The issuance of the Intrexon common stock may result in fluctuations in the market price of Intrexon common stock, including a stock price decline.

The foregoing assumes that no shares of Intrexon common stock are issued to holders of CPRs. If shares of Intrexon common stock are issued to holders of CPRs, such additional issuances may result in further fluctuations in the market price of Intrexon common stock.

The shares of Intrexon common stock to be received by GenVec shareholders as a result of the merger will have different rights from the shares of GenVec common stock.

Upon completion of the merger, GenVec shareholders will become Intrexon shareholders and their rights as shareholders will be governed by Intrexon s amended and restated articles of incorporation, Intrexon s amended and restated bylaws, and Virginia law. Certain of the rights associated with GenVec common stock are different from, and may be viewed as more favorable than, the rights associated with Intrexon common stock. See the section entitled Comparison of rights of shareholders of Intrexon and GenVec for a discussion of the different rights associated with Intrexon common stock.

The issuance of additional equity securities by Intrexon in capital raising transactions or strategic transactions after completion of the merger would result in additional dilution to existing shareholders.

To the extent Intrexon raises additional capital by issuing equity securities, including in a debt financing where Intrexon issues convertible notes or notes with warrants, or issues additional equity in a strategic transaction, Intrexon s shareholders may experience substantial dilution. Intrexon may, from time to time, issue common stock in one or more transactions at prices and in a manner it determines. If Intrexon issues common stock, existing shareholders may be materially diluted. In addition, new investors could gain rights superior to existing shareholders, such as liquidation and other preferences.

GenVec shareholders will have a reduced ownership and voting interest in Intrexon as compared with their interest in GenVec and will exercise less influence over management.

GenVec shareholders currently have the right to vote in the election of directors of GenVec and on certain other matters affecting GenVec. Based on the number of GenVec shares of common stock outstanding as of May 8, 2017, Intrexon expects to issue approximately 696,281 shares of its common stock to GenVec shareholders in the merger (assuming no shares of Intrexon common stock are issued to the holders of CPRs). 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 GenVec 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 the record date, it is expected that former GenVec

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shareholders will own approximately 0.58% of the 119,565,470 shares of Intrexon common stock then outstanding. Because of this, GenVec s shareholders will have substantially less influence on the management and policies of Intrexon than they now have with respect to the management and policies of GenVec.

If the proposed merger is not completed, GenVec will have incurred substantial costs that could adversely affect GenVec s financial results and operations and the market price of GenVec common stock.

If the merger is not completed, the on-going business of GenVec may be adversely affected. Without having realized any of the benefits of the merger, GenVec will be subject to a number of risks, including:

- GenVec will be required to pay its costs relating to the proposed merger if the merger is not completed;
- GenVec may be required to pay a termination fee to Intrexon or to reimburse Intrexon for certain transaction-related expenses as described in the sections entitled The merger agreement Termination fee and The merger agreement Costs and expenses ;
- the merger agreement provides for certain restrictions on the operations of GenVec s business prior to the completion of the merger, which may affect GenVec s ability to execute certain of its business strategies; and
- matters relating to the merger will require substantial commitments of time and resources by GenVec s management team, and GenVec s management team will not have devoted as much time and resources to other opportunities that may have been beneficial to GenVec as a stand-alone company.

GenVec may also be subject to litigation related to any failure to complete the merger. If the merger is not completed, these risks may materialize and may adversely affect GenVec s business and financial results and the market price of GenVec common stock.

Lawsuits have been filed, and other lawsuits may be filed, against Intrexon, GenVec and members of GenVec s board of directors challenging the merger, and an adverse ruling in any such lawsuit may delay or prevent the completion of the merger or result in an award of damages against Intrexon or GenVec.

Four putative class actions, referred to herein as the Stockholder Actions, were filed against GenVec and members of GenVec s board of directors, referred to herein as Individual Defendants, in connection with GenVec s proposed merger with Intrexon. The complaints in the Stockholder Actions allege that GenVec and the Individual Defendants violated Section 14(a) of the Securities Exchange Act of 1934, and Rule 14a-9 promulgated thereunder, by failing to disclose in the draft proxy statement included in the Registration Statement on Form S-4 filed by Intrexon on March 17, 2017 in connection with the merger certain information regarding alleged potential conflicts of interest, events leading up to the signing of the merger agreement with Intrexon and Merger Sub, certain financial data regarding GenVec, and certain inputs regarding Roth s fairness opinion. The complaints in the Stockholder Actions also allege the Individual Defendants violated Section 20(a) of the Securities Exchange Act of 1934 as control persons who had the ability to prevent the Registration Statement from being false and misleading. Two of the Stockholder Actions also allege that Intrexon and Merger Sub violated Section 20(a) of the Exchange Act. The actions seek, among other things, an injunction preventing consummation of the merger with Merger Sub, an award of damages, and an award of costs and expenses, including attorneys fees. On April 19, 2017, the plaintiffs in two of the Stockholder Actions

voluntarily dismissed their claims. On April 25, 2017, the plaintiff in one of the Stockholder Actions filed a pre-motion letter, referred to herein as the April 25 Letter, advising the court of his intention to file a motion for preliminary injunctive relief. On May 2, 2017, the parties to the Stockholder Actions entered into a Memorandum of Understanding, referred to herein as the MOU, that calls for, among other things: (1) certain additional disclosures to be included in the proxy statement mailed to GenVec stockholders in connection with the merger; (2) the withdrawal of the April 25 Letter; and (3) dismissal of the remaining Stockholder Actions immediately following the vote by GenVec stockholders on the merger. On May 4, 2017, in accordance with the MOU, the plaintiffs in the remaining Stockholder Actions advised the court of the MOU, filed stipulations seeking to stay

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those actions and withdrew the April 25 Letter. Intrexon, GenVec and the Individual Defendants believe the remaining Stockholder Actions are without merit and, if those actions are not voluntarily dismissed pursuant to the MOU, intend to vigorously defend them.

Additional lawsuits arising out of or relating to the merger agreement or the merger may be filed in the future. The results of complex legal proceedings are difficult to predict and could delay or prevent the completion of the merger. The existence of litigation relating to the merger could impact the likelihood of obtaining stockholder approval of the merger. Moreover, the pending litigation is, and any future additional litigation could be, time consuming and expensive and could divert management s attention away from its regular business.

If the proposed merger is not completed, GenVec s ability to continue as a stand-alone company may be uncertain.

GenVec s ability to continue as a stand-alone company, including its ability to secure necessary funding for its operations, may face uncertainty if the merger is not completed. GenVec s ability to execute on its operating strategy may also be affected by the failure to complete the merger. For example, potential licensees or other collaborators may be reluctant to enter into arrangements with GenVec on terms that are acceptable to it, or at all, because of any concerns regarding GenVec s long-term stability and plans raised by entering into the merger agreement and then failing to complete the merger. Accordingly, GenVec may not be able to successfully execute its operating strategy.

In addition, if the merger is not completed and the GenVec board of directors seeks another merger or business combination, GenVec shareholders cannot be certain that GenVec will be able to find a party willing to offer equivalent or more attractive consideration than the per share merger consideration Intrexon has agreed to provide in the merger.

The integration of GenVec and other acquired businesses may present significant challenges to Intrexon.

Achieving the anticipated benefits of the merger will depend in part upon whether GenVec and Intrexon can integrate their businesses in an efficient and effective manner. The combination of two independent businesses is a complex, costly and time-consuming process. The integration of GenVec and any future businesses that Intrexon may acquire involves a number of risks, including, but not limited to:

- the diversion of management s attention from the management of daily operations to the integration of operations;
- higher integration costs than anticipated;
- failure to achieve anticipated synergies, cost savings, business opportunities and growth prospects from the combination;
- difficulties in assimilating and retaining employees and in attracting key personal;
- difficulties in developing GenVec s AdenoVerse technology platform; and

difficulties in the integration of departments, systems, including accounting systems, technologies, books and records, and procedures, as well as in maintaining uniform standards, controls, including internal control over financial reporting required by the Sarbanes-Oxley Act of 2002, and related procedures and policies.

Many of these factors are outside of the control of Intrexon and GenVec, and will be outside the control of the combined company, and any one of them could result in increased costs, decreased expected revenues and diversion of management time and energy, which could materially impact the business, financial condition and results of operations of the combined company. In addition, even if the operations of the businesses of Intrexon and GenVec are integrated successfully, the full benefits of the merger may not be realized, including, among others, the synergies, cost savings or sales or growth opportunities that are expected. These benefits may not be

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achieved within the anticipated time frame, or at all. Further, additional unanticipated costs may be incurred in the integration of the businesses of Intrexon and GenVec. All of these factors could cause dilution to the earnings per share of the combined company, decrease or delay the expected accretive effect of the merger, and negatively impact the price of the combined company ordinary shares. As a result, it cannot be assured that the combination of Intrexon and GenVec will result in the full realization of the benefits anticipated from the transaction within the anticipated time frames or at all.

Risks related to Intrexon and its business

You should read and consider the risk factors specific to Intrexon s business that will also affect the combined company after the merger. These risks are described in Part I, Item 1A of Intrexon s Annual Report on Form 10-K for the fiscal year ended December 31, 2016, Part II, Item 1A of Intrexon s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2017, and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

Risks related to GenVec and its business

GenVec has a history of losses and anticipates future losses.

GenVec has incurred net losses in each year since its inception in December 1992, including a net loss of $5.8 million for the year ended December 31, 2016. As of March 31, 2017, GenVec had an accumulated deficit of approximately $294.9 million. GenVec is unsure if or when it will become profitable. The size of GenVec s net losses will depend on its revenues and its expenses.

GenVec has derived its revenues primarily from payments from collaborations with corporations and government entities and expects to do so for the foreseeable future. It may be years, if ever, before GenVec recognizes revenue from product candidate sales or royalties. While GenVec has taken efforts to control costs throughout 2016 and into 2017, a large portion of its expenses are fixed, including expenses related to facilities, equipment and personnel, and GenVec s ability to continue to meaningfully reduce costs is limited. In addition, GenVec expects to continue to spend significant amounts to fund research and development to advance its programs and to enhance its core technologies. As a result of its operating expenses, GenVec will need to generate significant additional revenue to achieve profitability. Even if GenVec does achieve profitability, it may not be sustainable.

GenVec is a biopharmaceutical company deploying unproven technologies, and it may never be able to develop, obtain regulatory approval of, or market any of its product candidates.

Gene-based products are new and rapidly evolving medical approaches, which have not been shown to be effective on a widespread basis. Only a limited number of gene-based products have been successfully developed and commercialized to date. In addition, no gene therapy product has received regulatory approval in the U.S. None of GenVec s product candidates has been approved for sale in the U.S. or elsewhere. Gene-based products may be susceptible to various risks, including undesirable and unintended side effects from genes or the delivery systems, unintended immune responses, inadequate therapeutic efficacy, or other characteristics that may prevent or limit their approval or commercial use. Successful products require significant development and investment, including a lengthy and uncertain period of testing to show their safety and effectiveness before their regulatory approval or commercialization. Other than GenVec s limited conditional approval with respect to its foot-and-mouth disease (which we refer to as FMD) vaccine, GenVec has not proven its ability to develop, obtain regulatory approval of, or commercialize gene-based medicines or vaccines.

If GenVec or its collaborators fail to adequately show the safety and efficacy of GenVec s product candidates, GenVec will not be able to obtain FDA approval of its product candidates.

GenVec faces the risk of failure involved in developing therapies based on new technologies and the difficulties generally associated with drug development. CGF166 is the only product candidate that GenVec and its

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collaborators currently have in clinical trials. Novartis initiated dosing in a Phase 1/2 clinical trial of CGF166 in October 2014. On January 8, 2016, GenVec was notified by Novartis that enrollment in the clinical trial had been paused, based on a review of data by the trial s Data Safety Monitoring Board, referred to herein as its DSMB, in accordance with criteria in the trial protocol, and the FDA placed the clinical trial on hold. The FDA lifted the clinical hold on July 25, 2016 and the Phase 1/2 clinical trial of CGF166 is currently ongoing. In February 2017, GenVec was notified that the first patient in the fourth cohort of the trial had been dosed.

Significant additional research and animal testing, referred to as preclinical testing, will need to be conducted before any of GenVec s other product candidates currently under active development can advance to clinical trials. It may take GenVec many years to complete preclinical testing or trials, and GenVec expects that doing so will be dependent on its ability to enter into collaborations. Drug development is an uncertain scientific and medical endeavor, and failure could occur at any stage of development. Acceptable results in early testing or trials might not be repeated later. Not all products in preclinical testing or early stage clinical trials will become approved products, and historically there is a high rate of attrition for product candidates in preclinical and clinical trials due to scientific feasibility, safety, efficacy, changing standards of medical care and other variables. Before an application can be filed with the FDA for product approval, GenVec or its collaborators must show that a particular product candidate is safe and effective. Even with respect to product candidates that advance to clinical trials, GenVec or its collaborators must demonstrate the safety and efficacy of those product candidates before FDA approval can be secured. The failure to adequately show the safety and effectiveness of GenVec s product candidates would prevent FDA approval of its products. Any one of GenVec s product candidates could fail at any time, as clinical development of drug candidates presents numerous unpredictable and significant risks and is very uncertain at all times prior to regulatory approval by the FDA or health authorities in other major markets.

Because regulatory approval must be obtained to market GenVec s products, GenVec cannot predict whether or when its products will be commercialized; failure to comply with applicable regulations can also harm its business and operations.

Biologic products are subject to stringent regulation by a wide range of governmental authorities. GenVec cannot predict whether GenVec or its collaborators will obtain regulatory approval for any of GenVec s products. No one can market a biologic product in the U.S. until it has completed rigorous preclinical testing, clinical trials, and an extensive regulatory approval process implemented by the FDA. To date, the FDA has not approved a gene therapy product for sale in the U.S. Satisfaction of regulatory requirements typically takes many years, is dependent upon the type, complexity, and novelty of the product, and requires the expenditure of substantial resources. Of particular significance are the requirements covering research and development, testing, manufacturing, quality control, labeling, and promotion of drugs for human use.

Before commencing clinical trials, GenVec or its collaborators must submit an investigatory new drug application, which we refer to as an IND, to the FDA and wait for the IND to become effective 30 days following its receipt by the FDA. Even after an IND becomes effective, however, a clinical trial is subject to continuing oversight by an Institutional Review Board, referred to herein as an IRB, and the FDA, and in some cases by a DSMB, or a Data Monitoring Committee, referred to herein as a DMC.

Clinical trials are also subject to:

Good clinical practices regulations, which include a requirement for each subject s informed consent; and

Potential suspension or termination by GenVec conducting the clinical trial, the IRB, or the FDA at any time if, among other reasons, it is believed that the subjects participating in these trials are being exposed to unacceptable health risks or if the FDA finds deficiencies in the IND or the conduct of the trials.

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Delays or rejections in the regulatory approval process may be encountered because of additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials, or FDA regulatory review.

Failure to comply with applicable FDA or other regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, total or partial suspension of production, or injunction, as well as other regulatory action against GenVec s product candidates or GenVec. If regulatory approval of a product is granted, this approval will be limited to those disease indications for which the product has been shown through clinical trials to be safe and effective. Even if approved, a product may not be approved for the indications that are necessary or desirable for successful commercialization, or the FDA may impose restrictions on distribution of the product that may materially impact GenVec s operations. The FDA also strictly regulates promotion and labeling after approval. Outside the U.S., the ability to market a product is also contingent upon receiving clearances from the appropriate regulatory authorities. This non-U.S. regulatory approval process includes risks similar to those associated with FDA clearance described above and is subject to the independent judgments, policies, priorities and decisions of the applicable regulatory authorities, which may differ from those of the FDA.

GenVec or its collaborators may experience delays in conducting GenVec s clinical trials.

Clinical trials may be delayed or prematurely terminated by many factors, including: (i) limited number of, and competition for, suitable patients for the particular clinical trial; (ii) slower than expected rate of patient recruitment and enrollment; (iii) failure of patients to complete the trial; (iv) inability to obtain sufficient quantities of acceptable materials for use in clinical trials; (v) delay or failure in reaching agreement on contract terms with prospective study sites or other third-party vendors who are supporting GenVec s clinical trials; (vi) inability to reach agreement with the FDA on a trial design that GenVec is able to execute; (vii) difficulty in adequately following up with patients after treatment; and (viii) changes in laws, regulations, regulatory policy or clinical practices. GenVec s ability or the ability of its collaborators to enroll appropriate patients for any clinical trials for GenVec s product candidates also may be adversely affected by trials being conducted by GenVec s competitors for similar disease indications. The failure of any clinical trials to meet applicable regulatory standards, or the standards of the relevant reviewing bodies could cause such trials to be delayed, suspended or terminated, which could further delay the development of any of GenVec s product candidates. Any such delays increase GenVec s product development costs, with the possibility that GenVec could be required to raise additional funds. Delays in one clinical trial also can adversely affect GenVec s ability and the ability of its collaborators to launch clinical trials for similar or different indications. Consequently, if such delays are significant they could negatively affect GenVec s financial results and the commercial prospects for its products.

Additionally, clinical trials may be suspended or terminated at any time by the FDA, an IRB, a DSMB or DMC, other regulatory authorities, or by GenVec for a variety of reasons, including safety. In January 2016, Novartis paused enrollment in the clinical trial of CGF166, based on a review of data by the trial s DSMB in accordance with criteria in the trial protocol, and the FDA placed the clinical trial on hold. The FDA lifted the clinical hold on July 25, 2016, and the Phase 1/2 clinical trial of CGF166 is currently ongoing. In February 2017, GenVec was notified that the first patient in the fourth cohort of the trial had been dosed. Any failure or significant delay in completing clinical trials for GenVec s product candidates could harm its financial results and commercial prospects for its product candidates.

Any clinical trial may fail to produce results satisfactory to the FDA. Preclinical and clinical data can be interpreted in different ways, and the FDA may not agree with GenVec s interpretations, which could delay, limit or prevent regulatory approval. Negative or inconclusive results or adverse medical events during a clinical trial could cause a trial to be delayed or repeated or a program to be terminated.

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GenVec does not currently have any late stage clinical trials in its therapeutic product or vaccine development programs and, therefore, GenVec does not have any near-term prospects of generating revenues from the commercial sale of its therapeutic or vaccine products.

GenVec does not currently have any therapeutic products or vaccines in late stage clinical programs, and the one product of GenVec s that has received some approval is its FMD vaccine, for which a conditional license was issued that is applicable in certain emergency or similar situations. Accordingly, GenVec does not have any near-term prospects of generating revenues from the commercial sale of its product candidates in its therapeutic product or vaccine programs. In October 2014 Novartis initiated dosing in a Phase 1/2 clinical trial of CGF166. In January 2016, Novartis paused enrollment in the clinical trial, and the FDA placed the clinical trial on hold. The FDA lifted the clinical hold on July 25, 2016. The Phase 1/2 clinical trial of CGF166 is currently ongoing. However, there can be no assurance that CGF166 will successfully complete that trial, much less enter or successfully complete any other clinical trial. There also can be no assurance that any of GenVec s other therapeutic products or its vaccines will enter or successfully complete the clinical trials required for commercialization.

GenVec does not know if its strategy will be successful.

GenVec s operating strategy focuses on working with leading companies and organizations such as Novartis and the U.S. government to leverage GenVec s proprietary gene-delivery technologies to address the prevention and treatment of significant health concerns. This strategy includes working with Novartis to facilitate the development of first-in-class products for the treatment of hearing and balance disorders, developing a sustainable revenue base by licensing rights to GenVec s proprietary vector and cell line technologies to additional companies and organizations, licensing its preclinical vaccine candidates for the prevention of respiratory syncytial virus, which we refer to as RSV, and the treatment of herpes simplex virus 2, which we refer to as HSV-2, infection, and minimizing its cash burn by operating its business in a cost-efficient manner. This operating strategy may not be successful, and is largely dependent on the success of GenVec s collaboration agreement with Novartis, of which there can be no assurance, and GenVec s ability to enter into additional collaborations, which GenVec has only been able to do to a limited extent.

A central aspect of GenVec s business strategy is to enter into collaborations with other companies to develop, obtain regulatory approval of, and commercialize its potential products, and if GenVec is unable to find collaborators or sustain existing relationships, GenVec may not be able to generate revenue and advance its products.

A central aspect of GenVec s business strategy is to enter into collaborations to support the development of its products. GenVec s lead program, in the field of regenerative medicine and licensed to Novartis, is for the development of novel treatments for hearing loss and balance disorders. In addition to this program, GenVec intends to license rights to its proprietary vector and cell line technologies to additional companies and organizations and license its preclinical vaccine candidates for the prevention of RSV and the treatment of HSV-2 infection. There can be no assurance that GenVec will be able to enter into licensing and other collaboration agreements on terms that are acceptable to GenVec, or at all. If GenVec is not able to enter into and sustain license or other collaboration agreements, it would not be able to develop a sustainable revenue base, and it would need to raise additional funds for the development and commercialization of GenVec s product candidates and technologies and develop additional capabilities in testing, manufacturing, marketing and sales, among other areas. If GenVec is not able to enter into successful collaborations or obtain additional funds through other means, it would have to delay, curtail or abandon the development and commercialization of certain product candidates and technologies.

GenVec intends to continue to seek support for its government funded contracts and collaborations for the development of new vaccines, but GenVec s existing agreements are subject to termination and uncertain future

funding and there is no certainty that GenVec will be able to enter into new agreements.

In addition to corporate collaborations, GenVec has historically entered into agreements with U.S. government agencies, such as the National Institute of Allergy and Infectious Diseases of the National Institutes of Health,

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the U.S. Department of Homeland Security, the U.S. Department of Agriculture, herein referred to as USDA, and the U.S. Naval Medical Research Center to support GenVec s vaccine research. These and similar agreements have historically accounted for a substantial portion of GenVec s revenues, and GenVec intends to continue entering into these agreements in the future. GenVec s business strategy is partially dependent on collaboration agreements with U.S. government agencies and on the ability of these government agencies to perform under these agreements, which performance depends on adequate continued funding of the agencies and their programs.

GenVec has no control over the resources and funding government agencies may devote to any collaboration agreements with GenVec, which may be subject to annual renewal and which generally may be terminated by the government agencies at any time. Any significant reductions in the funding of U.S. government agencies or in the funding areas targeted by GenVec s business could materially and adversely affect its business, results of operations, and financial condition. If GenVec was to fail to satisfy its contractual obligations to deliver in the manner required by a collaboration agreement with a U.S. government agency, the applicable Federal Acquisition Regulations allow the agency to cancel the agreement in whole or in part, and GenVec may be required to perform corrective actions, including but not limited to delivering to the government any uncompleted or partially completed work. The performance of these corrective actions could have a material adverse impact on GenVec s financial results in the period or periods affected. Government agencies may fail to perform their responsibilities under these agreements, which could materially impact GenVec s financial results.

In addition, GenVec s contract-related costs and fees, including allocated indirect costs, are subject to audits and adjustments by negotiation between GenVec and the U.S. government. As part of the audit process, the government audit agency verifies that all charges made by a contractor against a contract are legitimate and appropriate. Audits may result in recalculation of contract revenues and non-reimbursement of some contract costs and fees. Any audits of GenVec s contract-related costs and fees could result in material adjustments to its revenues. In addition, U.S. government contracts are conditioned upon the continuing availability of Congressional appropriations. Congress usually appropriates funds on a fiscal year basis even though contract performance may take several years. Consequently, at the outset of a major program, the contract is usually incrementally funded and additional funds are normally committed to the contract by the procuring agency as appropriations are made by Congress for future fiscal years. Any failure of such agencies to continue to fund such contracts could have a material adverse effect on GenVec s business, results of operations, and financial condition.

GenVec applies for and has received funding from government agencies under Small Business Technology Transfer and Small Business Innovation Research grants. Eligibility of public companies to receive such grants is based on size and ownership criteria that are under review by the Small Business Administration. As a result, its eligibility may change in the future and additional funding from this source may not be available.

GenVec depends, and anticipates depending further, on corporate collaborators for the development of GenVec s product candidates.

When GenVec signs a collaboration agreement, license agreement or similar agreement with a collaborator to develop a product candidate, it will generally expect the collaborator to further the development of the product candidate, which could include the design and conduct of clinical trials, the preparation and filing of documents necessary to obtain regulatory approval, and the manufacturing, sale, marketing and other commercialization of the product if it obtains regulatory approval. GenVec may also grant the collaborator certain rights. For example, under the terms of the NVS License Agreement, GenVec granted Novartis certain exclusive, worldwide rights in specified intellectual property related to GenVec s atonal gene program and atonal adenovectors, as well as non-exclusive, world-wide rights to certain other intellectual property related to GenVec s hearing loss and balance disorders program and its adenovector platform related to the atonal gene. Novartis has the right to

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develop and commercialize any products related to the licensed intellectual property. GenVec s dependence on a corporate collaborator, such as Novartis, subjects GenVec to a number of risks, including that:

- GenVec may not be able to control the amount and timing of resources that the collaborator devotes to the development or commercialization of product candidates or to their marketing and distribution;
- the collaborator may not be successful in its efforts to obtain regulatory approvals in a timely manner, or at all;
- the collaborator may not properly maintain or defend GenVec s intellectual property rights or may use its proprietary information in such a way as to invite litigation that could jeopardize or invalidate its proprietary information or expose GenVec to potential litigation;
- the collaborator may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- changes in the collaborator s business strategy may also adversely affect its willingness or ability to complete its obligations under any arrangement;
- GenVec s agreement with the collaborator may fail to provide GenVec with significant protection, or may not be effectively enforced, if a collaborator fails to perform;
- the collaboration may be terminated or allowed to expire, which would delay the development and may increase the cost of developing GenVec s product candidates;
- the collaborator could have the ability to unilaterally terminate agreements, or have extension or renewal rights, in instances that GenVec believes are not commercially reasonable or consistent with GenVec s current business strategy; or
- the collaborator may not be able to pay GenVec as expected.

Given these risks, the success of GenVec s current and future collaborations is highly unpredictable and can have a substantial negative or positive impact on its business. If GenVec s collaborations fail, its product development or commercialization of product candidates could be delayed or cancelled, which would negatively impact GenVec s business, results of operations and financial condition.

Collaborations might produce conflicts that could delay or prevent the development or commercialization of GenVec s potential product candidates and negatively impact its business and financial condition.

An important part of GenVec s strategy involves conducting multiple product development programs. GenVec may pursue opportunities in fields that conflict with those of its collaborators. In addition, disagreements with GenVec s collaborators could develop over rights to its intellectual property or rights to technology developed with its collaborators. The resolution of such conflicts and disagreements may affect ownership of intellectual property to which GenVec believes GenVec is entitled. In addition, any disagreement or conflict with GenVec s collaborators could reduce GenVec s ability to obtain future collaboration agreements and negatively impact GenVec s relationship with existing collaborators. Such a conflict or disagreement could also lead to delays or termination of collaborative research, development, regulatory approval, or commercialization of various products or could require or result in litigation or arbitration, which would be time consuming, expensive, lead to a diversion of management attention and resources and could have a significant negative impact on GenVec s business, financial condition, and results of operations.

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GenVec s collaboration agreements may prohibit GenVec from conducting research in areas that may compete with GenVec s collaboration products, while its collaborators may not be limited to the same extent. This could negatively affect GenVec s ability to develop products and, ultimately, prevent GenVec from achieving a continuing source of revenues.

GenVec anticipates some of its corporate or academic collaborators will be conducting multiple product development efforts within each disease area that is the subject of their collaborations with GenVec. In certain circumstances GenVec has agreed not to conduct independently, or with any third party, certain research and development activities that are competitive with the research and development activities conducted under GenVec s collaborations. Therefore, GenVec s collaborations may limit the areas of research and development GenVec may pursue alone or with others. Some of GenVec s collaborators, however, may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of their collaborations with GenVec. In addition, competing products, either developed by the collaborators or to which the collaborators have rights, may result in their withdrawing support for GenVec s product candidates.

Agreements with government agencies may lead to claims against GenVec under the Federal False Claims Act, and these claims could result in substantial fines and other penalties.

The biopharmaceutical industry is, and in recent years has been, under heightened scrutiny as the subject of government investigations and enforcement actions. GenVec s agreements with U.S. government agencies or any arrangement that implicates the payment of government funds may be subject to substantial financial penalties under the Federal Civil Monetary Penalties Act and the federal False Claims Act. Under the False Claims Act s whistleblower provisions, private enforcement of fraud claims against businesses on behalf of the U.S. government has increased due in part to amendments to the False Claims Act that encourage private individuals to sue on behalf of the government. These whistleblower suits, known as qui tam actions, may be filed by private individuals, including present and former employees. The federal False Claims Act provides for treble damages and civil penalties of up to $11,000 per false claim. If GenVec s operations are found to be in violation of any of these laws, or any other governmental regulations that apply to GenVec, GenVec may be subject to penalties, damages, fines, exclusion from federal healthcare programs like Medicare and Medicaid, and the curtailment or restructuring of GenVec s operations. Any penalties, damages, fines, exclusions, curtailment or restructuring of GenVec s operations could adversely affect its ability to operate its business and its financial results.

If successful large-scale manufacturing of gene-based medicines is not possible, GenVec or its collaborators may be unable to manufacture enough of GenVec s product candidates to achieve regulatory approval or market its products.

Few companies to date have demonstrated successful large-scale manufacturing of gene-based medicines, including those that have had significantly more resources than GenVec does and it is anticipated that significant challenges will be faced in the scale-up of GenVec s manufacturing process for commercial production. There are a limited number of contract manufacturers qualified to perform large-scale manufacturing of gene-based medicines. GenVec or its collaborators may be unable to manufacture commercial-scale quantities of gene-base medicines or receive appropriate government approvals on a timely basis or at all. Failure to successfully manufacture or obtain appropriate government approvals on a timely basis or at all would prevent GenVec from achieving its business objectives.

If regulatory approvals are not obtained for a manufacturing facility for GenVec s products, GenVec may experience delays, be unable to meet demand, and may lose potential revenues.

Completion of clinical trials for and commercialization of GenVec s product candidates require access to, or development of, facilities to manufacture a sufficient supply of its product candidates. GenVec has limited experience manufacturing any of its gene-based products in the volumes that will be necessary to support large-

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scale clinical trials or commercial sales, and GenVec expects that it will rely on its collaborators for manufacturing capabilities. Before GenVec or its collaborators can begin commercial manufacturing of any of its product candidates, GenVec or its collaborators must obtain regulatory approval of the manufacturing facility and process. Manufacturing of GenVec s proposed products must comply with cGMP requirements and similar non-U.S. regulatory requirements. The cGMP requirements govern, among other things, personnel, buildings and facilities, equipment, control of components and drug product containers and closures, production and process controls, packaging and labeling controls, holding and distribution, laboratory controls and records and reports. Among other things, complying with cGMP and comparable non-U.S. regulatory requirements will require GenVec to expend time, money and effort in production, record keeping, and quality control to ensure the product meets applicable specifications and other requirements. GenVec or its collaborators must also pass a preapproval inspection before FDA approval. Significant capital will likely need to be expended on the development of manufacturing capacity for a product candidate even before GenVec knows if the FDA will approve the product for commercialization. Furthermore, if GenVec or its collaborators materially fail to comply with these requirements, its product candidates likely would not be approved. If GenVec or its collaborators fail to comply with these requirements after approval, GenVec would be subject to possible regulatory action (including warning letters, restrictions on the product, product recalls, suspension or withdrawal of approval, seizures, injunctions, civil fines, and criminal sanctions), and GenVec may be limited in the jurisdictions in which GenVec is permitted to sell its products. The FDA and non-U.S. regulatory authorities generally have the authority to perform unannounced periodic inspections of manufacturing facilities to ensure compliance with cGMP and non-U.S. regulatory requirements.

GenVec relies on a limited number of suppliers for some of its manufacturing materials. Any problems experienced by any of these suppliers could negatively impact GenVec s operations.

GenVec relies on third-party suppliers and vendors for some of the materials used in the manufacture of GenVec s product candidates. Some of these materials are available from only one supplier or vendor. For supply of early clinical trial materials, GenVec relies on one supplier, Thermo Fisher Scientific Corporation, for its cell culture medium and another supplier, Lonza Walkersville, Inc., for custom buffers. The cell culture medium is used to grow the cells within which GenVec s product candidates are produced. GenVec does not currently have supply agreements with any of its suppliers. Any significant problem experienced by one of GenVec s suppliers could result in a delay or interruption in the supply of materials to GenVec until such supplier resolves the problem or an alternative source of supply is located. GenVec has limited experience with alternative sources of raw materials. Any delay or interruption would likely lead to a delay or interruption of manufacturing operations, which could negatively affect GenVec s operations.

GenVec faces substantial competition from other companies and research institutions that are developing products to treat the same diseases that GenVec s product candidates target, and GenVec may not be able to compete successfully.

GenVec competes with pharmaceutical and biotechnology companies pursuing other forms of treatment for the health concerns GenVec s product candidates target. GenVec may also face competition from companies that may develop competing technology internally or acquire it from the government, universities or other research institutions. As these companies develop their technologies, they may develop proprietary positions, which may prevent or limit GenVec s product commercialization efforts.

Some of GenVec s competitors are established companies with greater financial and other resources than GenVec s. GenVec s competitors may succeed in:

Identifying important genes or delivery mechanisms before GenVec does;

Developing products or product candidates earlier than GenVec does;

Forming collaborations before GenVec does or precluding GenVec from forming collaborations with others;

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Obtaining approvals from the FDA or other regulatory agencies for such products more rapidly than GenVec does;

Developing and validating manufacturing processes more rapidly than GenVec does;

Obtaining patent protection to other intellectual property rights that would limit or preclude GenVec s ability to use its technologies or develop products; or

Developing products that are safer or more effective than those GenVec develops or proposes to develop.

While GenVec seeks to expand its technological capabilities to remain competitive, research and development by others may render its technology or product candidates obsolete or noncompetitive or result in treatments or cures superior to any therapy developed by GenVec.

In addition, GenVec s products, if approved, may subsequently face competition from biosimilar products that are approved via an abbreviated process on the basis of a showing that the product is highly similar to its approved product. The Biologics Price Competition and Innovation Act provides periods of exclusivity during which abbreviated applications may not be submitted to, or approved by, the FDA, but the statute then allows approval by an abbreviated pathway and, if certain standards are met, a finding by the FDA that the biosimilar product is interchangeable with the reference product. A similar abbreviated approval process for biosimilars (but without the possibility of an interchangeability determination) is available in Europe. If competitors are able to obtain marketing approval for biosimilars under an abbreviated regulatory approval process in the U.S. or Europe, GenVec s products may become subject to additional competition with the attendant pricing pressure. GenVec also could face or be forced to bring litigation with respect to the validity or scope of patents relating to GenVec s products.

If GenVec is unable to adequately protect its intellectual property rights, its competitors may be able to take advantage of its research and development efforts to compete with GenVec.

GenVec s commercial success will depend, in part, on obtaining patent protection for GenVec s products and other technologies and successfully defending these patents against third party challenges. GenVec s patent position, like that of other biotechnology firms, is highly uncertain and involves complex legal and factual questions. The laws, rules, and regulations affecting biotechnology patent protection in the U.S. and other countries are uncertain and are currently undergoing review and revision. Changes in, or different interpretations of, patent laws in the U.S. and other countries might allow others to use GenVec s discoveries or to develop and commercialize its products without any compensation to GenVec.

GenVec s ability to develop and protect a proprietary position based on biotechnological innovations and technologies involving genes and gene delivery systems, methods of use, production, formulations, and the like is particularly uncertain. The U.S. Patent and Trademark Office, as well as patent offices in other countries, have often required that patent applications concerning biotechnology-related inventions be limited or narrowed substantially. GenVec s disclosures in its patent applications may not be sufficient to meet the statutory requirements for patentability in all cases. In addition, other companies or institutions possess issued patents and have filed and will file patent applications that cover or attempt to cover genes, vectors, cell lines, and methods of making and using gene therapy products that are the same as or similar to the subject matter of GenVec s patent applications. For example, although GenVec has pending patent applications pertaining to particular adenovectors that cannot reproduce themselves and adenovectors modified to alter cell binding characteristics, GenVec is aware of issued patents and pending patent

applications of other companies and institutions relating to the same subject matter. Patents and patent applications of third parties may have priority over GenVec s issued patents and its pending or yet to be filed patent applications. Proceedings before the U.S. Patent and Trademark Office and other patent offices to determine who properly lays claim to inventions are costly and time consuming, and GenVec may not win in any such proceedings.

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The issued patents GenVec already has or may obtain in the future may not provide commercially meaningful protection against competitors. Other companies or institutions may challenge GenVec s or its collaborators patents in the U.S. and in other countries. In the event a company, institution or researcher infringes upon GenVec s or its collaborators patent rights, enforcing these rights may be difficult, expensive and time consuming, with no guarantee that GenVec s or its collaborators patent rights will be upheld. Others may be able to design around these patents or develop unique products providing effects similar to GenVec s products. In addition, GenVec s competitors may legally challenge GenVec s patents, and they may be considered invalid. For example, GenVec is also aware of issued patents and pending patent applications of third parties relating to aspects of production, purification, quality assessment, and formulation technology. It could be alleged that GenVec s production, purification, quality assessment, and formulation technology conflict with such existing or future patents.

Various components used in developing gene therapy products, such as particular genes, vectors, promoters, cell lines, and construction methods, used by others and by GenVec, are available to the public. As a result, GenVec is unable to obtain patent protection with respect to such components, and third parties can freely use such components. Third parties may develop products using such components that compete with GenVec s potential products. Also, with respect to some of GenVec s patentable inventions, GenVec or its collaborators have decided not to pursue patent protection outside the U.S. Accordingly, GenVec s competitors could develop, and receive non-U.S. patent protection for, gene therapies or technologies for which GenVec or its collaborators have or are seeking U.S. patent protection. GenVec s competitors may be free to use these gene therapies or technologies outside the U.S. in the absence of patent protection.

GenVec also relies to a limited extent on trade secrets to protect its technology. However, trade secrets are difficult to protect. While GenVec has entered into confidentiality agreements with employees and collaborators, it may not be able to prevent the disclosure or use of GenVec s trade secrets. In addition, other companies or institutions may independently develop substantially equivalent information and techniques.

If GenVec s technologies and potential products conflict with intellectual property rights of competitors, universities, or others, then GenVec may be prevented from licensing those technologies, developing those product candidates or both.

Other companies and institutions have issued patents and have filed or will file patent applications that may issue into patents that cover or attempt to cover genes, vectors, cell lines, and methods of making and using gene and gene-based therapy products used in or similar to GenVec s product candidates and technologies. GenVec also is aware of other issued patents and pending patent applications that relate to various aspects of GenVec s manufacture of its product candidates and systems, and it could be alleged that GenVec s manufacture of these product candidates or licensure of those technologies conflicts with these patents. GenVec has not conducted freedom-to-use patent searches on all aspects of GenVec s technologies, product candidates or potential product candidates, and GenVec may be unaware of relevant patents and patent applications of third parties. In addition, the freedom-to-use patent searches that have been conducted may not have identified all relevant issued patents or pending patent applications that could issue into patents, particularly in view of the characterizations of the subject matter of issued patents and pending patent applications, as well as the fact that pending patent applications can be maintained in secrecy for a period of time and, in some circumstances, until issuance as patents.

An issued patent gives rise to a rebuttable presumption of validity under U.S. law and under the laws of some other countries. The holder of a patent to which GenVec or its collaborators do not hold a license could bring legal actions against GenVec s collaborators or GenVec for damages or to stop GenVec or its collaborators from using the affected technology, which could limit or preclude its ability to license its technologies or to develop and commercialize its product candidates. If any of GenVec s potential products are found to infringe a patent of a competitor or third party,

GenVec or its collaborators may be required to pay damages and to either obtain a license in order to continue to develop and commercialize the potential products or, at the discretion of the

competitor or third party, to stop development and commercialization of the potential products. Similarly, if any of GenVec s out-licensed technologies are found to infringe a patent of a competitor or third party, GenVec or its collaborators may be required to pay damages and to either obtain a license in order to continue to utilize the technologies or, at the discretion of the competitor or third party, to stop utilizing the technologies. Since GenVec has concentrated its resources on licensing certain of its technologies and developing only a limited number of products, the inability to license one of its technologies or to market one of its products would disproportionately affect GenVec as opposed to a competing company with many products in development.

GenVec believes there will be significant litigation in its industry regarding intellectual property rights. Many of GenVec s competitors have expended and are continuing to expend significant amounts of time, money and management resources on intellectual property litigation. If GenVec becomes involved in litigation, it could consume a substantial portion of GenVec s resources and could adversely affect its business, financial condition and results of operations, even if GenVec ultimately is successful in such litigation.

If GenVec loses its rights to use intellectual property it licenses from others, or those rights are not enforceable, then GenVec s ability to develop and commercialize its product candidates will be harmed.

GenVec relies, in part, on licenses to use some technologies material to its business. For example, to create GenVec s product candidates GenVec combines its adenovectors with genes intended to produce therapeutic proteins. In most instances GenVec does not own the patents or patent applications that cover these genes and certain methods of use thereof which underlie these licenses. For these genes, GenVec does not control the enforcement of the patents. GenVec relies upon its licensors to properly prosecute and file those patent applications and defend and enforce any issued patents.

While many of the licenses under which GenVec has rights provide it with exclusive rights in specified fields, the scope of GenVec s rights under these and other licenses may be subject to dispute by its licensors or third parties. In addition, GenVec s rights to use these technologies and practice the inventions claimed in the licensed patents and patent applications are subject to GenVec s licensors abiding by the terms of those licenses and not terminating them. Any of GenVec s licenses may be terminated by the licensor if GenVec is in breach of a term or condition of the license agreement or in certain other circumstances. In addition, some of GenVec s licenses are contingent upon its achievement of specific development milestones.

Legal proceedings to obtain, enforce, and defend patents, and litigation of third-party claims of intellectual property infringement could require GenVec to spend money and could impair GenVec s operations.

GenVec s success will depend, in part, on GenVec s ability to obtain patent protection for its products and processes, both in the U.S. and in other countries. The patent positions of biotechnology and pharmaceutical companies, however, can be highly uncertain and can involve complex legal and factual questions. Therefore, it is difficult to predict the breadth of claims allowed in the biotechnology and pharmaceutical fields.

Protecting intellectual property rights can be expensive and time consuming. Litigation may be necessary to enforce patents issued to GenVec or to determine the scope and validity of third party proprietary rights. Moreover, if a competitor were to file a patent application claiming technology also invented by GenVec, GenVec would have to participate in an interference proceeding before the U.S. Patent and Trademark Office to determine the priority of invention. GenVec may be drawn into interferences with third parties or may have to provoke interferences by itself to challenge third-party patent rights to allow GenVec or its licensees to commercialize products based on GenVec s technologies. Litigation could result in substantial costs and diversion of management efforts regardless of the results of the litigation. An unfavorable result in litigation could subject GenVec to significant liabilities to third parties,

require disputed rights to be licensed, or require GenVec to cease using some technologies.

GenVec s products and processes may infringe, or be found to infringe, patents not owned or controlled by GenVec. Patents held by others may require GenVec to alter its products or processes, obtain licenses or stop

activities. If relevant claims of third-party patents are upheld as valid and enforceable, GenVec could be prevented from practicing the subject matter claimed in the patent. In addition, GenVec may be required to obtain licenses, redesign its products or processes to avoid infringement or pay money damages. As a result, GenVec s business may suffer if GenVec is not able to obtain licenses at all or on commercially reasonable terms to GenVec or GenVec is required to redesign its products or processes to avoid infringement.

GenVec is exposed to potential product liability claims.

GenVec s business exposes GenVec to potential product liability risks inherent in the clinical testing and manufacturing and marketing of pharmaceutical products, and GenVec may not be able to avoid significant product liability exposure. A product liability claim or recall could be detrimental to GenVec s business. Although GenVec currently maintains product liability and clinical trial insurance, GenVec s present product liability and clinical trial insurance may be inadequate. Any successful product liability claim may prevent GenVec from obtaining adequate product liability and clinical trial insurance in the future on commercially desirable or reasonable terms. In addition, product liability and clinical trial coverage may cease to be available in sufficient amounts or at an acceptable cost. An inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of GenVec s products. A successful product liability claim could have a material adverse effect on GenVec s reputation, business, financial condition and results of operations.

Adverse events in the field of gene therapy may negatively affect regulatory approval or public perception of GenVec s products or product candidates.

Most of GenVec s product candidates under development could be broadly described as recombinant DNA therapies. A number of clinical trials are being conducted by other biotechnology and pharmaceutical companies involving related therapies, including compounds similar to or competitive with, GenVec s product candidates. The announcement of adverse results from these clinical trials, such as serious adverse events or unexpected side effects attributable to the treatment, or any response by the FDA or other similar regulatory authority to such clinical trials, may impede the timing of GenVec s clinical trials, delay or prevent GenVec from obtaining regulatory approval, impede GenVec s ability to secure additional funding, or negatively influence public perception of its product candidates. As a result, these conditions could harm GenVec s business and results of operations.

The commercial success of GenVec s product candidates will depend, in part, on public acceptance of the use of gene therapies for the prevention or treatment of significant health concerns. Public attitudes may be influenced by claims that gene therapy is unsafe, and gene therapy may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy could result in greater government regulation and stricter clinical trial oversight and commercial product labeling requirements of gene therapy products and could cause a decrease in the demand for any products GenVec may develop.

GenVec s product candidates involve new technologies and therapeutic approaches in the field of gene therapy, which is a new and evolving field. As discussed above, no gene therapy product has received regulatory approval in the U.S., and adverse events in this field may negatively affect public perception of GenVec s product candidates. Even if GenVec s product candidates attain regulatory approval, its success will depend upon the medical community, patients, and third-party payers accepting gene therapy products in general, and its product candidates in particular, as medically useful, cost-effective, and safe. In particular, GenVec s success will depend upon whether physicians who specialize in the diseases GenVec s product candidates target decide to prescribe treatments that involve the use of GenVec s product candidates in lieu of, or in addition to, existing treatments they are already familiar with and for which greater clinical data may be available. Even if the clinical safety and efficacy of GenVec s product candidates is

established, physicians may elect not to recommend its products for a variety of reasons, including the reimbursement policies of government and third-party payers. Furthermore, third-party payers, such as health insurance plans, may be reluctant to authorize and pay for new forms of treatment they may deem expensive and less proven than existing treatments. Even if gene therapy products, and

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GenVec s product candidates in particular, are accepted by the medical community and third-party payers, the public in general, or patients in particular, may be uncomfortable with new therapies, including GenVec s product candidates, and it could take substantial time for them to accept gene therapy products as a viable treatment alternative, if ever. If gene therapy and GenVec s product candidates do not gain widespread acceptance, GenVec may be unable to generate significant revenues, if any, which would adversely affect its results of operations. In addition, even if GenVec s product candidates achieve market acceptance, GenVec may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than GenVec s product candidates or that render them obsolete.

GenVec uses hazardous biological materials in GenVec s business; any liability or disputes relating to improper handling, storage or disposal of these materials could be time consuming and costly.

GenVec s research and development processes involve the use of hazardous biological materials. Such materials include human and animal cell lines and viruses, such as adenoviruses and animals infected with human viruses. Some of the biological material may be novel, including viruses with novel properties. GenVec cannot eliminate the risk of accidental contamination or discharge or injury from these materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. GenVec could be subject to civil damages in the event of an improper or unauthorized release of, or exposure of individuals to, these hazardous materials. In addition, claimants may sue GenVec for injury or contamination that results from GenVec s use or the use by third parties of these materials, and GenVec s liability may exceed its total assets.

Although GenVec has general liability insurance, these policies contain exclusions from insurance against claims arising from pollution from chemical or radioactive materials. GenVec s collaborators are working with these types of hazardous materials in connection with its collaborations. In the event of a lawsuit or investigation, GenVec could be held responsible for any injury it or its collaborators cause to persons or property by exposure to, or release of, any hazardous materials. Although GenVec believes it is currently in compliance with all applicable environmental and occupational health and safety regulations, compliance with environmental laws and regulations may be expensive and current or future environmental regulations may impair its research, development, or production efforts.

GenVec s revenue is primarily derived from GenVec s collaboration agreements, which can result in significant fluctuation in GenVec s revenue from period to period, and GenVec s past revenue is therefore not necessarily indicative of GenVec s future revenue.

GenVec s revenue is primarily derived from GenVec s collaboration agreements with corporate partners, institutions, and governmental entities under which GenVec may receive grants, milestone payments based on clinical progress, regulatory progress or net sales achievements, royalties, manufacturing revenue or payment for GenVec s development activities on behalf of third parties. GenVec is particularly dependent on its agreement with Novartis, pursuant to which GenVec is facilitating the development of first-in-class products for the treatment of hearing and balance disorders. On February 11, 2014, Novartis informed GenVec that the third milestone under GenVec s agreement with Novartis had been achieved after Novartis filed an IND with the FDA for the clinical development of CGF166, the lead product candidate under the collaboration between GenVec and Novartis. The IND was deemed effective on February 7, 2014, triggering a $2 million milestone payment to GenVec. On October 28, 2014, the fourth milestone under GenVec s agreement with Novartis was achieved after the first patient was dosed in the Phase 1/2 clinical trial of CGF166, triggering a $3 million milestone payment to GenVec. Significant variations in the timing of receipt of cash payments and GenVec s recognition of revenue can result from the timing of clinical, regulatory or sales events which result in milestone payments and the timing and success of the commercial launch of new products by GenVec s collaboration partners. The amount of GenVec s revenue derived from collaboration agreements in any given period will depend on a number of unpredictable factors, including GenVec s ability to find and maintain suitable

collaboration partners, the timing of the negotiation and conclusion of collaboration agreements with such partners, whether and when GenVec or its collaboration partner achieve clinical, regulatory and sales milestones, whether the collaboration is exclusive

or whether GenVec can seek other partners, the timing of regulatory approvals in one or more major markets and the market introduction of new products or generic versions of the approved product, as well as other factors.

GenVec depends on a limited number of collaborators for a significant portion of its revenues, and the loss of or significant reduction in business with those business partners could materially adversely affect GenVec s business and operating results.

Novartis and the U.S. government accounted for approximately 80% and 83% of GenVec s revenues for the years ended December 31, 2016 and 2015, respectively. While the concentration of GenVec s business with a small number of collaborators may provide certain benefits to us, it also exposes GenVec to adverse effects in the event of a disruption in GenVec s relationship with any of them. GenVec is particularly dependent on its agreement with Novartis. If Novartis or the U.S. government decreases business with GenVec, fails to fulfill its obligations to GenVec, or terminates its relationship with GenVec, GenVec could experience material adverse effects on its business, operating results and financial condition.

Changes in healthcare law and implementing regulations, including those based on recently enacted legislation, as well as changes in healthcare policy, may impact GenVec s business in ways that GenVec cannot currently predict, and these changes could have a material adverse effect on GenVec s business and financial condition if GenVec is able to commercialize its candidate products.

Healthcare costs have risen significantly over the past decade. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, which we refer to collectively as PPACA, substantially changes the way health care is financed by both governmental and private insurers and significantly impacts the pharmaceutical industry. PPACA contains a number of provisions that are expected to impact GenVec s business and operations, in some cases in ways GenVec cannot currently predict. Changes that may affect GenVec s business include those governing enrollment in federal and private healthcare programs, increased rebates and taxes on pharmaceutical products, and revised fraud and abuse and enforcement requirements. These changes will impact existing government healthcare programs and will result in the development of new programs.

GenVec anticipates that if and when it or its collaborators commercialize GenVec s products in the U.S., a significant portion of GenVec s revenue and the revenue from its collaborators from sales of its products will be derived from government payers, including Medicare, Medicaid, and Department of Defense, referred to herein as DoD, programs. Reimbursement rates to purchasers of GenVec s drugs and its net revenues for sales of drugs used by these programs can be altered by legislation or regulation. PPACA and other federal law require rebates on certain drugs utilized under Medicare, Medicaid, and DoD programs and require discounts on certain drugs furnished to Medicare beneficiaries. For example, as part of PPACA s provisions closing a funding gap that currently exists in the Medicare Part D prescription drug program (commonly known as the donut hole), once GenVec or its collaborators participate in the Medicare program, it or its collaborators will be required to provide a 50% discount on branded prescription drugs dispensed to beneficiaries within this donut hole.

PPACA also made changes to the Medicaid drug rebate program, discussed further herein, including changing the definition of AMP, expanding rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well, and increasing the minimum rebate from 15.1% to 23.1% of the AMP for most innovator products and from 11% to 13% for non-innovator products. GenVec expects that the increased minimum rebate of 23.1% will apply to GenVec s products following commercialization, if successful, in the U.S. Furthermore, PPACA requires pharmaceutical manufacturers of branded prescription drugs to pay a branded prescription drug fee to the federal government. Each individual pharmaceutical manufacturer pays a prorated share of the branded prescription drug fee of $4.0 billion in 2017, based on the dollar value of its branded prescription drug

sales to certain federal programs identified in the law.

The effects of reforms under PPACA will be shaped significantly by implementing regulations and by state government decisions. On February 1, 2016, the Centers for Medicare and Medicaid Services, referred to herein

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as CMS, the federal agency that administers the Medicare and Medicaid programs, issued a final regulation to implement the changes to the Medicaid drug rebate program under PPACA. This regulation became effective on April 1, 2016. Many states have not chosen to expand their Medicaid programs by raising the income limit to 133% of the federal poverty level, as is permitted by PPACA. It is unclear whether these states will choose to expand their programs in the future and whether there will be more uninsured patients than anticipated when Congress passed PPACA. For each state that does not choose to expand its Medicaid program as permitted by PPACA, there will be fewer insured patients overall. The reduction in the number of insured patients could impact the sales, business and financial condition following the commercialization, if successful, of GenVec s products in the U.S.

PPACA also expanded the Public Health Service s 340B drug pricing discount program. A pharmaceutical manufacturer must participate in the 340B drug pricing program in order for federal funds to be available to pay for the pharmaceutical manufacturer s drugs under Medicaid and Medicare Part B. Under this program, the participating pharmaceutical manufacturer agrees to charge statutorily-defined covered entities no more than the 340B discounted ceiling price for the pharmaceutical manufacturer s covered outpatient drugs. PPACA obligates the Secretary of the Department of Health and Human Services to create regulations and processes to improve the integrity of the program and to ensure the agreement that manufacturers must sign to participate in the program obligates a manufacturer to offer the ceiling price to covered entities if the manufacturer makes the drug available to any other purchaser at any price and to report to the government the ceiling prices for its drugs. In addition, legislation may be introduced that, if passed, could further expand the 340B drug pricing program to include additional covered entities or could require participating manufacturers to agree to provide 340B discounted pricing on drugs used in the inpatient setting. To the extent that PPACA and subsequent legislation, as discussed above, causes the statutory and regulatory definitions of AMP and the Medicaid rebate amount to change, these changes also impact the 340B discounted ceiling price.

Legislative changes to PPACA and new or revised regulations remain possible and appear likely in the 115th Congress and under the Trump Administration. These changes could affect all of the PPACA-related policies discussed above and could have a significant effect on the number of insured patients in the U.S., the breadth of coverage under insurance plans, financing of healthcare, and reimbursement rates, which could impact GenVec s sales, business, and financial condition following the commercialization, if successful, of GenVec s products in the U.S. GenVec expects that PPACA, as currently enacted or as it may be amended in the future, and other healthcare reform measures that may be adopted in the future, could have a material adverse effect on GenVec s industry generally and on its ability to successfully commercialize its product candidates, if approved.

In addition to PPACA, there will continue to be proposals by legislators at both the federal and state levels, regulators and third-party payers to keep these costs down while expanding individual healthcare benefits. Certain of these changes could impose limitations on the prices GenVec will be able to charge for any product candidates that are approved or the amounts of reimbursement available for these products from governmental agencies or third-party payers, or may increase the tax obligations on life sciences companies such as GenVec s.

The healthcare industry, and thus GenVec s business, continues to be subject to extensive federal, state, local and foreign regulation. Some of the pertinent laws have not been definitively interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. In addition, these laws and their interpretations are subject to change. Applicable federal and state health care fraud and abuse laws and regulations may affect GenVec s ability to operate GenVec s business, particularly once third-party reimbursement becomes available for one or more of GenVec s products. These laws and regulations include, but are not limited to:

The federal Anti-Kickback Law, which prohibits, among other things, knowingly or willingly offering, paying, soliciting or receiving remuneration, directly or indirectly, in cash or in kind, to induce or reward the purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any health care items or service for which payment may be made, in whole or in part, by federal

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healthcare programs such as Medicare and Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical companies on one hand and prescribers, purchasers and formulary managers on the other. Further, PPACA clarified that liability may be established under the federal Anti-Kickback Law without proving actual knowledge of the statute or specific intent to violate it. In addition, PPACA amended the Social Security Act to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Law constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Although there are a number of statutory exemptions and regulatory safe harbors to the federal Anti-Kickback Law protecting certain common business arrangements and activities from prosecution or regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration to those who prescribe, purchase, or recommend pharmaceutical and biological products, including certain discounts, or engaging such individuals as speakers or consultants, may be subject to scrutiny if they do not fit squarely within an exemption or safe harbor. GenVec s practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, there are no safe harbors for many common practices, such as educational and research grants or patient assistance programs.

The federal civil False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds or knowingly making, using or causing to be made or used, a false record or statement material to an obligation to pay money to the government or knowingly concealing or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. Many healthcare companies have been investigated and have reached substantial financial settlements with the federal government under the civil False Claims Act for a variety of alleged improper activities including causing false claims to be submitted as a result of the marketing of their products for unapproved and thus non-reimbursable uses, inflating prices reported to private price publication services which are used to set drug payment rates under government healthcare programs and other interactions with customers including those that may have affected their billing or coding practices and submission to the federal government. In addition, PPACA amended federal law to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Law constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Pharmaceutical and other healthcare companies also are subject to other federal false claim laws, including, among others, federal criminal healthcare fraud and false statement statutes that extend to non-government health benefit programs.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended by the Health Information Technology for Economic and Clinical Health Act, among other things, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements in connection with the delivery of or payment for healthcare benefits, items or services, and also imposes obligations with respect to safeguarding the privacy, security and transmission of individually identifiable health information. HIPAA also prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services.

Numerous federal and state laws and regulations that address privacy and data security, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws (e.g., Section 5 of the FTC Act), govern the collection, use, disclosure and protection of health-related and other personal information. Failure to comply with data protection laws and regulations could result in government enforcement actions and create liability for GenVec (which could include civil and/or criminal penalties), private litigation and/or adverse publicity that could negatively affect GenVec s operating results and business.

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The federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, which requires certain pharmaceutical and biological manufacturers to engage in extensive tracking of payments or transfers of value to physicians and teaching hospitals and public reporting of the payment data. Pharmaceutical and biological manufacturers with products for which payment is available under Medicare, Medicaid or the State Children s Health Insurance Program are required to have started tracking such payments on August 1, 2013, and must submit a report on or before the 90th day of each calendar year disclosing reportable payments made in the previous calendar year.

Analogous state laws and regulations, such as state anti-kickback and false claims laws, which may apply to items or services reimbursed under Medicaid and other state programs or, in several states, regardless of the payer. Some state laws also require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products and to report gifts and payments to certain health care providers in those states. Some of these states also prohibit certain marketing-related activities including the provision of gifts, meals, or other items to certain health care providers. In addition, California, Connecticut, Nevada, and Massachusetts require pharmaceutical companies to implement compliance programs or marketing codes of conduct.

The federal Foreign Corrupt Practices Act of 1997 and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from providing money or anything of value to officials of foreign governments, foreign political parties, or international organizations with the intent to obtain or retain business or seek a business advantage. Recently, there has been a substantial increase in anti-bribery law enforcement activity by U.S. regulators, with more frequent and aggressive investigations and enforcement proceedings by both the Department of Justice and the SEC. A determination that GenVec s operations or activities are not, or were not, in compliance with United States or foreign laws or regulations could result in the imposition of substantial fines, interruptions of business, loss of supplier, vendor or other third-party relationships, termination of necessary licenses and permits, and other legal or equitable sanctions. Other internal or government investigations or legal or regulatory proceedings, including lawsuits brought by private litigants, may also follow.

If GenVec s operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to GenVec, GenVec may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government-funded healthcare programs like Medicare and Medicaid, and the curtailment or restructuring of GenVec s operations, any of which could adversely affect its ability to operate its business and its financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against GenVec for violation of these laws or regulations, even if GenVec successfully defends against it, could cause GenVec to incur significant legal expenses and divert its management s attention from the operation of its business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws could result in government enforcement actions and create liability for GenVec (which could include civil and/or criminal penalties), private litigation and/or adverse publicity that could negatively affect GenVec s operating results and business.

If third party payers do not provide coverage or reimbursement for GenVec s products, those products will not be widely accepted, which would have a negative impact on GenVec s business, results of operations and financial conditions.

Even if a product of GenVec s receives regulatory approval, GenVec s success will depend, in part, on the extent to which coverage and reimbursement will be available from third party payers such as Medicare, Medicaid, other

government health programs, private health insurers, managed care programs, and other organizations. Third party payers are increasingly challenging the price and cost-effectiveness of medical products and services, and this trend is expected to continue. Therefore, significant uncertainty exists as to the pricing approvals for, and the coverage or reimbursement status of, newly approved healthcare products. Additional federal or state health care legislation may be adopted in the future, any products that GenVec seeks to commercialize may not be

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considered cost-effective, and limitations on coverage and the amount of reimbursement for GenVec s products could be imposed. Adequate third-party insurance coverage may not be available for GenVec to establish and maintain price levels that are sufficient for realization of an appropriate return on GenVec s investment in product development. Moreover, the existence or threat of cost control measures, including a reduction in reimbursement rates could cause potential corporate collaborators to be less willing or able to pursue research and development programs related to GenVec s product candidates. GenVec cannot be certain that, if and when GenVec s products become commercialized, the pertinent reimbursement amounts or formulary status for GenVec s products will be sufficient to enable GenVec to market and sell its products.

GenVec s business involves animal testing and changes in laws, regulations, accepted clinical procedures, or social pressures could restrict GenVec s use of animals in testing and adversely affect its research and development efforts.

Many of the research and development efforts GenVec sponsors involve the use of laboratory animals. Changes in laws, regulations, or accepted clinical procedures may adversely affect these research and development efforts. Social pressures that would restrict the use of animals in testing or actions against GenVec or its partners by groups or individuals opposed to testing using animals could also adversely affect these research and development efforts. In addition, preclinical animal studies conducted by GenVec or third parties on its behalf may be subject to the FDA s Good Laboratory Practices regulations and the USDA regulations for certain animal species. Failure to comply with applicable regulations could extend or delay clinical trials conducted for its drug candidates.

GenVec depends on its key technical and management personnel to advance its technology and implement its business strategy, and the loss of these personnel could impair the development of its products and business.

GenVec relies, and will continue to rely, on its key management and scientific staff, all of whom are employed at will. GenVec s success depends upon the ability of its senior management to implement its business strategy. The loss of key personnel could have a material adverse effect on GenVec s business and results of operations. There is intense competition from other companies, research and academic institutions and other organizations for qualified personnel. GenVec may not be able to continue to attract and retain the qualified personnel necessary for the development of its business. If GenVec does not succeed in retaining and recruiting necessary personnel or developing this expertise, its business could suffer significantly. Furthermore, changes in its senior management may lead to instability for GenVec which could cause its business to suffer significantly.

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Cautionary note regarding forward-looking statements

This proxy statement/prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act with respect to the businesses, strategies and plans of Intrexon and GenVec, their expectations relating to the merger and their future financial condition and performance. Forward-looking statements generally relate to future events or future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as may, will, should, would, expects, plans, anticipates, could, intends, target, projects, contemplates, believes, estimates, pre continue or the negative of these words or other similar terms or expressions that concern Intrexon s and GenVec s expectations, strategies, plans or intentions. Intrexon s and GenVec s expectations and beliefs regarding these matters may not materialize, and actual results in future periods are subject to risks and uncertainties that could cause actual results to differ materially from those projected, including but not limited to:

- the risk that GenVec shareholders may fail to approve the merger proposal;
- the risk that Intrexon and GenVec will be unable to consummate the merger on the terms set forth in the merger agreement for any reason, including under circumstances that could require GenVec to pay a termination fee (or an expense reimbursement and additional expense amount) to Intrexon;
- the possibility that costs, difficulties or disruptions related to the integration of GenVec s operations into Intrexon will be greater than expected;
- the length of time necessary to consummate the proposed transaction may be longer than anticipated;
- the proposed transaction may involve unexpected costs;
- the parties may be unable to meet expectations regarding the timing, completion and accounting and tax treatments of the transaction (including the tax treatment of the CPRs);
- the businesses of Intrexon and GenVec may suffer as a result of uncertainty surrounding the proposed transaction;
- the ability of GenVec to reach the milestones under the NVS License Agreement and trigger the rights to payments under the contingent payment rights agreement;
- the risk that growth opportunities will not be realized or realized to the extent anticipated;

the risk that Intrexon following the merger will not realize on its financing or operating strategies;

the price of, the market for, and the potential market price volatility of Intrexon s common stock;

the risk that litigation in respect of either company or the merger could adversely impact either company;

the risk that disruption caused by the merger could make it difficult to maintain certain strategic relationships;

the sufficiency of Intrexon s cash and cash equivalents to meet its liquidity needs following the merger, whether caused by unanticipated increases in capital expenditures or otherwise;

the effect of the announcement of the merger on Intrexon s and GenVec s business relationships, employees, customers, suppliers, vendors, other partners, operating results and businesses generally;

Intrexon s current and future ECCs, license agreements and other collaborations;

developments concerning Intrexon s collaborators and licensees;

Intrexon s ability to successfully enter new markets or develop additional products, whether with its collaborators or independently;

changes in laws and regulations applicable to GenVec and/or Intrexon;

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competition from existing technologies and products or new technologies and products that may emerge;

actual or anticipated variations in Intrexon s operating results;

actual or anticipated fluctuations in Intrexon s competitors or its collaborators and licensees operating results or changes in their respective growth rates;

Intrexon s cash position;

market conditions in the industry;

Intrexon s ability, and the ability of its collaborators and licensees, to protect their intellectual property and other proprietary rights and technologies;

Intrexon s ability, and the ability of its collaborators and licensees, to adapt to changes in laws or regulations and policies;

the ability of Intrexon s collaborators and licensees to secure any necessary regulatory approvals to commercialize any products developed under the ECCs, license agreements and joint ventures;

the ability of Intrexon s collaborators and licensees to develop and successfully commercialize products enabled by Intrexon s technologies;

the rate and degree of market acceptance of any products developed by a collaborator under an ECC or through a joint venture or license under a license agreement;

Intrexon s ability to retain and recruit key personnel;

the result of litigation proceedings that Intrexon or GenVec faces currently or may face in the future;

Intrexon s estimates regarding expenses, future revenue, capital requirements and needs for additional financing;

diversion of the attention of Intrexon and GenVec management from ongoing business concerns;

limitations placed on the ability of GenVec to operate its business by the merger agreement and the limitations put on GenVec s ability to pursue alternatives to the merger pursuant to the merger agreement;

decisions GenVec makes with respect to its future and strategic direction;

GenVec s product candidates being in the early stages of development;

GenVec s ability to find collaborators and, if it finds collaborators, to mutually agree on terms for its collaborations;

GenVec s reliance on collaborators;

the timing, amount, and availability of revenues from GenVec s government-funded vaccine programs;

uncertainties with, and unexpected results and related analyses relating to, preclinical development and clinical trials of GenVec s product candidates;

the timing and content of future FDA regulatory actions related to GenVec, its product candidates, or its collaborators;

GenVec s financial condition, the sufficiency of its existing cash, cash equivalents, investments, and cash generated from operations, and its ability to lower its operating costs;

the scope and validity of patent protection for GenVec s product candidates and its ability to commercialize technology and products without infringing the patent rights of others;

the listing of GenVec s common stock on NASDAQ; and

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the other factors discussed in the sections entitled Risk factors and in Intrexon s and GenVec s filings with the SEC.

Forward-looking statements may also concern Intrexon s expectations relating to its subsidiaries and other affiliates. Intrexon and GenVec also caution you that the foregoing list may not contain all of the forward-looking statements made in this proxy statement/prospectus.

Due to these risks and uncertainties, there can be no assurances that the results anticipated by the forward-looking statements of Intrexon or GenVec will occur, that their respective judgments or assumptions will prove correct or that unforeseen developments will not occur. Furthermore, if these forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you are cautioned not to place undue reliance upon any forward-looking statements of Intrexon or GenVec, which speak only as of the date made. Intrexon and GenVec undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, changed circumstances or otherwise, except as required by law.

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The GenVec special meeting

This section contains information about the special meeting of GenVec shareholders that has been called to consider and vote on the merger proposal, the merger-related compensation proposal and the adjournment proposal. This proxy statement/prospectus is being furnished to GenVec shareholders in connection with the solicitation of proxies by the GenVec board of directors for use at the special meeting and any postponements or adjournments of such special meeting.

This proxy statement/prospectus and the enclosed proxy card are first being mailed to GenVec shareholders on or about May , 2017. This proxy statement/prospectus provides GenVec shareholders with information about the special meeting and should be read carefully in its entirety.

Date, time and place of the special meeting

The special meeting will be held on June 15, 2017, at 8:30 a.m., Eastern Daylight Time, at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878.

Purpose of the special meeting

At the special meeting you will be asked to consider and vote upon:

Proposal 1.	a proposal to adopt the Agreement and Plan of Merger, dated as of January 24, 2017, among GenVec, Intrexon, and Merger Sub, as it may be amended from time to time, a copy of which is included as Annex A to this proxy statement/prospectus, which proposal we refer to as the merger proposal;
Proposal 2.	a proposal to approve, on a non-binding, advisory basis, compensation that will or may become payable to GenVec s named executive officers in connection with the merger, which proposal we refer to as the merger-related compensation proposal; and
Proposal 3.	a proposal to adjourn the special meeting, if necessary or appropriate, to solicit additional proxies in favor of the merger proposal, which proposal we refer to as the adjournment proposal.

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

Recommendations of the GenVec board of directors

The GenVec 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, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interests of, GenVec and its shareholders;

approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement; and

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

The GenVec board of directors unanimously recommends that GenVec s shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment proposal.

Record date; stock entitled to vote

The GenVec board of directors has fixed the close of business on April 28, 2017 as the record date for the determination of shareholders entitled to notice of, and to vote at, the special meeting and at any adjournment or

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postponement of the special meeting. At the close of business on the record date, there were 2,273,632 shares of GenVec common stock outstanding and entitled to vote held by 17 holders of record. As of the record date, the directors and executive officers of GenVec and their affiliates as a group owned and were entitled to vote 72,437 shares of GenVec common stock, or approximately 3.2% of the shares of GenVec common stock outstanding and entitled to vote as of that date.

A list of shareholders of record of GenVec entitled to vote at the special meeting will be available for ten days prior to the special meeting at GenVec s office at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878, for inspection by shareholders of GenVec during ordinary business hours for any purpose germane to the special meeting.

Quorum

A quorum is necessary to conduct business at the special meeting. The presence, in person or by proxy, of the holders of a majority of the outstanding shares of GenVec common stock entitled to vote is necessary to constitute a quorum for action on any subject matter at the special meeting.

Shareholders of record who are present at the special meeting in person or by proxy and who abstain from voting are considered present and count toward the quorum. If your shares are held in street name, meaning that your shares are held by a broker, bank or other nominee, your broker, bank or other nominee may not vote your shares on non-routine matters without instructions from you. As each of the proposals to be voted upon at the special meeting is considered non-routine, your broker, bank or other nominee does not have discretion to vote on any proposal for which they do not receive instructions from you. As a result, if you fail to provide your broker, bank or other nominee with any instructions regarding how to vote your shares, your shares will not be considered present at the special meeting, will not be counted for purposes of determining the presence of a quorum and will not be voted on any of the proposals. If you provide instructions to your broker, bank or other nominee that indicate how to vote your shares with respect to certain proposals but not with respect to a particular proposal, your shares will be considered present at the special meeting and will be counted for purposes of determining the presence of a quorum, but they will not be voted with respect to that particular proposal (this is referred to as a broker non-vote).

Required vote

Proposal 1.	The merger proposal requires the affirmative vote of the holders of a majority of the outstanding shares of GenVec common stock.
Proposal 2.	The merger-related compensation proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.
Proposal 3.	The adjournment proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or by proxy at the special meeting and entitled to vote on the matter.

Voting rights

Each GenVec shareholder is entitled to one vote on each matter to be acted upon at the special meeting for each share of GenVec common stock owned by such shareholder as of the record date.

Abstentions and broker non-votes

If you are a shareholder of record and vote ABSTAIN on the merger proposal, the merger-related compensation proposal or the adjournment proposal, it will have the same effect as voting AGAINST such

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proposal. Likewise, if your shares are held in street name, meaning that your shares are held by a broker, bank or other nominee, and you instruct your broker, bank or other nominee to vote ABSTAIN on the merger proposal, the merger-related compensation proposal or the adjournment proposal, it will have the same effect as voting AGAINST such proposal.

If you are a shareholder of record and do not vote by completing your proxy card, by telephone or in person at the special meeting (as described below in the section entitled Voting at the special meeting), your shares will not be voted. This will have the same effect as voting AGAINST the merger proposal, but it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal.

If your shares are held in street name and you do not provide your broker, bank or other nominee with instructions as to how to vote your shares on a particular proposal, your shares will not be voted on that proposal (as noted above, this is referred to as a broker non-vote). This will have the same effect as voting AGAINST the merger proposal, but it will have no effect on the outcome of the merger-related compensation proposal or the adjournment proposal.

Voting at the special meeting

Whether or not you plan to attend the special meeting, please promptly vote your shares of GenVec common stock by proxy or, if you hold your shares in street name, instruct your broker, bank or other nominee how to vote, to ensure your shares are represented at the meeting. You may also vote in person at the special meeting.

Voting in person

If you plan to attend the special meeting and wish to vote in person, you will be given a ballot at the special meeting. Please note, however, that if your shares of GenVec common stock are held in street name, meaning that your shares are held by a broker, bank or other nominee, and you wish to vote in person at the special meeting, you must bring to the special meeting (i) a letter, account statement or other evidence from such broker, bank or other nominee indicating that you were the beneficial owner of the shares on the record date for the special meeting and (ii) a legal proxy from the record holder of the shares of GenVec common stock (i.e., your broker, bank or nominee) authorizing you to vote at the special meeting.

Voting by proxy; voting instructions

Shareholders of Record: You should vote your proxy even if you plan to attend the special meeting. You can always change your vote at the special meeting. Registered shareholders may vote by mail or by telephone.

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 at (800) 776-9437 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 Daylight Time, on June 14, 2017.

Your enclosed proxy card includes specific instructions for voting your shares of GenVec common stock. When the accompanying proxy card is returned properly executed, the shares of GenVec common stock represented by it will be voted at the special meeting or any adjournment thereof in accordance with the instructions contained in the proxy

card.

If you return your signed proxy card without indicating how you want your shares of GenVec common stock to be voted with regard to a particular proposal, your shares will be voted as recommended by the GenVec board of

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directors. The GenVec board of directors has unanimously recommended that GenVec s shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment proposal. Proxy cards that are returned without a signature will not be counted as present at the special meeting and cannot be voted.

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.

Shares Held in Street Name: If your shares are held of record in street name, meaning that your shares are held by a broker, bank or other nominee, you should follow the separate instructions that such broker, bank or other 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.

Revocation of proxies or voting instructions

If you are a registered holder and give your proxy card to GenVec or vote by telephone, 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 any time prior to 11:59 p.m., Eastern Daylight Time, on June 14, 2017;
- notifying the Corporate Secretary of GenVec in writing no later than the beginning of the special meeting of your revocation;
- delivering to the Corporate Secretary of GenVec 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.

Notice of revocation or your new proxy must be delivered to GenVec s Corporate Secretary at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878, Attention: Corporate Secretary.

Other matters

As of the date of this proxy statement/prospectus, the GenVec board of directors is not aware of any other business to be presented for consideration at the special meeting.

Solicitation of proxies

The GenVec board of directors is soliciting proxies to provide an opportunity to all GenVec shareholders to vote on agenda items at the special meeting, whether or not the shareholders are able to attend the special meeting or an adjournment or postponement thereof. GenVec will pay all costs incurred in connection with the solicitation of proxies from its shareholders on behalf of its board of directors. In addition to solicitation by mail, the directors, officers and regular employees of GenVec may, without any additional compensation for their services, solicit proxies from shareholders in person or by telephone, facsimile or otherwise.

Arrangements also will be made with brokers, banks, trustees and other custodians, nominees and fiduciaries for the forwarding of solicitation material to the beneficial owners of stock held of record by such persons, and GenVec will reimburse such custodians, nominees and fiduciaries for their reasonable out-of-pocket expenses in connection therewith.

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GenVec has retained Saratoga to assist it in the solicitation of proxies. The fee payable to Saratoga in connection with the proxy solicitation is $12,500 and an additional fee of $4.00 per telephonic contact, plus reimbursement for reasonable out-of-pocket expenses.

Additional questions

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, please contact Saratoga by calling toll-free at (888) 368-0379. Banks, brokerage firms, and other nominees may call collect at (212) 257-1311.

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The companies

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 to enable rational, design-based control of cellular function for a specific purpose. Using its suite of proprietary and complementary technologies, Intrexon designs, builds and regulates gene programs, which are DNA sequences that consist of key genetic components. A single gene program or a complex, multi-genic program is fabricated and stored within a DNA vector. Vectors are segments of DNA used as a vehicle to transmit genetic information. DNA vectors can, in turn, be introduced into cells in order to generate a simple or complex cellular system, which are the basic and complex cellular activities that take place within a cell and the interaction of those systems in the greater cellular environment. It is these genetically modified cell systems that can be used to produce biological effector molecules, or be employed directly to enable the development of new and improved products and manufacturing processes across a variety of end markets, including health, food, energy, environment and consumer. 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, utilize biologically-based applications for the delivery of innovative consumer products and provide for a diverse set of environmental solutions. Intrexon s business model is to commercialize its technologies through 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 is incorporated in Virginia. Intrexon s common stock is traded on the NYSE under the symbol XON. The principal executive offices of Intrexon are located at 20374 Seneca Meadows Parkway, Germantown, Maryland 20876, and its telephone number is (301) 556-9900.

For more information regarding Intrexon s business, see Item 1 of Intrexon s Annual Report on Form 10-K for its 2016 fiscal year and the other documents incorporated by reference into this proxy statement/prospectus. For information on how you can view Intrexon s Annual Report on Form 10-K and other documents incorporated by reference into this proxy statement/prospectus, see the section entitled Where you can find more information.

GenVec, Inc.

GenVec is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. GenVec is a pioneer in the design, testing and manufacture of adenoviral-based product candidates that can deliver on the promise of gene-based medicine. GenVec s lead product candidate, CGF166, is licensed to Novartis and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to its internal and partnered pipeline, GenVec also focuses on opportunities to license its proprietary technology platform, including vectors and production cell lines, to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

GenVec is incorporated in Delaware. GenVec s common stock is traded on NASDAQ under the symbol GNVC. The principal executive offices of GenVec are located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878,

and its telephone number is (240) 632-0740.

For more information regarding GenVec s business, see the section entitled Description of GenVec s business.

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Intrexon GV Holding, Inc.

Merger Sub is a wholly owned subsidiary of Intrexon formed solely for the purpose of effecting the merger. Merger Sub is incorporated in Delaware.

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.

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The merger

(Proposal 1)

Effects of the merger

The shareholders of GenVec are being asked to adopt the Agreement and Plan of Merger, dated as of January 24, 2017, by and among GenVec, Intrexon, and Merger Sub.

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 GenVec. GenVec will continue as the surviving corporation of the merger, but it will become a wholly owned subsidiary of Intrexon. At the effective time of the merger, each share of GenVec common stock (other than shares with respect to which appraisal rights are properly exercised or shares owned by Intrexon, any of its subsidiaries or GenVec) will be converted into the right to receive 0.297 of a share of Intrexon common stock (with cash paid in lieu of fractional shares) and one CPR. For information regarding the treatment of GenVec stock options and warrants in the merger, see the section entitled The merger agreement Treatment of GenVec stock options and warrants.

The merger agreement does not contain any provision that would adjust the exchange ratio that applies to the stock consideration based on fluctuations in the market value of Intrexon s common stock. Because of this, the implied value of the stock consideration to GenVec shareholders will fluctuate between now and the completion of the merger and will depend on the market value of Intrexon common stock at the time the merger is completed. For information regarding the CPRs, see the section entitled Contingent payment rights agreement.

Background of the merger

Introduction

GenVec is a biopharmaceutical company whose business had been developing novel, gene-based therapeutic drugs and vaccines. In March 2010, GenVec discontinued a pivotal Phase 3 clinical trial for TNFerade, its then lead and only clinical stage human therapeutic product candidate. As a result of discontinuing that trial and the early stage nature of GenVec s other programs, GenVec began reevaluating its business strategy. In June 2010, GenVec retained Wells Fargo Securities, LLC to conduct a comprehensive review of strategic alternatives aimed at enhancing shareholder value. As part of that process, GenVec solicited proposals for strategic transactions, including for the disposition of some or all of GenVec s assets, or for the sale or merger of the entire entity. When GenVec did not receive acceptable proposals for strategic transactions by November 2010, the board of directors of GenVec announced that it would continue to explore strategic opportunities while focusing on GenVec s core business.

Despite GenVec s efforts to seek strategic opportunities, between November 2010 and April 2013, it had no programs that offered any near-term prospects for significant revenues or meaningful value-creating achievements. By April 2013, GenVec had begun taking significant steps to reduce its cash burn rate, including by cutting back on development programs, employee headcount and related expenses. Regardless, GenVec continued to lack prospects to achieve significant revenues in the near term and had limited prospects to achieve significant additional revenues before GenVec would use its existing capital resources. Without meaningful prospects, in May 2013 the GenVec board of directors held a meeting for the purpose of considering the liquidation and dissolution of GenVec. At this meeting, the GenVec board of directors unanimously determined that the liquidation and dissolution of GenVec was fair and in the best interests of GenVec and its shareholders.

On August 8, 2013, GenVec filed a preliminary proxy statement pursuant to Section 14(a) of the Exchange Act for the purpose of giving notice of a special meeting of the shareholders to approve the liquidation and dissolution of GenVec. However, on September 4, 2013, GenVec announced that the GenVec board of directors unanimously withdrew the plan of complete liquidation and dissolution for GenVec that was previously adopted

on May 24, 2013, announcing that it would instead pursue a strategy focused on maximizing the value of its technology and assets, including its collaboration with Novartis to develop a novel gene-therapy treatment for hearing loss and balance disorders.

Over the next three years GenVec focused its efforts on assisting Novartis with developing CGF166, an adenoviral vector engineered to express the human atonal gene for patients with severe hearing loss, and engaging third parties, including governmental entities and universities, to research and develop new therapies in collaboration with GenVec using its proprietary adenovirus vector technology. Additionally, GenVec continued to support its operations through equity financings.

In December 2013, GenVec announced approval of the protocol for initiation of a Phase 1 study of CGF166. Between December 2013 and January 2016, GenVec and Novartis continued clinical development of CGF166.

Prior to and during this period, GenVec and Intrexon were in communication at several points regarding various potential collaborations and transactions. For example, prior to the decision to pursue a dissolution in 2013, GenVec and Intrexon had shared information in consideration of a potential strategic transaction. In January 2014, Intrexon and GenVec entered into a material transfer agreement pursuant to which GenVec would incorporate certain transgenes developed by Intrexon into GenVec s proprietary adenovirus based vectors for gene delivery applications for Intrexon s oncology programs. However, subsequent to entering into the material transfer agreement, Intrexon elected not to pursue the research covered under the agreement. During 2014, GenVec was approached by Intrexon regarding the possibility of amending the material transfer agreement to instead focus on animal health applications of GenVec s proprietary gene delivery technology. Following these discussions, the parties were not able to agree to mutually acceptable terms and negotiations ended in December 2014. In August 2015 GenVec was approached by Intrexon regarding a potential exclusive channel collaboration with respect to a product concept being explored by Intrexon not related to GenVec s proprietary technology platform. On August 14, 2015, GenVec and Intrexon entered into a confidentiality agreement to permit the parties to engage in discussions regarding this potential collaboration. Following these discussions, GenVec notified Intrexon that it did not wish to pursue the project and discussions ended in September 2015.

During this period, GenVec continued its business development efforts and, on March 23, 2015, it announced a new collaboration with TheraBiologics, Inc. to develop cancer therapeutics leveraging both GenVec s proprietary gene delivery platform and TheraBiologics proprietary neural stem cell technology. In order to further ongoing business development efforts, in December 2015, GenVec s board of directors approved the establishment of a business development committee to review, evaluate and recommend to GenVec s board of directors business development transactions. Despite its extensive business development and clinical research efforts, GenVec was unable to establish any major pipeline programs outside of its Novartis collaboration that provided GenVec the potential for substantial revenues in the near term. In connection with its business development efforts, GenVec regularly enters into confidentiality and similar agreements to facilitate discussions between parties, however, none of those confidentiality or similar agreements contain any standstill or similar provisions that are still in effect.

On January 8, 2016, Novartis notified GenVec that it was pausing enrollment in the Phase 1/2 trial of CGF166 to conduct a safety review of patient data, based on the recommendation of the trial s data safety monitoring board. Following the public announcement of the clinical hold on January 11, 2016, the price of GenVec s common stock dropped from a closing price of $1.72 on the Nasdaq Capital Market (which price does not take into account the reverse stock split) on January 8, 2016, the day prior to the announcement, to a closing price of $0.72 on the trading day of the announcement. As a result of this price drop, on February 24, 2016 GenVec received notice from NASDAQ that the minimum bid price of its common stock had remained below $1.00 for 30 consecutive business days, and it therefore was not in compliance with the minimum bid price requirement for continued listing.

In May 2016, GenVec announced that it expected that the trial of CGF166 would resume, and GenVec undertook capital raising efforts to address its cash needs. On May 4, 2016, GenVec entered into a Securities Purchase Agreement with certain investors for the sale of approximately 547,196 shares of GenVec s common stock (as

adjusted for the reverse stock split), at a purchase price of $9.1375 per share and the concurrent sale of warrants to purchase approximately 410,397 shares of common stock for aggregate gross proceeds of approximately $5 million.

On July 25, 2016, Novartis notified GenVec that the FDA had lifted the clinical hold on the trial.

In order to regain compliance with the minimum bid price requirement, effective December 1, 2016 GenVec effected a one-for-ten reverse stock split of its outstanding common stock. After the reverse stock split, on December 15, 2016 GenVec received notice from the Listing Qualifications Department of NASDAQ stating that it had regained compliance with the $1.00 minimum bid price requirement for continued listing.

Through the first half of May 2016, GenVec continued with its business development and clinical research efforts, but did not enter into any agreements or identify any opportunities that were likely to result in opportunities in the near term.

Detailed Timeline of Events

On May 18, 2016, Thomas Reed, Ph.D., Founder and Chief Science Officer of Intrexon, contacted Douglas Swirsky, President and Chief Executive Officer of GenVec, asking for a meeting with Mr. Swirsky. The next day, Mr. Swirsky and Dr. Reed met to discuss the possibility of a strategic transaction between GenVec and Intrexon. On the following day, Mr. Swirsky e-mailed Dr. Reed a non-confidential presentation regarding GenVec s AdenoVerse technology platform. Dr. Reed and Mr. Swirsky then corresponded regarding the differences between GenVec s AdenoVerse technology platform and the delivery platform of a third party.

On May 26, 2016, Dr. Reed requested a meeting between the GenVec and Intrexon teams to discuss GenVec s technology, programs and capabilities; in response, Mr. Swirsky provided support for the meeting and confirmed that the confidentiality agreement entered into by the parties in August 2015 remained effective. The meeting was held at Intrexon s offices in Germantown, Maryland on June 3, 2016. Following this meeting, Dr. Reed and Mr. Swirsky exchanged e-mails regarding GenVec s technology, experience and capabilities in human and animal health vaccines.

Dr. Reed and Mr. Swirsky met in Palm Beach, Florida on June 22, 2016, at which time Dr. Reed reiterated Intrexon s interest in a strategic transaction involving GenVec. However, Dr. Reed also explained that Intrexon had certain competing interests and priorities that would delay further discussions between the parties for several weeks.

Despite the delay in further negotiations, on August 14, 2016 GenVec and Intrexon executed an amendment to the confidentiality agreement previously entered into in August 2015 to extend confidentiality obligations thereunder until August 14, 2017.

Between August and November of 2016, consistent with its strategic plan, GenVec continued to engage in discussions with third parties regarding potential business development and capital raising transactions. On September 2, 2016, based on potential business development opportunities with other parties Mr. Swirsky sent Dr. Reed an e-mail stating that a strategic transaction was no longer a preferred outcome for GenVec and inquiring as to Intrexon s interest in a more focused collaboration.

GenVec continued to pursue other business development opportunities. However, GenVec s business development efforts during this time did not eventually result in any near-term developments, and, on November 2, 2016, Mr. Swirsky contacted Dr. Reed via e-mail to follow up on prior discussions. That same day, Dr. Reed and Mr. Swirsky spoke about GenVec s business development efforts that were maturing at a slow pace relative to its capital needs and Mr. Swirsky expressed a willingness to revisit a possible strategic transaction with Intrexon. On this

call Dr. Reed requested that Mr. Swirsky provide an outline of the licensing transactions for the AdenoVerse technology that GenVec was exploring. Mr. Swirsky provided a redacted version of this outline to Dr. Reed on November 6, 2016.

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After these initial discussions with Mr. Swirsky, Dr. Reed introduced Mr. Swirsky via e-mail to Nir Nimrodi, Intrexon s Senior Vice President of Corporate Development. On November 9, 2016, Mr. Swirsky spoke with Mr. Nimrodi to discuss logistics for Intrexon s evaluation of GenVec s technology, programs and capabilities. The following day Mr. Swirsky sent Mr. Nimrodi an overview of GenVec s financial projections to provide information on GenVec s cost structure. For information regarding the treatment of GenVec s financial projections, see the section entitled The merger agreement Certain financial projections of GenVec s management.

Over the following few weeks, Intrexon continued to review GenVec s technology, programs, capabilities and financial outlook and to assess a potential strategic transaction between the two companies. On November 22, 2016, Intrexon delivered to GenVec a letter expressing interest in pursuing a strategic transaction with GenVec and requesting that the two companies negotiate an exclusivity agreement to provide Intrexon with an exclusive period of time to evaluate the opportunity and to conduct due diligence on GenVec.

On November 25, 2016, the GenVec board of directors met by telephone to consider the request for the exclusive negotiating period requested by Intrexon. The GenVec board of directors discussed the scope of the exclusivity requested, the time period during which the exclusive due diligence and negotiating period would apply, and the potential that another transaction would need to be considered within this period. Following these discussions, the GenVec board of directors authorized Mr. Swirsky to enter into the exclusivity agreement, but to negotiate the shortest period that Intrexon would be willing to agree to for the period of the agreement.

On November 29, 2016, GenVec and Intrexon executed an exclusivity agreement, which provided that, between November 29, 2016 and January 23, 2017, GenVec would refrain from (i) soliciting or accepting any offers for the acquisition of 20% or more of its outstanding securities or all of its assets, (ii) disclosing any non-public information to any entity with respect to such offers or (iii) entering into any agreement relating to such offers. Under the terms of this agreement, GenVec was permitted to request Intrexon s confirmation that it was pursuing a transaction in good faith and, if Intrexon did not make such confirmation, GenVec could terminate the exclusivity at any time after December 26, 2016.

Immediately after executing the exclusivity agreement, Intrexon sent to GenVec s outside counsel, Hogan Lovells US LLP, referred to herein as Hogan Lovells, Intrexon s preliminary due diligence request list. On December 8, 2016, Mr. Swirsky sent GenVec s responses to the preliminary due diligence request list to Intrexon. The following day, multiple members of the Intrexon business and technical teams were granted access to GenVec s virtual data room.

On December 9, 2016, executives from Intrexon, including Dr. Reed; Donald Lehr, Chief Legal Officer; Mr. Nimrodi; Christian Ulrich, Chief M&A Counsel and several members of the scientific team at Intrexon, attended in person meetings at GenVec s headquarters. This meeting was led by Mr. Swirsky, who was joined by members of GenVec s corporate and scientific teams, including Douglas Brough, Ph.D., Chief Scientific Officer, Bryan Butman, Ph.D., Executive Vice President, Development, and James Lambert, Senior Director, Accounting & Financing, as well as representatives of Hogan Lovells. At this meeting, GenVec s executive team presented its responses to Intrexon s technical and non-technical diligence questions and answered additional questions from the Intrexon team. Additionally, Intrexon s scientific team was offered the opportunity to tour GenVec s facilities.

Between December 9 and December 21, the parties engaged in a due diligence process with respect to GenVec s scientific, legal and financial matters. On December 13, Mr. Swirsky sent Mr. Nimrodi an e-mail confirming that GenVec had added a significant amount of information to the virtual data room and had opened the technical and scientific portion of the virtual data room. Mr. Ulrich then sent Mr. Swirsky on December 16 a list of supplemental due diligence requests based on Intrexon s preliminary review of the documents uploaded to the virtual data room. GenVec sent Intrexon responses to the supplemental requests on December 20 and 21.

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On December 28, 2016, GenVec received a non-binding proposal from Intrexon to acquire 100% of the issued and outstanding stock of GenVec, in a stock-for-stock transaction, at an implied price of between $3.75 and $3.85 per share.

The board of directors of GenVec convened a telephonic meeting on December 30, 2016 at which all directors were in attendance, as well as representatives of Hogan Lovells. Mr. Swirsky opened this meeting by describing the background of discussions with Intrexon to date and then discussed the letter of intent provided by Intrexon. A representative of Hogan Lovells then provided background on discussions with Intrexon s legal department. Mr. Swirsky highlighted for the GenVec board of directors management s views on the limited business development and strategic transaction opportunities. The GenVec board of directors members agreed that it was not in the best interests of GenVec or its shareholders to accept the proposal from Intrexon and authorized Mr. Swirsky to respond to Mr. Nimrodi indicating the same. Additionally, the GenVec board of directors authorized Mr. Swirsky to request that Intrexon release GenVec from exclusivity on the basis that the offer was not acceptable to the GenVec board of directors. The GenVec board of directors also approved enabling a business development committee to engage in future strategic discussions with Intrexon and other parties, if any. Following the meeting of the GenVec board of directors, Mr. Swirsky sent Mr. Nimrodi a letter stating that GenVec believed that the parties were too far apart on perceived deal value to continue discussions and requested an early termination of the exclusivity period given the valuation gap.

On January 5, 2017, Mr. Nimrodi contacted Mr. Swirsky by email to schedule a telephone call, and they spoke later that day. During the conversation, Mr. Nimrodi stated that Intrexon intended to submit another offer rather than provide early termination of the exclusivity agreement.

In connection with the annual J.P. Morgan Healthcare Conference, both Mr. Swirsky and Dr. Reed were in San Francisco in the first part of January 2017. They met for dinner on January 8, 2017 and were joined by Dr. Brough. During dinner, Dr. Reed indicated that the Intrexon team was working on a revised proposal and the parties discussed the complementary technologies of the two companies.

Between January 9 and January 12, 2017, Mr. Swirsky, Dr. Brough, and members of GenVec s business development team met with various potential business development and strategic partners who were also in San Francisco for meetings related to the J.P. Morgan Healthcare Conference in San Francisco. In parallel, GenVec continued to engage in discussions with third parties with respect to financing opportunities for GenVec through the capital markets.

After failing to receive a new offer from Intrexon by January 10, 2017, and with no business development transactions expected to occur in the near term, GenVec s management determined that GenVec should engage in capital raising efforts both in order to meet its near-term cash needs and also to potentially help make GenVec a more attractive partner in business development efforts. On January 12, 2017, after discussions with management, the GenVec board of directors delegated full authority of the GenVec board of directors to a pricing committee to take actions necessary to authorize and issue up to $10 million of common stock at no less than $4.00 per share, together with warrants.

While GenVec was proceeding with capital raising efforts, at the direction of management, on January 13, 2017, representatives of Hogan Lovells contacted Mr. Lehr to inquire as to the status of Intrexon s interest. Mr. Lehr indicated again that Intrexon was planning on presenting an offer to GenVec, but that Intrexon had not yet determined the proposed terms.

On January 17, 2017, GenVec concluded that the revised proposal discussed by Intrexon was unlikely, and entered into an engagement letter with an investment bank to assist GenVec with an offering of equity securities. As part of the engagement and at the recommendation of the bank, GenVec authorized the bank to contact potential investors for

a private placement of preferred stock and warrants. During the afternoon of January 19, 2017, GenVec began negotiations with an institutional investor in connection with the proposed private

placement transaction. GenVec and the potential investors continued negotiations throughout the evening of January 19, 2017 with the goal of announcing a transaction prior to the market opening on Friday, January 20, 2017. However, GenVec and the investors were unable to reach agreement on the transaction terms for the private placement prior to market open on January 20 and the parties agreed to continue to negotiate with the intent of announcing the financing during intra-day trading if the terms could be resolved. By mid-day on January 20, the investor had agreed to the terms of a private placement that would have provided GenVec with gross proceeds of approximately $6.5 million, before fees and expenses. In the private placement, GenVec would have issued 6,500 shares of a newly created series of convertible preferred stock at $1,000 per share (and convertible into GenVec common stock at an initial conversion price of $5.00 per share) and warrants to purchase up to 1,300,000 shares of common stock at an exercise price of $5.00 per share. Assuming the issuance of common stock on conversion of the preferred stock and the full exercise of the warrants, the securities issued in the offering would have represented approximately 53% of the outstanding shares of common stock of GenVec.

Prior to executing documents with respect to the private placement, on the afternoon of January 20, 2017, Mr. Nimrodi delivered to Mr. Swirsky a non-binding proposal from Intrexon to acquire 100% of the issued and outstanding stock of GenVec at a price of $6.00 per share delivered in the form of Intrexon common stock plus a contingent payment right covering the next milestone to be received under the NVS License Agreement. Upon receiving this offer, Mr. Swirsky convened a telephonic meeting of the available members of the GenVec board of directors. The directors available for the meeting agreed that Mr. Swirsky should negotiate with Intrexon to improve the terms of the offer while maintaining the possibility of completing the financing transaction.

In accordance with the GenVec board of directors direction, Mr. Swirsky responded to Intrexon s offer indicating that the GenVec board of directors would be more likely to approve the transaction at a price of $8.00 per share plus up to $15 million in contingent payments based on the achievement of the milestones under the NVS License Agreement. Mr. Nimrodi responded to Mr. Swirsky stating that Intrexon was willing to increase the offer to a value of $7.00 per share payable in Intrexon common stock, but with no contingent payments. Mr. Swirsky then spoke with Randal Kirk, Chairman and Chief Executive Officer of Intrexon, regarding the potential strategic transaction and reached agreement on the key terms of the offer. Shortly after this discussion, Mr. Nimrodi formally communicated an offer of Intrexon common stock having a value of $7.00 per share of GenVec common stock plus 50% of the milestone payments received under the NVS License Agreement during the next 36 months. Mr. Swirsky responded to Mr. Nimrodi indicating that he thought that the companies should move forward on negotiating transactions documents under those terms and that he would meet with the GenVec board of directors the next morning. Mr. Nimrodi informed Mr. Swirsky that Intrexon wanted to execute a definitive agreement and to announce the transaction prior to the opening of the stock markets on Monday, January 23, 2017.

Mr. Swirsky reached out to the investors in the private placement following discussions with Intrexon to confirm that GenVec did not intend to sign the private placement transaction on January 20, 2017.

On the morning of January 21, 2017, the GenVec board of directors convened to discuss the status of discussions with Intrexon regarding the proposed strategic transaction and parallel discussions with the investors in the proposed financing transaction. The GenVec board of directors discussed the alternatives of a strategic transaction and a financing transaction, and asked Mr. Swirsky to discuss where GenVec stood with its other ongoing business development efforts. Following the discussion, the GenVec board of directors determined that, based on several factors, including the additional dilution to existing GenVec shareholders associated with a financing transaction and the limited prospects of completing an alternative business development transaction in the near-term, it was in the best interests of the GenVec shareholders to continue discussions with Intrexon regarding the potential strategic transaction. In discussing the financing transaction and the substantial dilution that would result, the GenVec board of directors considered the impact of the dilution on the existing stockholders, that the implied price of a share of

common stock in the financing was at a lower value than that implied by the offer price in the strategic transaction, and that if there were a strategic transaction in the future,

then the value paid by any third party would be split among a greater number of shareholders, which would require a greater overall premium to be paid in order to provide the same value to the existing shareholders. The GenVec board of directors also noted that the financing transaction would result in the existing and new shareholders having continued exposure to the uncertain outcome of GenVec s research and development activities, while at the same time providing less of a benefit to existing shareholders from any ultimate upside of those activities. Also in attendance at this meeting were representatives of Hogan Lovells who discussed with the GenVec board of directors its legal obligations associated with a strategic transaction with Intrexon. The GenVec board of directors then discussed engaging a financial advisor to assess the proposed transaction with Intrexon, in order to deliver to GenVec an opinion as to the financial fairness of the transaction. Following this discussion, the GenVec board of directors formally approved resolutions to form a special committee, comprised of Stefan D. Loren, Ph.D., Marc R. Schneebaum and Michael Richman, authorized to consider the terms of and negotiate the Intrexon transaction. The special committee was created in the interest of efficiency so that the full board would not always be required to convene in connection with the negotiation of the Intrexon transaction. Additionally, the GenVec board of directors formally authorized Mr. Swirsky to engage Roth as GenVec s financial advisor to provide a fairness opinion with respect to the transaction. Mr. Swirsky then left the meeting so that the GenVec board of directors could meet in an executive session. During the executive session, the representatives of Hogan Lovells advised the GenVec board of directors of its considerations in connection with a potential conflict of interest if Intrexon were to offer the executives of GenVec employment with Intrexon prior to the closing of the transaction with Intrexon.

That afternoon, Mr. Swirsky contacted representatives of Roth to discuss whether Roth would prepare an analysis and opinion for the GenVec board of directors as to the fairness, from a financial point of view, of the per share merger consideration to be received by the holders of GenVec common stock in the merger based on the proposed terms of the agreement and its analysis thereof. Roth agreed to perform such analysis and to render an opinion to the GenVec board of director with respect to the fairness, from a financial point of view, of the per share merger consideration to be received by the holders of GenVec common stock in the merger.

In the afternoon on January 21, 2017, Mr. Swirsky contacted the GenVec board of directors to update them on the proposed key terms of the transaction and to inform them that he expected to receive a draft merger agreement from Intrexon that evening. Mr. Swirsky also scheduled calls with the special committee of the GenVec board of directors and with the entire board of directors at 10:00 a.m., and 10:00 p.m., respectively, on January 22, to discuss the status of the transaction.

Later that evening of January 21, 2017, Mr. Ulrich sent Hogan Lovells a draft of the merger agreement, which included a number of open discussion items. Intrexon indicated that it planned on sharing a draft contingent payment rights agreement the next day. During the evening of January 21, 2017, GenVec and Hogan Lovells began reviewing the merger agreement and preparing disclosure schedules.

On the morning of January 22, 2017, the strategic transaction committee of the GenVec board of directors met via telephone conference, with representatives of Hogan Lovells in attendance, to discuss the material issues in the merger agreement. Representatives of Hogan Lovells summarized the material terms of the merger agreement, including the proposal by Intrexon that the purchase price of the GenVec common stock be determined using an exchange ratio calculated based on the 20-day volume weighted average price, referred to herein as VWAP, of Intrexon s common stock as of the close of business on January 20, 2017 (which valued each share of Intrexon common stock at $24.716 per share), and that the exchange ratio would be fixed and therefore the value to be received by GenVec s shareholder would float based on the value of a share of Intrexon common stock. The strategic transaction committee then discussed with counsel those terms, as well as others, including termination rights, the ability of GenVec to entertain offers from third parties following signing, circumstances under which GenVec would be required to pay the expenses of Intrexon and the importance of ensuring the certainty of the purchase price and the closing of the merger. Of

additional discussion among the committee members were provisions with respect to employment matters, treatment of outstanding options and warrants and GenVec s ability to operate its business between signing and closing. The transaction committee

then provided guidance to GenVec s management and outside counsel regarding the material outstanding terms, particularly pricing, termination rights, termination fee, expense reimbursement and closing certainty provisions.

In accordance with the directives from the strategic transaction committee, representatives of Hogan Lovells held a telephone conference with Mr. Lehr, Mr. Ulrich and representatives of Thompson Hine LLP, referred to herein as Thompson Hine, outside counsel to Intrexon, to discuss the material open issues in the merger agreement from GenVec s point of view. Specifically, representatives of Hogan Lovells proposed a go-shop provision that would have provided GenVec the ability to seek alternative proposals after signing of the transaction with a termination fee of $250,000, an exchange ratio with a floor of $6.50 per share using the closing price of Intrexon s common stock on January 21, 2017, a termination fee of $450,000 and no repayment of expenses in the event that the shareholders of GenVec do not approve the merger.

During the afternoon of January 22, 2017, GenVec received a draft of the proposed contingent payment rights agreement as well as a draft press release with respect to the merger.

Mr. Lehr and representatives of Hogan Lovells had further conversations with respect to the terms of the transaction throughout the afternoon, and in the evening the Intrexon team communicated revised terms, confirming that Intrexon was willing to discuss decreasing the termination fee from $1.25 million to $1 million, but was not amenable to a go-shop provision or a price floor, and that it required an expense reimbursement of up to $750,000 in the event of termination in certain circumstances, including if the GenVec shareholders did not approve the merger.

Later in the evening of January 22, 2017, representatives of Hogan Lovells held a telephone conference with the entire GenVec board of directors to further consider the proposed transaction and to provide feedback from the telephone calls with Intrexon. Representatives of Hogan Lovells reported on the discussion with Intrexon and its counsel and the revised terms that Intrexon had communicated. The GenVec board of directors discussed the pricing of the transaction, and particularly the relative importance of certainty around the price per share under the merger agreement. The GenVec board of directors agreed that a fixed price per share would provide GenVec s shareholders with greater certainty regarding the payments under the merger agreement, but that it would be reasonable to accept a floating exchange ratio, particularly in light of the view of the GenVec board of directors of the potential benefits from a combination of the two companies. The GenVec board of directors also discussed the historical volatility of both Intrexon and GenVec s common stock and concluded that it would be willing to determine the value of Intrexon common stock based on a shorter VWAP period, such as a five-day period ending on the day prior to signing the merger agreement.

The GenVec board of directors further discussed the termination provisions, concluding that the strategic value of the combination made it such that a go-shop provision was not necessary, but that it was still appropriate to have the reasonable ability to terminate the merger agreement if GenVec received a superior proposal, including by ensuring that any termination fee was reasonable. The GenVec board of directors agreed that a termination fee of $1 million or more was unacceptable and emphasized that it must be decreased in order for the GenVec board of directors to approve and recommend the transaction. The GenVec board of directors then discussed the proposals regarding the CPRs and that a structure using cash for the payment of those rights would make it difficult for the transaction to qualify as a tax free reorganization. Prior to adjourning the meeting, the directors agreed to meet again in the evening of January 23, 2017 to discuss the status of the transaction after further negotiations.

In the morning on January 23, 2017, Hogan Lovells delivered revised drafts of the merger agreement and the contingent payment rights agreement and initial drafts of ancillary documents. The revised draft of the merger agreement proposed a price based on the five-day VWAP of Intrexon s common stock, provisions relating to employee benefit arrangements, a termination fee of $450,000, an expense reimbursement for termination for GenVec s breach of

its covenants of up to $250,000 (but not on a no-vote by GenVec s shareholders), and carve-outs from the material adverse effect definition for certain events with respect to GenVec s programs that are outside of GenVec s control.

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In the evening of January 23, 2017, Thompson Hine sent further revised drafts of the merger agreement and related documents to Hogan Lovells. After reviewing the material revisions to the documents, representatives of Hogan Lovells and Thompson Hine, Mr. Lehr and Mr. Ulrich met via teleconference to discuss the open items in the agreements. During the call, the parties agreed to setting the exchange ratio based on the five-day VWAP, which would result in a fixed exchange ratio of 0.297 of a share of Intrexon common stock, plus a CPR. However, the parties were unable to agree with respect to certain provisions relating to termination of the merger agreement, including an associated break-up fee and expense reimbursement, and left the call to meet with their respective business teams.

Following the call with the legal teams, the GenVec board of directors convened a meeting to discuss the status of the transaction. Representatives of Hogan Lovells updated the GenVec board of directors on the agreed pricing and the differences between the parties with respect to termination provisions. The GenVec board of directors discussed the various termination provisions and agreed that the representatives of Hogan Lovells should continue discussions with the Intrexon representatives, including to limit GenVec s exposure in the event that the merger is not consummated. After providing specific guidance to the Hogan Lovells team, the GenVec board of directors scheduled a call at 6:30 a.m. on January 24, 2017 and Mr. Swirsky informed the members of the GenVec board of directors that representatives of Roth had indicated that they would be available at that time to present their fairness opinion, if requested.

Later that evening, after further discussions with Intrexon s legal representatives, Hogan Lovells sent further revised drafts of the merger agreement and related documents to Thompson Hine. The draft of the merger agreement proposed a termination fee of $550,000, an expense reimbursement of up to $400,000 for termination for breach by GenVec and an additional $200,000 expense reimbursement if GenVec willfully breaches the non-solicitation provision. The draft did not include an expense reimbursement in the event that the GenVec shareholders did not approve the transaction. And, it provided that the GenVec board of directors could, in certain circumstances, terminate the merger agreement if it had a change of recommendation. After further discussions through the night, Intrexon agreed to the material terms of the draft provided by Hogan Lovells.

That same night, Mr. Swirsky and Dr. Stefan Loren, a director of GenVec, engaged in discussions with Mr. Lehr and Mr. Rick L. Sterling, Intrexon s Chief Financial Officer, regarding certain diligence matters with respect to Intrexon.

Throughout the night of January 23 and into the early morning of January 24, the parties continued finalizing the documents for the transaction.

On the morning of January 24, 2017, the GenVec board of directors met, with representatives of Roth and Hogan Lovells in attendance at various points in the meeting, to consider approving the merger, pending results of the latest updates from its advisors regarding the negotiations of the material terms of the merger agreement. Representatives of Hogan Lovells updated the GenVec board of directors with respect to the current status of certain terms of the merger agreement that remained open as of the prior GenVec board of directors meeting, including that Intrexon had made material concessions with respect to termination fees. Representatives of Hogan Lovells then answered questions from the GenVec board of directors regarding the terms of the merger agreement and summarized the material terms of the other documents included in the transactions contemplated by the merger agreement.

Roth then joined the meeting and reviewed with the GenVec board of directors its financial analysis of the merger consideration and rendered an oral opinion, confirmed by the delivery of a written opinion, dated January 24, 2017, to the GenVec board of directors to the effect that, as of such date and based on and subject to various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken, the merger consideration to be received by the holders of GenVec common stock pursuant to the merger agreement and contingent payment rights agreement was fair, from a financial point of view, to such holders.

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Following the foregoing discussion, representatives of Hogan Lovells reviewed proposed resolutions approving the merger and the other transactions contemplated by the merger agreement. In addition to approving the execution, delivery and performance of the merger agreement, the resolutions contained, among other matters, resolutions approving the contingent payment rights agreement and other ancillary matters. At this point, Mr. Swirsky left the meeting, so that the GenVec board of directors could meet in an executive session. During the executive session, the GenVec board of directors considered that, as a result of the merger, Mr. Swirsky will be entitled to certain benefits, including acceleration of options held by Mr. Swirsky and a potential 18-month severance package if he experiences a qualifying termination of employment in the two-year period following the merger. The GenVec board of directors acknowledged that Mr. Swirsky s interests may be viewed as different than the other shareholders, but the GenVec board of directors agreed that Mr. Swirsky had not acted inconsistent with the best interests of the shareholders taken as a whole. Mr. Swirsky then rejoined the meeting.

The GenVec board of directors, following a review of the proposed resolutions, unanimously adopted resolutions and, among other things, (i) determined that the merger agreement, the merger, and the other transactions contemplated by the merger agreement were fair and advisable to, and in the best interests of, GenVec and its shareholders, (ii) approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement, (iii) approved the contingent payment rights agreement and (iv) resolved to recommend that the shareholders of GenVec adopt and approve the merger agreement.

On the morning of January 24, 2017, GenVec, Intrexon and Merger Sub signed the merger agreement and GenVec and Intrexon issued a joint press release announcing the merger prior to the opening of regular trading on the NASDAQ Capital Market.

Recommendation of the GenVec board of directors; GenVec s reasons for the merger

The GenVec board of directors, at a meeting held on January 24, 2017, unanimously:

- determined that the merger agreement, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interests of, GenVec and its shareholders;
- approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement;
- directed that a proposal to adopt the merger agreement be submitted to a vote at a meeting of the GenVec shareholders; and
- recommended that the GenVec shareholders vote to adopt and approve the merger agreement.

In evaluating the merger, the GenVec board of directors consulted with GenVec s senior management and outside legal advisors, considered the limited available alternatives to enhance GenVec s competitive position in the pharmaceutical industry and to increase shareholder value and considered a number of factors that it believed supported its decision to enter into the merger agreement and consummate the merger. These discussions included executive sessions with outside legal advisors without management and financial advisors present.

In that process, the GenVec board of directors considered, among other things, the following factors (not in any relative order of importance) as generally supporting its decision to approve the merger agreement and recommend that GenVec shareholders approve the merger proposal:

Financial Considerations

the per share stock consideration, having a value of 0.297 of a share of Intrexon common stock, without regard to the value of the CPR, which represented $7.00 per share of GenVec s common stock based on Intrexon s five-day VWAP as of January 23, 2017, which was an approximately 54% premium to GenVec s closing stock price of $4.54 per share on January 23, 2017;

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in addition to the initial payment of Intrexon common stock, each GenVec shareholder will receive a CPR, which provides GenVec s shareholders an opportunity to realize additional value to the extent certain milestones are achieved or occur and/or certain royalties are earned under the NVS License Agreement, through an additional payment of cash, or, under some circumstances, Intrexon common stock;

that based on the forecasts of GenVec s management, as well as the assumptions made by Roth based upon Roth s analysis of GenVec s weighted average cost of capital and Roth s experience and professional judgment, Roth calculated the net present value of a CPR to be approximately $0.49 as of January 24, 2017 and the combined value, on a per share basis, of the $7.00 of stock consideration per share of GenVec s common stock and the calculated net present value of a CPR to be $7.49, which represented an approximately 65% premium to the closing price of GenVec s common stock as of January 23, 2017;

the belief of the GenVec board of directors that, as a result of extensive arm s-length negotiations, it and its advisors had obtained Intrexon s best and final offer, and that, as of the date of the merger agreement, the per share merger consideration represented the highest consideration per share of GenVec common stock reasonably obtainable;

the consideration to be received by GenVec shareholders will consist of Intrexon common stock, providing GenVec shareholders the opportunity to participate as shareholders in the potential appreciation in the stock of the combined company, in light of perceived benefits of the proposed merger, including increased opportunities to pursue strategic collaborations using both GenVec and Intrexon technology;

Intrexon common stock issued in the merger will be registered with the SEC and listed on the NYSE, and therefore holders of GenVec common stock who wish to obtain liquidity with respect to their merger consideration will have the opportunity to do so;

the fact that, in order to proceed on a stand-alone basis, the GenVec board of directors and members of GenVec s senior management believed that GenVec would need to raise additional funding to finance ongoing operations, which, if available, would likely result in further significant dilution to GenVec s shareholders, including based on the financing terms that GenVec had most recently negotiated;

the financial analyses reviewed by Roth with the GenVec board of directors, and Roth s oral opinion to the GenVec board of directors (which was confirmed in writing by Roth s written opinion dated January 24, 2017), with respect to the fairness, from a financial point of view, of the per share merger consideration to be received by the holders of GenVec common stock in the merger, as of January 24, 2017, based upon and subject to the procedures followed, assumptions made, qualifications and limitations on the review undertaken and other matters considered by Roth in preparing its opinion (See The Merger Opinion of Roth Capital Partners as GenVec s financial advisor);

Strategic Considerations

the fact that, in the months leading up to GenVec s decision to engage in discussions with Intrexon regarding a strategic transaction on November 2, 2016, GenVec had encountered limited success in negotiating collaborations or partnerships;

the fact that GenVec has only one product, CGF166, under development and that its cash position limits its ability to acquire or invest in other indications, products, technologies or businesses;

the relatively slow pace of the development of CGF166, and that GenVec did not have the ability to change the pace of development;

the consideration by the GenVec board of directors of the current and historical financial condition, results of operations, business, competitive position, properties, assets and prospects of GenVec,

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including the risk factors set forth in GenVec s Annual Report on Form 10-K for the fiscal year ended December 31, 2015, subsequent quarterly reports on Form 10-Q and current reports on Form 8-K, as well as the significant risk associated with GenVec s reliance on its collaboration with Novartis, and its limited prospects for capital raising efforts;

Transaction Terms and Other Considerations

the terms of the merger agreement, including the merger exchange ratio, were the result of extensive arm s-length negotiations between representatives of Intrexon and GenVec;

the likelihood that the merger would be consummated based on, among other things:

the absence of any financing or due diligence condition to the completion of the merger;

the conditions to closing of the merger being specific and limited in scope;

the covenants contained in the merger agreement obligating each of the parties to use reasonable best efforts to take all actions necessary, proper or advisable to consummate and make effective the merger and the other transactions as promptly as practicable; and

GenVec being entitled to specific performance to prevent breaches of the merger agreement and to enforce specifically the terms of the merger agreement;

other terms of the merger agreement, including:

the GenVec board of directors ability, at any time prior to obtaining GenVec shareholder approval, if prior to taking such actions the GenVec board of directors determines, after consultation with outside legal counsel, that the failure to take such actions would breach, or would reasonably be expected to breach, its fiduciary duties to the GenVec shareholders, (i) to consider and respond to an unsolicited written proposal concerning any business combination, sale of at least 20% of GenVec s assets or acquisition of at least 20% of GenVec s outstanding voting equity interests, (ii) to furnish information to the person making such proposal and (iii) to participate in discussions or negotiations with the person making such proposal;

the GenVec board of directors ability, under certain circumstances, to (i) withdraw, change, qualify, withhold or modify, or publicly propose to withdraw, change, qualify, withhold or modify, in a manner adverse to Intrexon, the GenVec board of directors recommendation to GenVec shareholders that they vote in favor of the adoption of the merger agreement, or (ii) adopt, approve or recommend, or publicly propose to adopt, approve or recommend, an alternative acquisition proposal;

GenVec s ability, under certain circumstances, to terminate the merger agreement in order to enter into a merger agreement, acquisition agreement, letter of intent, memorandum of understanding or other similar agreement relating to a superior proposal, after paying to Intrexon a termination fee of $550,000; and

the availability of appraisal rights under the DGCL to GenVec shareholders who comply with all of the required procedures under the DGCL, which allows such holders to seek appraisal of the fair value of their shares of GenVec common stock as determined by the Delaware Court of Chancery;

the view of the GenVec board of directors that the terms of the merger agreement, including the parties mutual representations, warranties, covenants and conditions to closing, are reasonable;

the fact that the merger was unanimously approved by the GenVec board of directors, none of the members of which is affiliated with Intrexon;

the risk that pursuing other potential alternatives could have resulted in the loss of an opportunity to consummate a transaction with Intrexon; and

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the fact that the merger is designed to qualify as a reorganization within the meaning of Section 368 of the Internal Revenue Code.

In the course of its deliberation, the GenVec board of directors also considered the following risk factors relating to entering into the merger agreement and consummating the merger and the other transactions contemplated thereby, but determined that the benefits of the transactions substantially outweighed such risks:

the fact that the milestones and royalties necessary to trigger payments under the CPRs may not be achieved, and, if any such milestones or royalties are not achieved prior to the date that is 36 months following the closing of the merger, no payments would be made pursuant to the CPRs with respect to such milestones or royalties;

the fact that the CPRs are not freely transferable and, accordingly, will not be registered with the SEC or listed on any securities exchange;

the possibility that, if the merger is not consummated, under certain circumstances, GenVec may be required to pay up to $600,000 in Intrexon s expenses or a termination fee of $550,000, as more fully described in the sections entitled The merger agreement Termination fee and The merger agreement Costs and expenses, which could discourage other third parties from making an alternative proposal with respect to GenVec;

the possibility that the public announcement of the merger agreement could have an adverse effect on GenVec, including effects on GenVec s customers, operating results and share price, and GenVec s ability to attract and retain key management and personnel;

the potential impact of the restrictions under the merger agreement on GenVec s ability to take certain actions during the period between execution of the merger agreement and the consummation of the transactions, generally requiring the company to conduct business only in the ordinary course or, if not in the ordinary course, to first seek and obtain Intrexon s consent (which could delay or prevent GenVec from undertaking business opportunities that may arise pending completion of the transactions);

the possibility that the merger may be delayed or not occur at all, due to a failure of certain conditions, and the risks and costs to GenVec if the merger is delayed or does not occur at all, including the potential negative impact on GenVec s ability to retain key employees and the potential disruptive effects on GenVec s day-to-day operations and GenVec s relationships with third parties;

the risk that the merger and the other transactions contemplated by the merger agreement may divert management attention and resources away from other strategic opportunities and from operational matters;

the potential risks associated with achieving anticipated synergies and successfully integrating GenVec s business, operations and workforce with those of Intrexon;

the fact that the consideration to be received by GenVec s shareholders will consist of Intrexon common stock, and therefore, if the risks described in the preceding item materialize, the long-term value of the merger consideration may be materially less than the value of such consideration expected as of the date that the merger agreement was signed;

the fact that the price of Intrexon common stock determined at the time of closing of the merger could be lower than the price of such stock as of the time of signing the merger agreement, and accordingly, the value of the consideration received by the GenVec shareholders in the merger could be materially less than the value of such stock consideration as of the date that the merger agreement was signed;

the risk of incurring substantial expenses related to the merger, including in connection with any litigation resulting from the announcement of the pendency of the merger; and

the other risks described in the section entitled Risk factors.

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In addition, the GenVec board of directors was aware of and considered the interests of its directors and executive officers that are different from, or in addition to, the interests of GenVec shareholders generally, including the treatment in the merger of GenVec stock options and other equity awards described in the section entitled Interests of GenVec s directors and executive officers in the merger and Intrexon s agreement to indemnify GenVec directors and officers against certain claims and liabilities.

The foregoing discussion of information and factors considered by the GenVec board of directors is not exhaustive, but includes the material factors considered by the GenVec board of directors, including factors that support the merger and the other transactions contemplated by the merger agreement as well as those against them. In view of the wide variety of factors considered by the GenVec board of directors in connection with its evaluation of the merger and the other transactions and the complexity of these matters, the GenVec board of directors did not consider it practical to, nor did it attempt to, quantify, rank or otherwise assign relative weights to the specific factors that it considered in reaching its decision. Rather, the GenVec board of directors based its recommendation on the totality of the information presented to and considered by it. The GenVec board of directors evaluated the factors described above with the assistance of GenVec s senior management and legal advisors. In considering the factors described above, individual members of the GenVec board of directors may have given different weights to other or different factors.

This explanation of the factors considered by the GenVec board of directors is in part forward-looking in nature, and, therefore, should be read in light of the factors discussed in the sections of this proxy statement/prospectus entitled Cautionary statement on forward-looking statements and Risk factors.

After careful consideration, the GenVec board of directors unanimously determined that the merger agreement, the merger and the other transactions contemplated by the merger agreement are fair and advisable to, and in the best interests of, GenVec and its shareholders, and approved the execution, delivery and performance by GenVec of the merger agreement and the consummation of the merger and the other transactions contemplated by the merger agreement.

Accordingly, the GenVec board of directors unanimously recommends that GenVec shareholders vote **FOR** the merger proposal, **FOR** the merger-related compensation proposal and **FOR** the adjournment proposal.

Opinion of Roth Capital Partners as GenVec s financial advisor

The GenVec board of directors retained Roth on January 21, 2017 to render an opinion as to the fairness, from a financial point of view, to the holders of GenVec common stock of the consideration to be received by such holders in the merger.

On January 24, 2017, Roth rendered its oral opinion to the GenVec board of directors (which was subsequently confirmed in writing by delivery of Roth s written opinion dated the same date) to the effect that, based upon and subject to the assumptions, factors, qualifications and limitations set forth in the written opinion described herein, as of January 24, 2017, the consideration to be received by the holders of GenVec common stock in the merger was fair, from a financial point of view, to such holders.

Roth s opinion was prepared for the information of the GenVec board of directors for its use in connection with its consideration of the merger and only addressed the fairness, from a financial point of view, to the holders of GenVec common stock of the consideration to be received by such holders in the merger. Roth was not requested to opine as to, and Roth s opinion does not address, the relative merits of the merger or any alternatives to the merger, GenVec s underlying decision to proceed with or effect the merger, or any other aspect of the merger. Roth s opinion does not

address the fairness of the merger to the holders of any other class of securities, creditors or other constituencies of GenVec and is not a valuation of GenVec or its assets or any class of its securities. Roth did not express an opinion about the fairness of the amount or nature of any compensation payable or to be paid to any of the officers, directors or employees, of GenVec, whether or not relative to the merger.

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The summary of Roth s opinion in this proxy statement/prospectus is qualified in its entirety by reference to the full text of its written opinion, which is included as Annex E to this proxy statement/prospectus and sets forth the procedures followed, assumptions made, qualifications and limitations on the review undertaken and other matters considered by Roth in preparing its opinion. Roth s opinion was prepared for the information of the GenVec board of directors for its use in connection with its consideration of the merger. Neither Roth s written opinion nor the summary of its opinion and the related analyses set forth in this proxy statement/prospectus are intended to be, and they do not constitute, advice or a recommendation to any shareholder as to how such shareholder should act or vote with respect to any matter relating to the merger or any other matter.

In connection with rendering the opinion described above and performing its related financial analyses, Roth, among other things:

- reviewed a draft of the merger agreement;
- reviewed certain information, including financial forecasts, relating to the business, earnings, cash flow, assets, liabilities and prospects of GenVec that were furnished to Roth by GenVec;
- conducted discussions with members of senior management and representatives of GenVec concerning the matters described in the prior clause;
- reviewed publicly available information relating to the businesses of GenVec and Intrexon;
- discussed the past and current operations and financial condition and the prospects of GenVec with members of senior management of GenVec;
- reviewed the financial terms, to the extent publicly available, of certain acquisition and financing transactions that Roth deemed relevant; and
- performed such other analyses and considered such other factors as Roth deemed appropriate for the purpose of rendering its opinion.

In arriving at its opinion, Roth relied upon and assumed, without independent verification, the accuracy and completeness of all information that was publicly available or was furnished, or otherwise made available to Roth or discussed with or reviewed by or for Roth, and further assumed that the financial information provided to Roth had been prepared on a reasonable basis in accordance with industry practice, and that management of GenVec was not aware of any information or facts that would make any information provided to Roth incomplete or misleading.

With respect to the financial forecasts, estimates and other forward-looking information reviewed by Roth, Roth assumed that such information had been reasonably prepared based on assumptions reflecting the best currently available estimates and judgments of GenVec s management as to the expected future results of operations and financial condition of GenVec. Roth was not engaged to assess the achievability of any such financial forecasts,

estimates or forward-looking information or the assumptions on which they were based, and Roth expressed no opinion as to such information or assumptions. In addition, Roth did not assume any responsibility for, and did not perform, any appraisals or valuation of any specific assets or liabilities (fixed, contingent or other) of GenVec, nor was Roth furnished or provided with any such appraisals or valuations. Without limiting the generality of the foregoing, Roth was not engaged to perform, and did not undertake, any independent analysis of any pending or threatened litigation, regulatory action, possible unasserted claims or other contingent liabilities, to which GenVec or any of their respective affiliates is a party or may be subject, and at the direction of the GenVec board of directors and with its consent, Roth s opinion made no assumption concerning, and did not consider, the possible assertion of claims, outcomes or damages arising out of any such matters.

Roth relied upon and assumed, without independent verification, that the representations and warranties of all parties set forth in the merger agreement and all related documents and instruments that are referred to therein are

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true and correct, that each party will fully and timely perform all of the covenants and agreements required to be performed by such party, that the merger will be consummated pursuant to the terms of the merger agreement, without amendment, and that all conditions to the consummation of the merger will be satisfied without waiver thereof. Roth further assumed that the merger agreement was in all material respects identical to the draft of the merger agreement provided to Roth. Finally, Roth also assumed that all the necessary regulatory approvals and consents required for the merger, including the approval of the shareholders of GenVec, will be obtained in a manner that will not adversely affect GenVec or the contemplated benefits of the merger.

In connection with its opinion, Roth assumed and relied upon, without independent verification, the accuracy and completeness of all of the financial, legal, regulatory, tax, accounting and other information provided to, discussed with or reviewed by it. Roth s opinion does not address any legal, regulatory, tax or accounting issues. Roth s fairness opinion was approved by its fairness committee prior to delivering it to GenVec.

Roth s opinion is necessarily based upon the information available to Roth and facts and circumstances as they existed and were subject to evaluation as of January 24, 2017, which is the date of the Roth opinion. Although events occurring after the date of the Roth opinion could materially affect the assumptions used in preparing the opinion, Roth does not have any obligation to update, revise or reaffirm its opinion and Roth expressly disclaims any responsibility to do so. Roth did not express any opinion as to the price at which shares of Intrexon common stock may trade following announcement of the merger or at any future time.

The consideration to be paid by GenVec in the merger was determined through negotiations between GenVec and Intrexon. Roth did not provide advice to the GenVec board of directors during these negotiations, and the decision to enter into the merger agreement was solely that of the GenVec board of directors. Roth s opinion and its presentation to the GenVec board of directors was one of many factors taken into consideration by the GenVec board of directors in connection with its consideration of the merger. Consequently, the analyses as described herein should not be viewed as determinative of the opinion of the GenVec board of directors with respect to the consideration to be received by holders of GenVec common stock in the merger or of whether the GenVec board of directors would have been willing to agree to different consideration.

The following is a summary of the material financial analyses performed by Roth in connection with the preparation of its fairness opinion, which opinion was rendered orally to the GenVec board of directors (and subsequently confirmed in writing by delivery of Roth s written opinion dated the same date) on January 24, 2017. The preparation of analyses and a fairness opinion is a complex analytic process involving various determinations as to the most appropriate and relevant methods of financial analysis and the application of those methods to the particular circumstances and, therefore, such an opinion is not readily susceptible to summary description and this summary does not purport to be a complete description of the analyses performed by Roth or the delivery of Roth s opinion to the GenVec board of directors.

In furnishing its opinion, Roth did not attempt to combine the analyses described herein into one composite valuation range, nor did Roth assign any quantitative weight to any of the analyses or the other factors considered. Furthermore, in arriving at its opinion, Roth did not attribute any particular weight to any analysis or factor considered by it, but rather made qualitative judgments as to the significance and relevance of each analysis and factor in light of one another. Accordingly, Roth has stated that it believes that its analyses must be considered as a whole and that considering any portion of its analyses, without considering all of the analyses, could create a misleading or incomplete view of the process underlying its opinion or the conclusions to be drawn therefrom.

This summary includes information presented in tabular format. In order to fully understand the financial analyses presented by Roth, the tables must be read together with the text of each analysis summary and considered as a whole.

The tables alone do not constitute a complete summary of the financial analyses. Considering any portion of such analyses and of the factors considered, without considering all analyses and factors, could create a misleading or incomplete view of the process underlying Roth s opinion.

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In conducting the analysis as to the fairness, from a financial point of view, to the holders of GenVec common stock of the consideration to be received by such holders in the merger, Roth evaluated the equity valuation of GenVec using a number of valuation metrics. Roth also estimated the value of the CPRs to be received by holder of GenVec common stock. Roth then compared the total consideration to be paid by Intrexon to an estimate of the equity value of GenVec.

The results of the application by Roth of each of the valuation methodologies utilized in connection with its fairness opinion are summarized below. The order in which such valuation methodologies are described below does not represent the relative importance or weight given to those methodologies by Roth. Except as otherwise noted, the following quantitative information, to the extent that it is based on market data, is based on market data as it existed on January 23, 2017.

Estimated GenVec equity valuation

Roth evaluated the value of GenVec using the following valuation methodologies:

public market valuation;

public comparable analysis;

precedent M&A premiums analysis; and

discounted cash flow analysis of GenVec s CGF166 and FMD programs.

Utilizing these valuation methodologies, Roth estimated equity valuations of GenVec as follows: (i) $4.40 per share to $5.95 per share utilizing the Public Market Valuation; (ii) $7.33 per share to $8.89 per share utilizing the Public Comparable Analysis; (iii) $6.64 per share to $7.00 per share utilizing the Precedent M&A Premiums Analysis; and (iv) $4.64 per share to $4.77 per share utilizing the Discounted Cash Flow Analysis. Roth determined that these estimates resulted in an average equity valuation of $5.75 per share to $6.65 per share.

The results of Roth s analyses are summarized as follows:

GenVec Inc. Valuation Summary ($ in millions unless on a per share basis)

Methodology	Implied Enterprise Value Low	Implied Enterprise Value High	Implied Equity Value[1] Low	Implied Equity Value[1] High	Implied Equity Value Per Share[2] Low	Implied Equity Value Per Share[2] High
GenVec Public Market Valuation	$ 3.7	$ 7.3	$ 10.3	$ 13.9	$ 4.40	$ 5.95
Public Comparable Analysis	$ 10.6	$ 14.2	$ 17.2	$ 20.8	$ 7.33	$ 8.89
Precedent M&A Premiums Analysis	$ 9.0	$ 9.8	$ 15.6	$ 16.4	$ 6.64	$ 7.00
Discounted Cash Flow Analaysis[3]	$ 4.3	$ 4.6	$ 10.9	$ 11.2	$ 4.64	$ 4.77

Average	**$ 6.9**	**$ 9.0**	**$ 13.5**	**$ 15.6**	**$ 5.75**	**$ 6.65**

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Notes: (1) Equity Value assumes a net cash position of $6.6 million

(2) Based on fully-diluted share count of 2,344,381.6 shares

(3) Enterprise value based on the discounted cash flow analysis of the CGF166 and FMD programs; For the purposes of the analysis, GenVec s assets in the discovery or preclinical development stages were not included in the Discounted Cash Flow Analysis due to the early nature of the programs and lack of strategic partner validation

Public market valuation

Roth noted that since January 1, 2016, the price of GenVec common stock had declined 75%, closing on January 23, 2017 at $4.54, reflecting a public market valuation of $10.3 million.

Utilizing the five-day high ($6.13 on January 17, 2017) and five-day low ($4.54 on January 23, 2017) of the price of GenVec common stock, and assuming a net cash position of $6.6 million, Roth determined that GenVec s implied enterprise value ranged from $3.7 million to $7.3 million.

Public comparable analysis

Roth reviewed the total enterprise values of publicly traded companies that Roth deemed comparable to GenVec. The comparable companies analysis uses data from comparable companies to develop a measure of current value for GenVec. The rationale for using a public comparable analysis is that companies in the same industry with similar operating characteristics should have certain valuation benchmarks in common. The goal of the analysis is to develop a premise for relative value, which when coupled with other valuation approaches, presents a foundation for determining a range of values for a company.

Although none of the following companies is identical to GenVec, Roth selected these companies because they had publicly traded equity securities and were deemed to be similar to GenVec in one or more respects, including their businesses, their size and their operating characteristic. Roth obtained the following publicly available information for each selected company from Biomed Tracker, Capital IQ, and Evaluate Pharma and, as reflected

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below, determined that the selected companies had a median and mean enterprise value of $10.6 million and $14.2 million, respectively:

Company	Ticker	1/23/2017 Price	52 Week High	52 Week Low	Market Cap ($M)	Enterprise Value ($M)
ImmunoVaccine Inc.	IMV	$ 0.51	$ 0.64	$ 0.29	$ 60.2	$ 58.0
Auris Medical Holding AG	EARS	$ 1.15	$ 5.45	$ 0.84	$ 39.5	$ 12.8
Vical Incorporated	VICL	$ 2.22	$ 4.80	$ 2.20	$ 24.5	($ 12.9)
Heat Biologics, Inc.	HTBX	$ 0.93	$ 3.61	$ 0.40	$ 23.9	$ 18.3
Benitec Biopharma Limited	BLT	$ 0.11	$ 0.22	$ 0.06	$ 18.6	$ 8.4
Opexa Therapeutics, Inc.	OPXA	$ 0.93	$ 4.93	$ 0.50	$ 6.6	$ 0.8
			Mean		**$ 28.9**	**$ 14.2**
			Median		**$ 24.2**	**$ 10.6**

Although the selected companies were used for comparison purposes, no selected company was either identical or directly comparable to GenVec s business. Accordingly, Roth s comparison of selected companies to GenVec and analysis of the results of such comparisons was not purely mathematical, but instead necessarily involved complex considerations and judgments concerning differences in financial and operating characteristics and other factors that could affect the relative values of the selected companies and GenVec.

Precedent M&A premiums analysis

The precedent M&A premiums analysis uses data from selected public M&A transactions to evaluate the premiums paid for comparable companies. The rationale for using a precedent M&A premiums analysis is that the premiums paid for public companies in the same industry with similar operating characteristics should have some level of comparability. The goal of the analysis is to develop a premise for relative value, which when coupled with other valuation approaches, presents a foundation for determining a range of values for a company.

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Roth examined precedent transactions, from March 30, 2015 through September 14, 2016, involving public life science companies that it viewed as similar to GenVec with available transaction values. Roth selected these entities on the basis of the nature of their businesses, their size and their operating characteristics. Roth limited transactions to those with a transaction value of less than $1.0 billion. The data publicly available on these transactions, due in part to their size, is limited and was obtained by Roth from Evaluate Pharma and company press releases. Roth examined the data points set out in the table below for the selected precedent transactions, including, for each transaction, the transaction value and the premium of the offer price in the transaction over the target company s closing stock price one day prior to the announcement of the transaction:

				Stock Price Premium
			Transaction	1-Day Prior
Date[1]	**Target Company**	**Acquiroring Company**	**Value (M)**	**Announcement**
09/14/16	Vitae Pharmaceuticals	Allergan	$ 639.0	159%
09/12/16	Raptor Pharmaceutical	Horizon Pharma	$ 800.0	21%
07/11/16	Sagent Pharmaceuticals	Nichi-Iko Pharmaceutical	$ 736.0	40%
07/01/16	BIND Therapeutics	Pfizer	$ 38.0	78%
05/23/16	XenoPort	Arbor Pharmaceuticals	$ 467.0	60%
05/02/16	Symmetry Surgical	Consortium of Investors	$ 140.3	26%
11/09/15	Ocata Therapeutics	Astellas Pharma	$ 359.8	79%
09/15/15	InSite Vision	Sun Pharmaceutical Industries	$ 48.0	30%
09/02/15	Synergetics USA	Valeant Pharmaceuticals International	$ 166.0	71%
07/13/15	Unilens Vision	Valeant Pharmaceuticals International	$ 28.0	24%
06/04/15	DARA BioSciences	Midatech Pharma	$ 24.0	51%
04/23/15	Ridley	Alltech	$ 412.9	20%
03/30/15	Cellular Dynamics International	FUJIFILM Holdings	$ 307.0	108%
			Mean	**59%**
			Median	**51%**

Note: (1) As of transaction announcement

As reflected in the table above, Roth determined that the selected precedent M&A premiums had a median and mean transaction premium of 51% and 59%, respectively. Applying the median and mean transaction premiums to GenVec s market capitalization of $10.3 million, Roth determined that the implied equity value of GenVec ranged from $15.6 million to $16.4 million and, assuming a net cash position of $6.6 million, the implied enterprise value ranged from $9.0 million to $9.8 million.

No company or transaction utilized in the precedent M&A premiums analysis is identical to GenVec or to the merger. In evaluating the precedent transactions, Roth made judgments and assumptions concerning differences in financial and operating characteristics and other factors that could affect the relative values of the companies or transactions to which GenVec or the merger were compared.

Discounted cash flow analysis

The discounted cash flow analysis is a forward looking methodology and is based on projected future cash flows to be generated by GenVec which are then discounted back to the present. This methodology has three primary

components: (1) the present value of projected cash flows for a determined period; (2) the present value of the terminal value of cash flows based on the declining growth method (representing a company s value beyond the time horizon on the projections); (3) the weighted average cost of capital (WACC) used to discount such future cash flows and terminal value back to the present. In the discounted cash flow analysis, Roth used cash flow projections from GenVec management and then applied a probability of success adjustment based on

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the estimated probabilities of clinical success of its CGF166 and FMD programs as provided by GenVec management. The future cash flows plus the terminal value of such cash flows are discounted by the WACC, to derive a present value. For the purposes of the Discounted Cash Flow Analysis, GenVec s assets in the discovery or preclinical development stages were not included due to the early nature of the programs and lack of strategic partner validation.

In conducting its discounted cash flow analysis for the purpose of determining the enterprise value of GenVec, Roth applied the projected cash flows provided by GenVec management that GenVec is expected to generate during fiscal years 2017 to 2039 from GenVec s CGF166 and FMD programs based upon financial projections prepared by GenVec management. In the exercise of Roth s professional judgement and based upon its experience, terminal values based on declining cash flow at a rate of 3.0% to 7.0% were applied to management s cash flow estimates in year 2039 to complete the basis for calculating the present value. The future cash flows were then discounted by the WACC, to derive a present value. In selecting an appropriate discount rate, Roth took into account the industry s unlevered equity beta of 1.22, GenVec s debt to equity ratio of 0.05%, levered beta of 1.22%, the equity risk premium of 19% based on Duff & Phelps 2015 Valuation Handbook, the risk free rate of 2.4% for 10-year U.S. treasury securities, pre-tax cost of debt of 3.3% (average of comparable companies), GenVec s tax rate assumption of 34.0%, GenVec s equity to total capitalization of 100.0% and its debt to total capitalization of 0.0%. Application of the foregoing principles resulted in a 25.6% WACC. Roth performed a sensitivity analysis using discount rates from 24.6% to 26.6% to arrive at a range of present values.

Based on the foregoing, Roth computed an enterprise value range of $4.3 million to $4.6 million. In evaluating the foregoing, it should be noted that the WACC does not take into consideration the specific firm risks such as bankruptcy. As a result, GenVec s true WACC may be higher when taking into consideration the risks of default and negative operating profit history of the business which would have the effect of reducing the enterprise value range. By conducting an analysis of a range of discount rates rather than relying one specific WACC, Roth is comfortable that the analysis is appropriate.

GenVec Inc.
Discounted Cash Flow Analysis CGF166 & FMD Programs

($ in millions)

	2017	2018	2019	2020	2021	2022	2023	2024
Revenue Projections	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 10.9	$ 15.4
YoY Growth								*41%*
Net Income CGF166	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 7.6	$ 10.8
Probability of Success Adjustment[2]	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	5.0%	5.0%
Net Income (Risk Adjusted)	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.4**	**$ 0.5**
First Indication Milestones CGF166	$ 0.0	$ 5.0	$ 0.0	$ 10.0	$ 20.0	$ 10.0	$ 0.0	$ 0.0
Probability of Success Adjustment[2]	100.0%	35.0%	35.0%	17.5%	5.3%	5.3%	5.3%	5.3%
First Indication Milestones (Risk Adjusted)	**$ 0.0**	**$ 1.8**	**$ 0.0**	**$ 1.8**	**$ 1.1**	**$ 0.5**	**$ 0.0**	**$ 0.0**

Second Indication Milestones CGF166	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 1.0	$ 5.0	$ 0.0	$ 15.0
Probability of Success Adjustment[2]	100.0%	100.0%	100.0%	100.0%	28.0%	11.2%	11.2%	2.7%
Second Indication Milestones (Risk Adjusted)	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.3**	**$ 0.6**	**$ 0.0**	**$ 0.4**
Concept of Milestone Payment FMD	$ 0.3	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0
Probability of Success Adjustment[2]	80%	80%	80%	80%	80%	80%	80%	80%
Concept of Milestone Payment (Risk Adjusted)	**$ 0.2**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**	**$ 0.0**
Cash Flows (Risk Adjusted)	**$ 0.2**	**$ 1.8**	**$ 0.0**	**$ 1.8**	**$ 1.3**	**$ 1.1**	**$ 0.4**	**$ 0.9**

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Note: (1) Figures are based on GenVec s estimates

(2) Probability of Success (PoS) adjustment based on GenVec s estimates

	2025	2026	2027	2028	2029	2030	2031	2032
Revenue Projections	$ 20.5	$ 28.3	$ 52.4	$ 58.8	$ 63.1	$ 4.3	$ 4.7	$ 5.1
YoY Growth	*33%*	*38%*	*85%*	*12%*	*7%*	*-93%*	*10%*	*9%*
Net Income CGF16	$ 14.3	$ 19.8	$ 36.7	$ 41.1	$ 44.2	$ 3.0	$ 3.3	$ 3.6
Probability of Success Adjustment[2]	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Cash Flows (Risk Adjusted)	**$ 0.72**	**$ 1.0**	**$ 1.8**	**$ 2.1**	**$ 2.2**	**$ 0.2**	**$ 0.2**	**$ 0.2**

	2033	2034	2035	2036	2037	2038	2039
Revenue Projections	$ 5.6	$ 3.6	$ 4.0	$ 4.4	$ 3.4	$ 3.7	$ 2.5
YoY Growth	*9%*	*-35%*	*10%*	*10%*	*-24%*	*11%*	*-34%*
Net Income CGF16	$ 3.9	$ 2.6	$ 2.8	$ 3.1	$ 2.4	$ 2.6	$ 1.7
Probability of Success Adjustment[2]	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Cash Flows (Risk Adjusted)	**$ 0.20**	**$ 0.1**	**$ 0.1**	**$ 0.2**	**$ 0.1**	**$ 0.1**	**$ 0.1**

	Declining Growth Terminal Value Methodology				Declining Growth Method		
	NPV of Cash Flows	PV of Terminal Value					
		Declining Growth Method			NPV+Terminal Value		
Discount Rate	**(2017-2039)**	**3%**	**5%**	**7%**	**3%**	**5%**	**7%**
24.6%	$ 4.6	$ 0.002	$ 0.002	$ 0.002	$ 4.6	$ 4.6	$ 4.6
25.1%	$ 4.5	$ 0.002	$ 0.002	$ 0.002	$ 4.5	$ 4.5	$ 4.5
25.6%	$ 4.4	$ 0.002	$ 0.002	$ 0.002	$ 4.4	$ 4.4	$ 4.4
26.1%	$ 4.4	$ 0.002	$ 0.002	$ 0.001	$ 4.4	$ 4.4	$ 4.4
26.6%	$ 4.3	$ 0.002	$ 0.001	$ 0.001	$ 4.3	$ 4.3	$ 4.3

Note: (1) Figures are based on GenVec s estimates

(2) Probability of Success (PoS) adjustment based on GenVec s estimate

Contingent payment right analysis

Using the results of its discounted cash flow analysis described above, Roth estimated the value range of the CPRs issuable to holders of GenVec common stock as $1.1 million to $1.2 million. The average of the estimated range of the CPRs was $1.1 million or $0.49 per share, based on the 2,344,381.6 shares of GenVec common stock outstanding on a fully-diluted basis as of January 23, 2017.

GenVec Inc.

Discounted Cash Flow Analysis - CPRs (CGF166)

($ in millions)

	2017	2018	2019	2020
First Indication Milestones[1]	$ 0.0	$ 2.5	$ 0.0	$ 5.0
Probability of Success Adjustment[2]	100.0%	35.0%	35.0%	17.5%
Cash Flows (Risk Adjusted)	**$ 0.0**	**$ 0.9**	**$ 0.0**	**$ 0.9**

Discount Rate	NPV of Cash Flows (2017-2020)
24.6%	$ 1.2
25.1%	$ 1.1
25.6%	$ 1.1
26.1%	$ 1.1
26.6%	$ 1.1

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Note: (1) FY2017 - FY2020 figures are based on GenVec s estimates

(2) Probability of Success (PoS) adjustment based on GenVec s estimates

Consideration analysis

Based on the exchange ratio in the merger agreement of 0.297 of a share of Intrexon common stock for each share of GenVec common stock, Roth evaluated the consideration to be received by holders of GenVec common stock in the merger.

Roth noted that the closing price of GenVec common stock was $4.54 per share on January 23, 2017. Based on the value of $7.00 per share represented by the exchange ratio and Roth s estimate of the net present value of the CPRs, Roth estimated that each holder of GenVec common stock would receive consideration in the merger of approximately $7.49 per share, based on the 2,344,381.6 shares of GenVec common stock outstanding on a fully-diluted basis as of January 23, 2017. Roth concluded that the $7.49 per share consideration being paid by Intrexon was greater than the estimated equity value range of $5.75 to $6.65 attributed to GenVec and that the average of the estimated equity value range attributed to GenVec was $6.20 per share based on the midpoint of the valuation range attributed to GenVec.

As discussed above, Roth performed a variety of financial and comparative analyses for the purpose of rendering its opinion. While the preceding summary describes several analyses and examinations that Roth deems material to its evaluation and opinion, they are not a comprehensive description of all analyses and examinations actually conducted by Roth.

General

Roth is a nationally recognized investment banking firm that provides financial advisory services and is continually engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of listed and unlisted securities, private placements and valuations for estate, corporate and other purposes. The GenVec board of directors retained Roth to render an opinion as to the fairness, from a financial point of view, to the holders of GenVec common stock of the consideration to be received by such holders in the merger pursuant to the merger agreement based upon the foregoing qualifications, experience and expertise.

GenVec paid Roth a fee of $175,000 for rendering its fairness opinion delivered in connection with the merger. The opinion fee was not contingent in whole or in part on the success of the merger, or on the results of Roth s evaluation and analysis or upon the conclusions reached in Roth s opinion. In addition, GenVec agreed to reimburse Roth up to $25,000 for its reasonable out-of-pocket expenses, including reasonable fees and disbursements of its counsel. GenVec has also agreed to indemnify Roth against certain liabilities and other items that may arise out of GenVec s engagement of Roth. The GenVec board of directors did not limit Roth in any way in the investigations it made or the procedures it followed in rendering its opinion.

Roth in the past has provided and may in the future provide investment banking and other financial services to GenVec and its affiliates for which Roth and its affiliates have received, or, in the case of future services, may receive, compensation. Roth has not, however, had a material relationship with, nor otherwise received fees from, GenVec, Intrexon, or any other parties to the merger during the two years preceding the date of Roth s opinion. In February 2014, GenVec and Roth entered into an Equity Distribution Agreement (the EDA) relating to the establishment of a $10 million at-the-market program for the sale of common stock through Roth. Although the EDA remains in place,

the at-the-market program was suspended in March 2014 and no further sales were made and Roth received no fees or compensation thereafter. Roth is a full service securities firm engaged in securities trading and brokerage activities, as well as providing investment banking and other financial services. In the ordinary course its business, Roth and its affiliates may acquire, hold or sell, for its and its affiliates own accounts and for the accounts of customers, equity, debt and other securities and financial instruments (including

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bank loans and other obligations) of GenVec and the other parties to the merger, and, accordingly, may at any time hold a long or a short position in such securities. In the future, Roth may provide financial advisory and investment banking services to Intrexon and its affiliates for which Roth would expect to receive compensation.

Consistent with applicable legal and regulatory requirements, Roth has adopted policies and procedures to establish and maintain the independence of its research departments and personnel. As a result, Roth s research analysts may hold views, make statements or investment recommendations and/or publish research reports with respect to GenVec, Intrexon and/or the merger that differ from the views of its investment banking personnel.

Interests of GenVec s directors and executive officers in the merger

In considering the recommendation of the GenVec board of directors to approve the merger proposal, GenVec shareholders should be aware that GenVec 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 GenVec board of directors was aware of and considered these potential interests, among other things, in adopting the merger agreement and approving the merger, and in recommending that the merger agreement be adopted by shareholders. See The merger GenVec s reasons for the merger and recommendation of the GenVec board of directors. These interests are described in further detail below, and certain of them are quantified in the narrative and table below. All share amounts relating to GenVec stock options, and the exercise prices of each such option, described in this section have been retroactively adjusted to reflect the reverse stock split.

Treatment of outstanding GenVec stock options

GenVec has stock options outstanding under the GenVec, Inc. 2002 Stock Incentive Plan, which we refer to as the 2002 Plan, a CEO Inducement Award, and the GenVec, Inc. 2015 Omnibus Incentive Plan (which amended and restated the GenVec, Inc. 2011 Omnibus Incentive Plan), which we refer to as the 2015 Plan. All stock options granted under the 2002 Plan and the CEO Inducement Award previously vested in accordance with their terms. Pursuant to the applicable stock option award agreements, all unvested stock options under the 2015 Plan will fully vest upon a change in control. A change in control will occur under the 2015 Plan both upon the approval of the merger proposal by the GenVec shareholders and the consummation of the merger.

Under the terms of the merger agreement, contingent on and subject to the closing of the merger, each outstanding, unvested stock option to purchase shares of GenVec common stock will fully vest and will become immediately exercisable for a period of 15 days prior to the effective time of the merger, which period we refer to as the exercise window, and each holder of outstanding GenVec stock options will be permitted to exercise such stock options during the exercise window. Each share of GenVec common stock purchased as a result of the exercise of a GenVec stock option during the exercise window will be treated as a share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger and will be eligible to receive the merger consideration as described under the headings The merger agreement Merger consideration and The merger agreement Treatment of GenVec stock options and warrants Treatment of stock options. At the effective time of the merger, each then-outstanding, unexercised GenVec stock option will automatically, and without any required action on the part of the holder thereof, be cancelled for no consideration.

Under the 2002 Plan, the per share exercise price of stock options ranges from $41.00 to $410.00, and the weighted average exercise price is $120.71. Under the CEO Inducement Award, the per share exercise price is $25.40. Under the 2015 Plan, the per share exercise price of stock options ranges from $3.80 to $39.60, and the weighted average exercise price is $19.65. As of May 8, 2017, the per share closing price of GenVec common stock on the NASDAQ was $5.88. As a result, GenVec anticipates that many outstanding GenVec stock options, while vested or vesting in

connection with the merger, will not be exercised in connection with the merger and will be cancelled for no consideration as of the closing of the merger.

The following tables set forth, for each of the GenVec directors and executive officers (i) the number of shares of GenVec common stock underlying previously-vested GenVec stock options, and (ii) the number of shares of

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GenVec common stock underlying unvested GenVec stock options that will vest in connection with the merger, and (iii) the per share exercise price of each such GenVec stock option, in each case assuming the director or executive officer continues employment or service through the approval of the merger proposal by GenVec s shareholders.

Non-Employee Directors

Name	Vested Options[1]	Unvested Options[2]	Exercise Price ($)
Wayne T. Hockmeyer, Ph.D.	150		283.00
	150		147.00
	150		82.39
	150		53.00
	150		28.20
	1,500		23.80
	2,250		20.90
	2,250		19.50
		1,500	3.80
William N. Kelley, Ph.D.	150		283.00
	150		147.00
	150		82.39
	150		53.00
	150		28.20
	1,500		23.80
	1,500		20.90
	1,500		19.50
		1,500	3.80
Stefan D. Loren, Ph.D.	1,500	500	8.40
	1,500		16.30
	1,500		20.90
	1,500		19.50
		1,500	3.80
Quinterol J. Mallette, M.D.	2,500	1,000	20.90
	1,500		19.50
		1,500	3.80
Michael Richman	1,000	1,000	29.70
	1,500		19.50
		2,250	3.80
Marc Schneebaum	150		283.00
	150		147.00
	150		82.39
	150		53.00
	150		28.20
	1,500		23.80
	1,500		20.90

1,500		19.50
	1,500	3.80

(1) This amount includes previously-vested GenVec stock options and excludes unvested GenVec stock options that will vest in connection with the merger. The number of previously-vested GenVec stock options assumes an effective date of the approval of the merger proposal by GenVec s shareholders as of June 30, 2017 and includes the number of GenVec stock options anticipated to vest in the ordinary course, in accordance with the existing vesting schedule, up to June 30, 2017.

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(2) This amount includes the unvested GenVec stock options that will vest in connection with the merger, assuming an effective date of approval of the merger proposal by GenVec s shareholders as of June 30, 2017.

Executive Officers

Name	Vested Options[1]	Unvested Options[2]	Exercise Price ($)
Douglas E. Brough	250		179.00
	400		218.00
	400		41.00
	1,250		220.00
	350		179.00
	2,000		57.00
	7,500		24.90
	8,500		15.60
	4,271	729	39.60
	5,437	3,563	29.70
	4,604	8,396	5.60
Bryan T. Butman	1,750		179.00
	2,250		41.00
	1,500		220.00
	2,000		57.00
	6,000		24.90
	7,500		15.60
	3,417	583	39.60
	3,625	2,375	29.70
	2,125	3,875	5.60
James V. Lambert	150		179.00
	200		119.00
	400		41.00
	400		220.00
	250		50.17
	650		57.00
	1,000		24.90
	1,000		15.60
	854	146	39.60
	625	375	20.90
	1,812	1,188	29.70
	1,416	2,584	5.60
Douglas J. Swirsky	1,500		179.00
	2,250		41.00
	1,500		220.00
	2,000		57.00
	6,000		24.90
	12,500		15.60
	6,406	1,094	39.60

12,083	7,917	29.70
8,854	16,146	5.60

(1) This amount includes previously-vested GenVec stock options and excludes unvested GenVec stock options that will vest in connection with the merger. The number of previously-vested GenVec stock options

assumes an effective date of the approval of the merger proposal by GenVec s shareholders as of June 30, 2017 and includes the number of GenVec stock options anticipated to vest in the ordinary course, in accordance with the existing vesting schedule, up to June 30, 2017.

(2) This amount includes the unvested GenVec stock options that will vest in connection with the merger, assuming an effective date of the approval of the merger proposal by GenVec s shareholders as of June 30, 2017.

Salary Continuation and Change in Control Agreements

GenVec has entered into (i) salary continuation agreements with Mr. Swirsky and Drs. Brough and Butman, and (ii) a change in control agreement with Mr. Swirsky, in each case pursuant to which the executive officer may become entitled to certain payments or benefits upon a qualifying termination of employment. To the extent that Mr. Swirsky becomes entitled to benefits under his change in control agreement, his salary continuation agreement will be superseded, and he will not receive any benefit under that agreement. Mr. Lambert is not party to a salary continuation agreement or a change in control agreement with GenVec.

Salary Continuation Agreements

Under the terms of each salary continuation agreement, if GenVec terminates the employment of the executive officer without cause (as defined below) and other than by reason of death or disability, GenVec will provide the executive officer with (i) continuation of the executive officer s regular base salary for a period of 12 months, paid in installments over such 12-month period consistent with GenVec s then-current payroll practices, (ii) continued life insurance and health insurance under GenVec s employee benefit plans and policies for 12 months, and (iii) a lump sum cash payment equal to the product of (a) the annual bonus paid to the executive officer for the fiscal year preceding the termination date, *divided by* 12, *multiplied by* (b) the number of months of service during the year of termination.

Under the terms of the salary continuation agreements, cause is generally defined to include:

the willful and continued failure of the executive officer to substantially perform his duties;

the willful engaging by the executive officer in illegal conduct or gross misconduct that is materially and demonstrably injurious to GenVec;

personal dishonesty or breach of fiduciary duty to GenVec that results in or was intended to result in personal profit to the executive officer at the expense of GenVec; or

the willful violation of any law, rule, regulation, or order (other than traffic violations, misdemeanors or similar offenses) in a manner that is materially and demonstrably injurious to GenVec.

Each salary continuation agreement includes (i) a mutual non-disparagement restriction in perpetuity, (ii) a non-compete restriction during employment and for a period of 12 months following termination of employment, (iii) a non-solicitation of employees restriction for a period of 12 months following termination of employment, and (iv) a confidentiality restriction in perpetuity.

Change in Control Agreement

Under the terms of the change in control agreement with Mr. Swirsky, if GenVec terminates the employment of Mr. Swirsky without cause (as defined in the salary continuation agreements described above) and other than as a result of his death or disability, or if Mr. Swirsky resigns for good reason (as defined below), in each case within the two-year period following a change in control (such as the merger), GenVec will provide Mr. Swirsky with (i) a lump sum cash severance payment equal to (A) 18, multiplied by (B) the sum of his monthly base salary and average monthly bonus, (ii) continued life insurance and health insurance for 18 months, (iii) a lump sum cash payment equal the product of (a) Mr. Swirsky s highest annual base salary for the year of

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termination, *divided by* 12, *multiplied by* (b) Mr. Swirsky s target bonus percentage, *multiplied by* (c) the number of months (including fractions) of service during the year of termination, and (iv) to the extent that the preceding fiscal year s bonus has not yet been determined and paid, a lump sum cash payment equal to (a) Mr. Swirsky s highest annual base salary for the preceding fiscal year, *multiplied by* (b) Mr. Swirsky s highest target bonus percentage for the preceding fiscal year. The payments are payable on the date of termination, but if such payments are not determinable as of the date of termination, GenVec will pay an estimated minimum amount of such payments on the date of termination and will pay the remainder (together with interest) as soon as practicable but no later than 30 days following the date of termination.

For purposes of Sections 280G and 4999 of the Code, the change in control agreement includes a modified cutback provision and an excise tax gross-up payment. In the event that it is determined that any of the payments and benefits described above or any other payments would subject Mr. Swirsky to excise taxes under Section 4999 of the Code because such payments and benefits due would constitute a parachute payment under Section 280G of the Code, payments to Mr. Swirsky under the change in control agreement will be reduced so that no portion is subject to the excise taxes. But, if the foregoing reduction would exceed $10,000, GenVec will not reduce the payments and instead will pay to Mr. Swirsky an additional amount equal to the excise tax on the payments and benefits, which additional amount we refer to as the gross-up payment, plus an amount equal to any federal income taxes and FICA and Medicare withholding taxes payable on such gross-up payment. Based on the estimates and assumptions discussed below, GenVec currently estimates that Mr. Swirsky will not be eligible to receive a gross-up payment in connection with the merger.

In addition, the change in control agreement provides for GenVec s reimbursement of certain legal costs incurred by Mr. Swirsky related to the enforcement of the agreement or in connection with any tax audit or proceeding to the extent applicable to the application of Section 4999 of the Code and the payments or benefits under the change in control agreement.

Under the terms of the change in control agreement, good reason is generally defined as the occurrence of any of the following events without the consent of Mr. Swirsky, unless, if correctable, such circumstances are fully corrected with 30 days of the notice of resignation given by Mr. Swirsky in respect thereof (which notice of resignation must be given within 90 days of the occurrence):

- the assignment to Mr. Swirsky of any duties inconsistent in any material respect with his position, authority, duties, or responsibilities, as they were immediately prior to the change in control;
- the diminution in any material respect in Mr. Swirsky s position, authority, duties, or responsibilities as they were immediately prior to a change in control;
- a material reduction by GenVec in Mr. Swirsky s annual base salary;
- a relocation of more than 35 miles from where Mr. Swirsky s office or location was immediately prior to a change in control;

the failure by GenVec to continue any compensation plan in which Mr. Swirsky participates immediately prior to a change in control that is material to Mr. Swirsky s total compensation (unless an equitable arrangement has been made with respect to such plan), or the continuation of such plan under materially less favorable terms than existed immediately prior to a change in control;

the failure by GenVec to pay to Mr. Swirsky any material deferred compensation when due under any deferred compensation plan or agreement applicable to Mr. Swirsky; or

a material breach by GenVec of the terms and provisions of the change in control agreement.

To constitute good reason for purposes of the change in control agreement, the resignation by Mr. Swirsky must occur within two years following the initial occurrence of the event constituting the good reason.

To the extent that Mr. Swirsky becomes entitled to benefits under the change in control agreement, his salary continuation agreement (described above) is superseded, and he will not receive any benefit under that agreement.

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Severance Plan

Under the terms of the merger agreement, prior to the consummation of the merger, GenVec will adopt a severance plan, in which all employees of GenVec as of the consummation of the merger, including Mr. Lambert but excluding Mr. Swirsky and Drs. Brough and Butman (who are already parties to a salary continuation agreement and/or a change in control agreement with GenVec, as discussed above), will be eligible to participate.

Under the terms of the severance plan, if an eligible employee s employment is terminated by GenVec, Intrexon, or one of their affiliates without cause (as defined in the salary continuation agreements described above, with the use of employee instead of executive officer) or if the eligible employee resigns due to the material reduction of his or her base salary or wages, in each case within the one year period following the consummation of the merger, the eligible employee shall be eligible to receive (i) a lump sum cash payment equal to not less than 12 weeks of base salary or wages, to be paid in the next regularly-scheduled payroll cycle following the employee s termination of employment (but no later than 30 days following such termination) and (ii) fully employer-subsidized medical plan continuation for not less than 12 weeks.

Indemnification and Insurance

Pursuant to the terms of the merger agreement, GenVec s current and former directors and executive officers and each employee who serves as a fiduciary of GenVec s employee benefit plan will be entitled to certain ongoing indemnification following the merger. In addition, GenVec s current directors and executive officers will be entitled to certain coverage following the merger under directors and officers liability insurance and fiduciary liability policies to be purchased by GenVec prior to the effective time of the merger. Such indemnification and insurance coverage is further described in the section entitled The merger agreement Covenants Indemnification and insurance.

Employment Offers by Intrexon

During the discussion of a proposed transaction, representatives of Intrexon expressed their respect for the GenVec team, and indicated that Intrexon would need assistance upon completion of the merger. However, prior to the discussions referred to below, representatives of Intrexon did not engage in any discussions with GenVec s officers regarding future employment with Intrexon, and no commitments for future employment were made to any of these individuals on behalf of Intrexon.

On April 20, 2017, Intrexon made employment offers to Drs. Brough and Butman. Dr. Brough s offer letter, for the position of Vice President, Research, provides for an annual base salary of $310,650, and a potential annual bonus of 30% of Dr. Brough s annual base salary, on achievement of certain performance criteria. Under the terms of the offer letter, Dr. Brough will be granted a stock option award of 40,000 shares of Intrexon common stock, which will vest in annual increments of 25%, over a four-year period from the date of hire. The grant will have a strike price based on the closing price per share of common stock on Dr. Brough s date of hire. Upon hire, Dr. Brough will also receive a signing bonus of $20,000. Dr. Butman s offer letter, for the position of Vice President, Development, provides for an annual base salary of $285,000, and a potential annual bonus of 30% of Dr. Butman s annual base salary, on achievement of certain performance criteria. Under the terms of the offer letter, Dr. Butman will be granted a stock option award of 25,000 shares of Intrexon common stock, which will vest in annual increments of 25%, over a four-year period from the date of hire. The grant will have a strike price based on the closing price per share of common stock on Dr. Butman s date of hire. The salary continuation agreements with each of Drs. Brough and Butman are not expected to be continued after completion of the merger, such that each will cease to be in effect 12 months after completion of the merger.

In addition, on April 19, 2017, Intrexon notified Mr. Swirsky that it does not anticipate that he will continue as an employee of Intrexon or the surviving company upon completion of the merger. As of the date of this proxy statement/prospectus, Intrexon has notified Mr. Lambert that it intends to offer employment to him on terms substantially equivalent to his current terms following the completion of the merger.

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Directors of GenVec After the Merger

No members of the GenVec board of directors are expected to continue as directors of the surviving company upon completion of the merger, and no members of the GenVec board of directors are expected to join the Intrexon board of directors.

Quantification of potential payments to GenVec executive officers in connection with the merger

The following table and related footnotes set forth information required by Item 402(t) of Regulation S-K regarding certain compensation that each of GenVec s named executive officers may receive that is based on, or that otherwise relates to, the merger. For purposes of this disclosure, GenVec s named executive officers consist of Mr. Swirsky and Drs. Brough and Butman. The figures in the table are estimated based on compensation and benefit levels as of the date of this proxy statement/prospectus and an assumed effective date of June 30, 2017 for both the merger and the termination of the named executive officer s employment. The amounts reported below are estimates based on multiple assumptions that may or may not actually occur or be accurate on the relevant date, including an assumption that the employment of each of GenVec s named executive officers will terminate upon consummation of the merger and other assumptions described in this proxy statement/prospectus. The actual amounts, if any, to be received by a named executive officer may materially differ from the amounts set forth below. The merger-related compensation payable to GenVec s named executive officers is subject to a non-binding advisory vote of GenVec s shareholders, as described under the section of this proxy statement/prospectus captioned Advisory vote on merger-related compensation. For additional details regarding the terms of the payments described below, see the discussion under the caption Interests of GenVec s directors and executive officers in the merger. All share amounts relating to GenVec stock options, and the exercise prices of each such option, set forth in the following table or the notes thereto have been retroactively adjusted to reflect the reverse stock split.

Golden Parachute Compensation

Name	Cash ($)	Equity ($)[1]	Perquisites / Benefits ($)[2]	Tax Reimbursements ($)[3]	Total ($)[4]
Douglas J. Swirsky	998,750[5] [6]	13,923	27,465	0	1,040,138
Douglas E. Brough	357,248[7]	7,240	32,795	0	397,283
Bryan T. Butman	327,750[8]	3,342	35,081	0	366,173

(1) In accordance with the terms of the merger agreement as described under Interests of GenVec s directors and executive officers in the merger, all outstanding, unvested GenVec stock options held by the named executive officers shall fully vest in connection with the merger. All amounts in this column are determined by multiplying (i) the number of GenVec stock options that will be accelerated in connection with the merger, by (ii) the excess of (a) the per share price of GenVec common stock of $6.41 (which, as required by applicable SEC rules, is the average closing market price of GenVec common stock over the first five business days following the public announcement of the merger prior to the market opening on January 24, 2017) over (b) the per share exercise price of each such accelerated GenVec stock option. The amount shown is based on the following holdings of GenVec stock options that would be accelerated and that have a per share exercise price less than $6.41: (i) 17,188 GenVec stock options for Mr. Swirsky, with an exercise price per share of $5.60, (ii) 8,938 GenVec stock options for Dr. Brough, with an exercise price per share of $5.60, and (iii) 4,125 GenVec stock options for

Dr. Butman, with an exercise price per share of $5.60. No value has been attributed to the acceleration of out of the money GenVec stock options (that is, where the per share exercise price of GenVec stock options equals or exceeds the per share price of GenVec common stock of $6.41). Each amount is attributable to a single trigger arrangement. The actual amounts, if any, that would be realized by the named executive officers upon exercise of stock options in connection with the merger will be dependent on the value of the stock options at the time of exercise.

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(2) In accordance with the terms of Mr. Swirsky s change in control agreement as described under Interests of GenVec directors and executive officers in the merger, assuming for purposes of amounts reported in the table that Mr. Swirsky s employment is terminated without cause or that Mr. Swirsky resigns for good reason upon consummation of the merger (or otherwise within the two-year period following the merger), this amount represents the gross premiums to be paid by GenVec to provide Mr. Swirsky with continued life and health insurance substantially similar to the coverage provided as of the date of this proxy statement/prospectus for an 18-month period. In accordance with the terms of Dr. Brough s and Dr. Butman s salary continuation agreements as described under Interests of GenVec s directors and executive officers in the merger, assuming for purposes of amounts reported in the table that Dr. Brough s and Dr. Butman s employment is terminated without cause upon consummation of the merger (or otherwise following the merger), this amount represents the gross premiums to be paid by GenVec to provide the named executive officer with continued life and health insurance substantially similar to the coverage provided as of the date of this proxy statement/prospectus for a 12-month period. Each amount is attributable to a double trigger arrangement.

(3) In accordance with the terms of Mr. Swirsky s change in control agreement as described under Interests of GenVec directors and executive officers in the merger, Mr. Swirsky could become eligible to receive a gross-up payment in certain situations. Based on the estimates and assumptions listed above and throughout, GenVec currently estimates that Mr. Swirsky will not trigger, and thus will not be eligible to receive, a gross-up payment in connection with the merger.

(4) Portions of the total amounts reported are attributable to single trigger arrangements and portions are attributable to double trigger arrangements, as follows: (i) Mr. Swirsky - $13,923 attributable to single trigger arrangements and $1,026,215 attributable to double trigger arrangements, (ii) Dr. Brough - $7,240 attributable to single trigger arrangements and $390,043 attributable to double trigger arrangements, and (iii) Dr. Butman - $3,342 attributable to single trigger arrangements and $362,831 attributable to double trigger arrangements.

(5) In accordance with the terms of Mr. Swirsky s change in control agreement as described under Interests of GenVec directors and executive officers in the merger, assuming for purposes of amounts reported in the table that Mr. Swirsky s employment is terminated without cause or Mr. Swirsky resigns for good reason upon consummation of the merger on June 30, 2017 (or otherwise within the two-year period following the merger), this amount represents the sum of: (i) a lump sum cash payment of $892,500, which is equal to (a) 18, *multiplied by* (b) the sum of Mr. Swirsky s monthly base salary and average monthly bonus, and (ii) a lump sum cash payment of $106,250, which represents the product of (a) Mr. Swirsky s current annual base salary of $425,000, *divided by* 12, *multiplied by* (b) Mr. Swirsky s current target bonus percentage of 50%, *multiplied by* (c) the number of months of service during 2017 through June 30, 2017. Each amount is attributable to a double trigger arrangement. This amount does not include (i) Mr. Swirsky s annual base salary or other benefits earned and accrued prior to the date of termination or (ii) an amount attributable to Mr. Swirsky s bonus for the preceding fiscal year because such bonus was paid on February 15, 2017.

(6) This amount assumes that the applicable amount is paid on Mr. Swirsky s date of termination and excludes any potential interest payments. Pursuant to Mr. Swirsky s change in control agreement, the payments are payable on the date of termination, but if such payments are not determinable as of the date of termination, GenVec shall pay an estimated minimum amount of such payments on the date of termination and shall pay the remainder (together with interest) as soon as practicable but no later than 30 days following the date of termination.

(7) In accordance with the terms of Dr. Brough s salary continuation agreement as described under Interests of GenVec directors and executive officers in the merger, assuming for purposes of amounts reported in the table that Dr. Brough s employment is terminated without cause upon consummation of the merger on June 30, 2017 (or otherwise following the merger), this amount represents the sum of: (i) salary continuation payments of $310,650, which is equal to 12 months of Dr. Brough s current annual base salary, and (ii) a lump sum cash payment of $46,598, which represents the product of (a) Dr. Brough s 2016 annual bonus payment of $93,195, *divided by* 12, *multiplied by* (b) the number of months of service during 2017 through June 30, 2017. Each

amount is attributable to a double trigger arrangement. This amount does not include Dr. Brough s annual base salary or other benefits earned and accrued prior to the date of termination.

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(8) In accordance with the terms of Dr. Butman s salary continuation agreement as described under Interests of GenVec directors and executive officers in the merger, assuming for purposes of amounts reported in the table that Dr. Butman s employment is terminated without cause upon consummation of the merger on June 30, 2017 (or otherwise following the merger), this amount represents the sum of: (i) salary continuation payments of $285,000, which is equal to 12 months of Dr. Butman s current annual base salary, and (ii) a lump sum cash payment of $42,750, which represents the product of (a) Dr. Butman s 2016 annual bonus payment of $85,500, *divided by* 12, *multiplied by* (b) the number of months of service during 2017 through June 30, 2017. Each amount is attributable to a double trigger arrangement. This amount does not include Dr. Butman s annual base salary or other benefits earned and accrued prior to the date of termination.

Intrexon s reasons for the merger

The board of directors of Intrexon unanimously approved the merger agreement and the transactions contemplated by the merger agreement, including the merger. In evaluating the merger agreement and the transactions contemplated thereby, including the merger, the board of directors of Intrexon consulted with the management of Intrexon and outside legal advisors for Intrexon.

In determining to approve the merger agreement and the transactions contemplated thereby, including the merger, the board of directors of Intrexon considered a number of factors, including the following:

- the belief that the acquisition of GenVec fits within Intrexon s strategy to grow its business and further develop synthetic biology technologies and to seek to develop and commercialize innovative products;
- the belief that Intrexon would be able to use its existing expertise in order to develop GenVec s technology;
- the substantial experience of GenVec s management team and employees in designing, testing and manufacturing adenoviral-based product candidates;
- the fact that the CPRs will require Intrexon to pay additional consideration only if milestone and/or royalty payments are received from Novartis by Intrexon or GenVec under the NVS License Agreement;
- the overall terms and conditions of the merger agreement; and
- current industry, economic and market conditions and trends, including Intrexon s and GenVec s respective positions in the market.

The board of directors of Intrexon also considered a number of potentially negative factors in its deliberations regarding the merger, including the following:

- the ability of Intrexon to integrate GenVec s operations with Intrexon s existing operations;

the possible disruption to Intrexon s business as a result of the merger, including the time necessary from members of Intrexon s management team and the costs associated with the merger;

the impact of the announcement of the merger agreement and the transactions contemplated thereby, including the merger, on the market prices for Intrexon common stock and GenVec common stock as well as their respective businesses and operations;

the risks that the potential benefits, synergies and costs savings sought in the merger may not be realized or may not be realized within the expected time frame; and

the other risks set forth in the section entitled Risk factors.

The board of directors of Intrexon conducted an overall analysis of the factors described above, including through discussions with, and inquiry of, the management of Intrexon and the legal advisors to Intrexon

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regarding certain of the factors described above. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, the board of directors of Intrexon did not find it useful, and did not attempt, to quantify, rank, or otherwise assign any relative or specific weights to the factors that it considered in reaching its determination to approve the merger agreement and the transactions contemplated thereby, including the merger. Individual members of the board of directors of Intrexon may have given differing weights to the foregoing factors.

Directors and management after the merger

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

Accounting treatment

The merger will be accounted for using the acquisition method of accounting for business combinations. Intrexon will record net tangible and identifiable intangible assets acquired and liabilities assumed from GenVec at their respective fair values at the date of the completion of the merger. Any excess of the purchase price over the net fair value of such assets and liabilities will be recorded as goodwill.

The financial condition and results of operations of Intrexon after completion of the merger will reflect GenVec s balances and results after completion of the transaction but will not be restated retroactively to reflect the historical financial condition or results of operations of GenVec. The earnings of Intrexon following the completion of the merger will reflect acquisition accounting adjustments, including the effect of changes in the carrying value for assets and liabilities on depreciation and amortization expense. Intangible assets with indefinite useful lives and goodwill will not be amortized but will be tested for impairment at least annually, and all long-lived assets, including goodwill, will be tested for impairment when certain indicators are present. If in the future, Intrexon determines that tangible or intangible assets (including goodwill) are impaired, Intrexon would record an impairment charge at that time.

Regulatory approvals required for the merger

Intrexon and GenVec are not aware of any material governmental approvals, waivers or actions that are required to complete the merger. If any such governmental approvals, waivers or actions are required, Intrexon and GenVec have agreed to use reasonable best efforts to obtain those approvals, waivers or actions. There can be no assurance, however, that any waivers, approvals or actions will be obtained.

In addition, at any time before or after the completion of the merger, any state or foreign country could take action to enjoin the merger under antitrust laws as it deems necessary or desirable in the public interest, or any private party could seek to enjoin the merger on anti-competitive grounds. Although the parties believe that completion of the merger would not violate any antitrust law, there can be no assurance that a challenge to the merger on antitrust grounds will not be made or, if a challenge is made, what the result will be. Intrexon and GenVec have determined that no filing under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 is required in connection with the proposed merger.

Exchange of shares in the merger

Intrexon has appointed AST as its exchange agent to handle the exchange of shares of GenVec common stock for the shares of Intrexon common stock (and, if applicable, cash in lieu of fractional shares of Intrexon common stock) that each GenVec shareholder is entitled to receive under the merger agreement. Promptly following the effective time of

the merger, the exchange agent will mail to each person that was, as of immediately prior to the effective time, a record holder of GenVec common stock a letter of transmittal and instructions for effecting the exchange of GenVec common stock certificates or book-entry shares for the merger consideration.

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Upon (i) in the case of shares of GenVec common stock represented by certificates, surrender of such certificates along with the executed letter of transmittal and any other documents described in the instructions, (ii) in the case of book-entry shares of GenVec common stock (other than book-entry shares held through The Depository Trust Company, referred to herein as DTC), receipt of an executed letter of transmittal, or (iii) in the case of book-entry shares held through DTC, receipt of an agent s message, a GenVec shareholder will receive (1) the per share stock consideration, (2) one CPR for each share of GenVec stock surrendered, and (3) if applicable, cash in lieu of fractional shares of Intrexon common stock (as well as any dividends or distributions with respect to Intrexon common stock to which such holder is entitled pursuant to the merger agreement). The shares of Intrexon common stock you receive in the merger will be issued in book-entry form, unless you request a physical certificate or a physical certificate is otherwise required under applicable law. The CPRs you receive in the merger will not be evidenced by a certificate or other instrument, but will be recorded in a register maintained by the rights agent under the contingent payment rights agreement. The exchange agent and Intrexon are entitled to deduct and withhold any applicable taxes from any merger consideration that would otherwise be payable.

After the effective time of the merger, GenVec will not register any transfers of the shares of GenVec common stock. Shares of GenVec common stock will no longer be outstanding, will automatically be cancelled, and will cease to exist. Certificates or evidence of shares in book-entry form that, in each case, previously represented shares of GenVec common stock will represent only the right to receive the merger consideration as described above (or, in the case of shares with respect to which appraisal rights are properly exercised, the right to receive payment of the fair value of such shares in accordance with and to the extent provided by Section 262 of the DGCL, as further described in the section entitled Appraisal rights).

GenVec shareholders should not return their stock certificates with the enclosed proxy card and should not forward stock certificates to the exchange agent without a letter of transmittal.

Appraisal rights

GenVec shareholders who do not vote in favor of the merger proposal and who precisely follow certain procedural steps will be entitled to appraisal rights under Section 262 of the DGCL. For more information regarding appraisal rights, see the section entitled Appraisal rights. In addition, a copy of Section 262 of the DGCL is attached as Annex D to this proxy statement.

Listing of Intrexon common stock

Intrexon s common stock currently trades on the NYSE under the stock symbol XON. It is a condition to the completion of the merger that the Intrexon common stock issuable in the merger be approved for listing on the NYSE, subject to official notice of issuance. Intrexon has agreed to use its reasonable best efforts to cause the shares of Intrexon common stock issuable in connection with the merger to be approved for listing on the NYSE and expects to obtain the NYSE s approval to list such shares prior to completion of the merger, subject to official notice of issuance.

Delisting and deregistration of GenVec common stock

If the merger is completed, the GenVec common stock will be delisted from NASDAQ and deregistered under the Exchange Act, and GenVec will no longer file periodic reports with the SEC relating to the GenVec common stock.

Restrictions on the shares of Intrexon common stock received in the merger

The shares of Intrexon common stock to be issued in connection with the merger will be freely transferable under the Securities Act and the Exchange Act, except for shares issued to any shareholder who may be deemed to be an affiliate of Intrexon for purposes of Rule 144 under the Securities Act. Persons who may be deemed to be affiliates include individuals or entities that control, are controlled by, or under the common control with Intrexon and may include the executive officers, directors and significant shareholders of Intrexon.

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Certain financial projections of GenVec s management

GenVec does not, as a matter of course, publicly release long-term projections regarding its expectations of future financial performance, given, among other things, the uncertainty of the underlying assumptions and estimates. However, for internal purposes and in connection with the process leading up to entering into the merger agreement, GenVec s management prepared certain projections regarding the anticipated future cash flows of GenVec on a stand-alone, pre-transaction basis for the fiscal years ending December 31, 2016 through 2019. These projections were prepared and delivered on November 10, 2016 and are referred to herein as the GenVec projections.

The GenVec projections were not prepared with a view toward public disclosure or with a view toward complying with the published guidelines of the SEC, the guidelines established by the American Institute of Certified Public Accountants with respect to prospective financial information, or U.S. GAAP. However, in the view of GenVec s management, such projections were prepared on a reasonable basis, reflect the best then-available estimates and judgments, and present, to the best of management s knowledge and belief, the expected course of action and the expected future cash flows of GenVec on a stand-alone basis, provided, however, that management assumed, rather than expected, that an additional milestone under the NVS License Agreement would be achieved in 2018. Because the GenVec projections were prepared on a stand-alone basis without giving effect to the merger, the GenVec projections do not give effect to the merger or any changes to GenVec s operations or strategy that may be implemented after the consummation of the merger, including potential synergies realized as a result of the merger or any costs related to the merger. These projections are not fact and should not be relied upon as necessarily indicative of actual future performance or results, and readers of this proxy statement/prospectus are cautioned not to place undue reliance on the GenVec projections.

No independent registered public accounting firm has examined, compiled or performed any procedures with respect to the GenVec projections and, accordingly, no independent registered public accounting firm expresses an opinion or any other form of assurance with respect to such projections or the achievability of the performance or results reflected therein. No independent registered public accounting firm assumes any responsibility for such projections. The reports of independent registered public accounting firms included in (or incorporated by reference into) this proxy statement/prospectus relate only to GenVec s and Intrexon s historical financial information, respectively, and no such report extends to the GenVec projections or should be read to do so.

GenVec s management provided the GenVec projections to Intrexon s management in connection with Intrexon s due diligence review of GenVec. A summary of the GenVec projections is included below not to influence GenVec shareholders decision on whether to vote in favor of the merger proposal, but rather to give shareholders access to certain non-public unaudited projections that were provided to Intrexon in connection with the merger. While the GenVec projections were provided to Intrexon s management, the board of directors of Intrexon did not consider the GenVec projections to be a significant factor in its overall analysis of the merger. GenVec cautions that these projections are subjective in many respects and uncertainties are inherent in prospective financial information of any kind. Although the GenVec financial projections have been prepared in good faith, no assurance can be given regarding future events. Neither GenVec nor Intrexon nor any of their respective affiliates, officers, directors, advisors or other representatives has made or makes any representation or can give any assurance to any shareholder or any other person regarding the ultimate performance of GenVec, Intrexon or the combined companies.

The unaudited prospective financial information included in the GenVec projections covers multiple years. Such information, by its nature, becomes less predictive with each successive year. In addition, GenVec has not updated or otherwise revised, and does not intend to update or otherwise revise, such prospective financial information to reflect circumstances existing or arising since its preparation or to reflect the occurrence of unanticipated events, even where any or all of the underlying assumptions are shown to be in error, except to the extent required by law. GenVec also

does not intend to update or revise such prospective financial information to reflect changes in general economic or industry conditions. Since the date the GenVec projections were prepared,

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GenVec has made publicly available its audited financial statements, including an audited statement of cash flows, for the fiscal year ended December 31, 2016. Such financial statements are included in this proxy statement/prospectus; you are encouraged to review such audited financial statements.

The internal financial forecasts of GenVec, which were used as a basis for preparing the GenVec projections, are inherently uncertain. Although considered reasonable by GenVec s management as of the date of their preparation, such internal financial forecasts are subject to a wide variety of significant business, economic, competitive and regulatory risks and uncertainties that could cause actual cash flows to differ materially from those contained in the GenVec projections. Although the GenVec projections were prepared with numerical specificity, such projections reflect numerous and varying assumptions made by the management of GenVec, including various estimates and assumptions that may not be realized, and are subject to significant variables, uncertainties and contingencies, all of which are difficult or impossible to predict and many of which are beyond the control of GenVec, Intrexon and the combined companies. The risk that these uncertainties and contingencies could cause the estimates or assumptions not to reflect actual performance or results is further increased given the duration in the future over which these estimates and assumptions apply. The estimates and assumptions in early periods have a compounding effect on the projections shown for later periods. Thus, any failure of an estimate or assumption to be reflective of actual performance or results in an early period would have a greater effect on projected cash flows failing to be reflective of actual events in later periods. Important factors that may affect or cause the information below to materially vary from actual performance or results include, but are not limited to, industry performance, general business, economic, political, regulatory, market and financial conditions, and other matters such as those referenced in the sections entitled Cautionary note regarding forward-looking statements and Risk factors elsewhere in this proxy statement/prospectus. These projections are forward-looking statements, and in light of the uncertainties inherent in forward-looking information of any kind, GenVec cautions you against relying on this information. There can be no assurance that the assumptions made in preparing the internal financial forecasts upon which the projections set forth below were based will be realized; that the prospective cash flows are necessarily indicative of the future performance of GenVec, Intrexon or the combined companies; or that actual cash flows will not differ materially from those presented in the GenVec projections. Inclusion of the GenVec projections in this proxy statement/prospectus should not be regarded as a representation by any person that the cash flows reflected in the GenVec projections will actually be realized or will not be significantly lower or higher than actual cash flows.

Summary of GenVec Projections

(in dollars)

	Projected Total 2016	Projected Total 2017	Projected Total 2018	Projected Total 2019
Revenue	656,136[1]	500,000	5,500,000[2]	500,000
Expenses	(6,842,837)	(6,520,663)	(6,595,740)	(6,745,170)
Financing Activity	4,515,987			
Cash Burn[3]	(1,670,714)	(6,020,663)	(1,095,740)	(6,245,170)
Beginning Cash and Cash Equivalents	8,773,009	7,102,295	1,081,632	(14,108)
Ending Cash and Cash Equivalents	7,102,295	1,081,632	(14,108)	(6,259,277)

(1) Projected total revenue in 2016 includes $5,325 from sales of equipment.
(2) Projected total revenue in 2018 includes an assumed $5 million from receipt of a milestone payment under the NVS License Agreement.
(3) Cash burn is a non-GAAP financial measure. For purposes of GenVec management s projections, GenVec defined this measure to mean the net increase (or decrease) in cash and cash equivalents (as determined in accordance with GAAP).

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In preparing the projections summarized above, GenVec s management assumed, among other things, that GenVec would continue to receive annual revenue from grants, as well as annual revenue from financial support under its programs with Novartis, that would generally be consistent with prior receipts. GenVec s management also assumed that an additional milestone under the NVS License Agreement would be achieved in 2018. These assumptions may be beyond the control of GenVec. In addition, GenVec s management did not include in the GenVec projections any cash flows relating to possible new collaborations that were being explored at the time the GenVec projections were prepared, including because such cash flows were considered too uncertain and speculative to estimate.

The projections summarized above were prepared by GenVec s management for internal purposes and in connection with the process leading up to entering into the merger agreement. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP.

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GENVEC HAS NOT UPDATED OR REVISED, NOR DOES IT INTEND TO UPDATE OR REVISE, THESE PROJECTIONS TO REFLECT CIRCUMSTANCES EXISTING SINCE THEIR PREPARATION OR TO REFLECT THE OCCURRENCE OF UNANTICIPATED EVENTS EVEN IN THE EVENT THAT ANY OR ALL OF THE UNDERLYING ASSUMPTIONS ARE SHOWN TO BE IN ERROR, EXCEPT TO THE EXTENT REQUIRED BY LAW.

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The merger agreement

The following description describes the material terms of the merger agreement. This description does not purport to be complete and may not contain all of the information about the merger agreement that is important to you. The rights and obligations of the parties are governed by the express terms and conditions of the merger agreement and not by this description or any other information contained in this proxy statement/prospectus. This description of the merger agreement is qualified in its entirety by reference to the full text of the merger agreement, which is attached as Annex A to this proxy statement/prospectus and is incorporated herein by reference. The merger agreement has been included to provide you with information regarding its terms. GenVec encourages you to read the entire merger agreement, as well as this proxy statement/prospectus, before making any decisions regarding the merger.

The merger

Each of the GenVec board of directors and Intrexon board of directors has approved the merger agreement, which provides that, at the closing of the proposed transactions contemplated by the merger agreement, Merger Sub will be merged with and into GenVec. GenVec will continue as the surviving corporation of the merger, but it will become a wholly owned subsidiary of Intrexon. As a result, following the merger, GenVec will no longer be a publicly traded corporation.

Merger consideration

At the effective time of the merger, each share of GenVec common stock (other than shares with respect to which appraisal rights are properly exercised or shares owned by Intrexon, Merger Sub or GenVec) will be converted into the right to receive consideration equal to (i) 0.297 shares of Intrexon common stock, subject to adjustment as described below, referred to herein as the exchange ratio, and (ii) one CPR (as described more fully below under the section entitled Contingent payment rights agreement).

GenVec shareholders will not receive any fractional shares of Intrexon common stock in the merger. Instead, each GenVec shareholder otherwise entitled to a fraction of a share of Intrexon common stock will be entitled to receive in cash the dollar amount, without interest, determined by multiplying such fraction by the last reported sale price of Intrexon common stock on the NYSE on the last complete trading day prior to the effective time of the merger.

The exchange ratio and merger consideration are subject to adjustment to reflect (i) the effect of any stock split, reverse stock split, stock dividend (including any dividend or distribution of securities convertible into or exchangeable for shares of GenVec s common stock), recapitalization, reclassification or other similar change with respect to GenVec common stock, or (ii) any reduction in the assets or property of Intrexon or any of its subsidiaries resulting from any direct or indirect distribution of such assets or property to the shareholders of Intrexon, in each case, occurring after the date of the merger agreement but before the effective time of the merger.

Treatment of GenVec stock options and warrants

Treatment of stock options

Each outstanding, unvested GenVec stock option will fully vest upon the approval of the merger proposal by the GenVec shareholders. In connection with the merger, each outstanding GenVec stock option may be exercised (including net exercise) for a period of 15 days prior to the effective time of the merger. Each share of GenVec common stock resulting from the exercise of any GenVec stock option during such time will be treated as a share of GenVec common stock issued and outstanding immediately prior to the effective time of the merger, and will be

eligible to receive the merger consideration in accordance with the terms of the merger agreement. As of the effective time of the merger, each outstanding unexercised GenVec stock option shall be canceled for no consideration.

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Treatment of warrants

At the effective time of the merger, each outstanding, unexpired and unexercised warrant to purchase shares of GenVec common stock will be assumed by Intrexon and converted into a warrant to purchase, at an aggregate exercise price equal to the aggregate exercise price of the warrant as of immediately prior to the effective time of the merger, and in lieu of the shares of GenVec common stock otherwise issuable upon exercise of such warrant, the merger consideration that would have been receivable upon consummation of the merger by the holder of such warrant if such warrant had been exercised immediately prior to the effective time of the merger. Specifically, each such warrant to purchase shares of GenVec common stock will be converted into a warrant to purchase (i) a number of shares of Intrexon common stock equal to the product of (a) the exchange ratio and (b) the number of shares of GenVec common stock underlying such warrant, and (ii) a number of CPRs (as described more fully below under the section entitled Contingent payment rights agreement) equal to the number of shares of GenVec common stock underlying such warrant. Warrantholders will not be entitled to receive CPRs until they exercise their warrants, nor will warrantholders be entitled to any portion of the amounts payable to CPR holders prior to the date on which such warrantholders exercise their warrants and purchase the CPRs subject to them. Please see the section entitled Contingent payment rights agreement for a discussion of the contingent payment period under, and term of, the contingent payment rights agreement. The other pre-existing terms of the warrants will continue to apply in accordance with their terms following the merger.

Appraisal rights

GenVec shareholders who do not vote in favor of the merger proposal and who precisely follow certain procedural steps will be entitled to appraisal rights under Section 262 of the DGCL. For more information regarding appraisal rights, see the section entitled Appraisal rights. In addition, a copy of Section 262 of the DGCL is attached as Annex D to this proxy statement.

A condition to Intrexon s and Merger Sub s obligation to complete the merger is that holders representing no more than 20% of GenVec s outstanding shares of common stock have exercised statutory rights of appraisal under Delaware law.

Completion of the merger

The merger agreement requires the parties to complete the merger after all of the conditions to the completion of the merger contained in the merger agreement are satisfied or waived, including the approval of the merger proposal by the shareholders of GenVec. The merger will become effective upon the filing of the certificate of merger with the Secretary of State of the State of Delaware, or at such later time as is agreed to by Intrexon, Merger Sub and GenVec and specified in the certificate of merger.

Intrexon and GenVec expect to complete the merger during the second quarter of 2017 if the approval of the merger proposal is obtained, assuming the other conditions to the consummation of the merger that are set forth in the merger agreement are satisfied or waived. However, it is possible that the merger will not be consummated within that timeframe or at all.

Conversion of shares; exchange of certificates

The merger agreement provides that Intrexon will select a bank or trust company, reasonably acceptable to GenVec, to act as the exchange agent. Intrexon has appointed AST to act as exchange agent. The merger agreement provides that at or prior to the effective time of the merger, Intrexon will deposit with the exchange agent evidence of a sufficient

number of shares of Intrexon common stock to provide for the issuance of the stock consideration, and a sufficient amount of cash to make payments in lieu of fractional shares to which holders of GenVec common stock are entitled pursuant to the terms of the merger agreement. In addition, the merger agreement provides that after the effective time of the merger, until such time as holders of GenVec

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common stock surrender their shares of GenVec common stock in exchange for shares of Intrexon common stock, Intrexon will deposit with the exchange agent any dividends or other distributions with respect to Intrexon common stock to which such holders are entitled pursuant to the terms of the merger agreement. The exchange agent will be entitled to deduct and withhold from the cash amounts payable to any GenVec shareholder the amounts it is required to deduct and withhold under any federal, state, local or foreign tax law. If the exchange agent withholds any amounts and remits them to applicable tax authorities, these amounts will be treated for all purposes of the merger as having been paid to the shareholders from whom they were withheld.

Promptly, but not later than three business days, following the effective time of the merger, the exchange agent will mail to each person that was, as of immediately prior to the effective time, a record holder of GenVec common stock a letter of transmittal and instructions for surrendering and exchanging the record holder s GenVec stock certificates or book-entry shares. Upon (i) in the case of shares of GenVec common stock represented by a certificate, surrender of such certificate for exchange to the exchange agent, together with a duly signed and completed letter of transmittal and such other documents as may reasonably be required pursuant to the instructions, (ii) in the case of book-entry shares of GenVec common stock (other than book-entry shares held through DTC), receipt by the exchange agent of a duly signed and completed letter of transmittal, or (iii) in the case of book-entry shares of GenVec common stock held through DTC, receipt of an agent s message , the holder of the GenVec stock certificate or book-entry shares will be entitled to receive merger consideration and any other amounts to which such holder is entitled for fractional shares of Intrexon common stock or in respect of any dividends or other distributions payable with respect to Intrexon common stock as set forth in the merger agreement.

After the effective time of the merger, shares of GenVec common stock will no longer be outstanding, will automatically be cancelled, and will cease to exist. All holders of shares of GenVec common stock (whether such shares are represented by certificates or held in book-entry form) that were outstanding immediately prior to the completion of the merger will cease to have any rights as shareholders of GenVec, other than the right to receive the merger consideration and cash in lieu of fractional shares of Intrexon common stock (or, in the alternative, the appraisal rights described under the heading Appraisal rights, if so elected), as well as any rights to dividends or other distributions payable with respect to Intrexon common stock as set forth in the merger agreement. In addition, no transfer of GenVec common stock after the effective time of the merger will be registered on the stock transfer books of GenVec.

If any GenVec stock certificate has been lost, stolen or destroyed, the exchange agent will issue in exchange for such lost, stolen or destroyed stock certificate the merger consideration upon the delivery of an affidavit by the owner of such stock certificate claiming that such stock certificate has been lost, stolen or destroyed. However, Intrexon may, in its discretion and as a condition to the payment of cash or the issuance of any shares of Intrexon common stock in exchange therefor, also require the owner of such lost, stolen or destroyed stock certificate to deliver a bond as indemnity against any claim that may be made with respect to that stock certificate against Intrexon, Merger Sub, the surviving corporation or the exchange agent.

Stock certificates should be sent only pursuant to instructions set forth in the letters of transmittal, which the merger agreement provides will be mailed to GenVec shareholders promptly following the effective time of the merger, but in no event later than three business days following the effective time of the merger. In all cases, shares of Intrexon common stock, cash in lieu of fractional shares and any dividends or other distributions payable to GenVec shareholders in respect of Intrexon common stock will be delivered only in accordance with the procedures set forth in the letter of transmittal.

Representations and warranties

The merger agreement contains representations and warranties made by GenVec to Intrexon and Merger Sub and made by Intrexon and Merger Sub to GenVec. The assertions embodied in the representations and warranties may be subject to important qualifications and limitations agreed to by the parties to the merger agreement in

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connection with negotiating its terms. In particular, in your review of the representations and warranties contained in the merger agreement, it is important to bear in mind that the representations and warranties were negotiated for the purpose of allocating contractual risk among the parties to the merger agreement, and in some cases, the representations and warranties are qualified by information in confidential disclosure schedules that the parties exchanged in connection with signing the merger agreement. Although none of GenVec, Intrexon, or Merger Sub believe that the disclosure schedules contain information that the U.S. federal securities laws require to be publicly disclosed, the disclosure schedules do contain information that modifies, and creates exceptions to, the representations and warranties set forth in the merger agreement. In addition, the representations and warranties may also be subject to a standard of materiality or material adverse effect different from those generally applicable to investors and reports and documents filed with the SEC and in some cases may be qualified by disclosures made by one party to the other, which are not necessarily reflected in the merger agreement. In addition, the representations and warranties in the merger agreement may be subject to knowledge qualifications, which means that those representations and warranties would not be deemed untrue or incorrect as a result of matters that were not actually known to certain officers or employees of the party making those representations and warranties. Moreover, information concerning the subject matter of the representations and warranties, which do not purport to be accurate as of the date of this proxy statement/prospectus, may have changed since the date of the merger agreement, and subsequent developments or new information qualifying a representation or warranty may have been included in or incorporated by reference into this proxy statement/prospectus. For the foregoing reasons, the representations, warranties and covenants or any descriptions of those provisions should be read only in conjunction with the other information provided elsewhere in this document or incorporated by reference into this proxy statement/prospectus.

In the merger agreement, GenVec, Intrexon and Merger Sub each made representations and warranties relating to, among other things:

- due organization, good standing and corporate power and authority to own, lease and operate properties and carry on their respective businesses;
- capitalization;
- corporate power and authority to execute and deliver the merger agreement, to perform the obligations under the merger agreement and to consummate the merger and the transactions contemplated by the merger agreement, and the enforceability of the merger agreement;
- absence of any conflict with or violation of corporate charter documents, applicable law or contracts as a result of the execution and delivery of the merger agreement and consummation of the transactions contemplated by the merger agreement;
- compliance with federal securities laws, including filing all registration statements, prospectuses, forms, reports, schedules and other documents required to be filed under the Securities Act or Exchange Act, since January 1, 2014;

accuracy and GAAP compliance (subject to customary exceptions) of the financial statements contained in the SEC filings;

absence of liabilities or obligations that would be required by GAAP to be reflected or reserved against on such person s balance sheet, except as disclosed in SEC filings, incurred in the ordinary course, incurred in connection with the merger or that would not reasonably be expected to have a material adverse effect;

absence of untrue statements of material fact or omissions of material facts in all information supplied for inclusion in the proxy statement/prospectus to be filed with the SEC in connection with the merger;

absence of certain types of litigation, except as disclosed in SEC filings or the disclosure schedules to the merger agreement;

the absence of any broker s or finder s fees; and

limitation of representations and warranties to those made in the merger agreement.

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In the merger agreement, Intrexon and Merger Sub also each made representations and warranties relating to:

- ownership of Merger Sub by Intrexon;
- no shareholder vote required to adopt the merger agreement and consummate the transactions; and
- the availability of sufficient funds to perform their obligations under the merger agreement.

In the merger agreement, GenVec also made representations and warranties relating to:

- accuracy of its governing documents;
- material contracts;
- intellectual property matters;
- accuracy of tax returns, timely filing of tax returns and timely payment of taxes;
- compliance with laws, permits and certain regulatory requirements;
- absence of any event that would reasonably be expected to have a material adverse effect since January 1, 2016;
- compliance with the U.S. Foreign Corrupt Practices Act of 1977, as amended, and other similar anti-corruption laws;
- compliance with the sanction programs of the Office of Foreign Assets Control of the U.S. Department of the Treasury;
- operation of its business in the ordinary course and the absence of past actions that would have constituted a breach of certain covenants in the merger agreement (if such covenants had applied at the time of such actions);
- employees, employee relations and employee benefit plans;

labor and other employment matters;

valid ownership and possession of properties;

environmental liabilities and compliance with environmental laws;

insurance maintained by GenVec;

opinion of GenVec s financial advisor; and

vote required to adopt the merger agreement and consummate the transactions.

Material adverse effect

Several of the representations, warranties, and closing conditions in the merger agreement are qualified by a material adverse effect standard. For the purposes of the merger agreement, material adverse effect, with respect to Intrexon or Merger Sub, is defined to mean any change, event, condition, occurrence, state of facts, development or effect that, individually or in the aggregate, prevents or materially impairs or delays the consummation by Intrexon or Merger Sub of the merger. For purposes of the merger agreement, material adverse effect, with respect to GenVec, is defined to mean any change, event, condition, occurrence, state of facts, development or effect that, individually or in the aggregate, (i) has a material adverse effect on the business, properties, assets, condition or results of operations of GenVec, taken as a whole, or (ii) would prevent or materially impair or delay the consummation by GenVec of the merger.

However, the first prong of the definition of material adverse effect with respect to GenVec (described in clause (i) of such definition above) is subject to certain specified exclusions. In particular, no change, event,

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condition, state of facts, development or effect arising out of or attributable to any of following will constitute or will be deemed to contribute to, or will otherwise be taken into account in determining whether there has been or would reasonably be expected to be, a material adverse effect with respect to GenVec under such first prong:

- changes or proposed changes in applicable laws or in GAAP, except to the extent any such change disproportionately impacts GenVec relative to other companies operating in the same industries;
- changes in general economic, business, labor or regulatory conditions, changes in securities, credit or other financial markets, or changes generally affecting the industries in which GenVec operates, except to the extent any such change disproportionately impacts GenVec relative to other companies operating in the same industries;
- changes in global or national political conditions, including the outbreak or escalation of war, changes due to natural disasters, changes in the weather or changes due to the outbreak or worsening of an epidemic or other health crisis, except to the extent any such change disproportionately impacts GenVec relative to other companies operating in the same industries;
- the announcement of the merger agreement or the pendency of the transactions contemplated thereby;
- any shareholder litigation relating to the merger agreement or the transactions contemplated thereby;
- any changes in the trading price or volume of GenVec common stock or any suspension of trading, provided that the underlying facts or circumstances giving rise to such changes may be taken into account;
- any failure to meet any internal or third party estimates of revenue or other financial projections or forecasts, provided that the underlying facts or circumstances giving rise to such failure may be taken into account;
- the performance of the merger agreement or any action taken or omitted to be taken at the request of or with the prior consent of Intrexon or Merger Sub; or
- certain other regulatory and contractual matters.

Covenants

Interim conduct of GenVec s business

Under the merger agreement, GenVec agreed, subject to certain exceptions, to:

conduct its operations in the ordinary course; and

use its commercially reasonable efforts to keep available the services of the current officers, employees and consultants of GenVec and preserve the current relationships of GenVec with customers, suppliers and other business relations.

Additionally, during the pendency of the merger, GenVec agreed, subject to certain exceptions, not to:

amend its certificate of incorporation, its bylaws or equivalent organizational documents;

issue, sell, pledge, dispose of, grant, transfer or encumber any shares of GenVec common stock, or securities convertible into, or exchangeable or exercisable for, any shares of such common stock, or any options, warrants or other rights of any kind to acquire any shares of such common stock, other than the issuance of shares of GenVec common stock upon the exercise of GenVec stock options outstanding as of the date of the merger agreement;

sell, pledge, dispose of, transfer, lease, license, guarantee or encumber any property or assets of GenVec (other than intellectual property), except (i) pursuant to the express terms of any material contract in effect as of the date of the merger agreement, (ii) the sale or disposition of property or assets with a fair market value not in excess of $10,000 individually or $25,000 in the aggregate, or (iii) the sale of inventory in the ordinary course of business;

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sell, assign, pledge, transfer, license, abandon, or otherwise dispose of any GenVec intellectual property, except (i) the abandonment, in the ordinary course of business, of intellectual property owned by GenVec that in GenVec s reasonable business judgment is no longer used or useful in its business, and (ii) the non-exclusive licensing or sublicensing of GenVec intellectual property to affiliates, distributors, and customers in the ordinary course of business;

declare, set aside, make or pay any dividend or other distribution (whether payable in cash, stock, property or a combination thereof) with respect to any of its capital stock or other equity interests;

reclassify, combine, split, subdivide or amend the terms of, or redeem, purchase or otherwise acquire, directly or indirectly, any of its capital stock or other equity interests, except the acceptance of shares of GenVec common stock as payment for the exercise price of GenVec stock options or for withholding taxes incurred in connection with the exercise of GenVec stock options;

merge or consolidate GenVec with any entity or adopt a plan of complete or partial liquidation or resolutions providing for a complete or partial liquidation, dissolution, restructuring, recapitalization or other reorganization of GenVec;

acquire (including by merger, consolidation, or acquisition of stock or assets) any entity (or any business line or division thereof) or assets, other than acquisitions of inventory, raw materials and other property in the ordinary course of business;

incur any indebtedness for borrowed money or issue any debt securities or assume, guarantee or endorse, or otherwise as an accommodation become responsible for (whether directly, contingently or otherwise), the obligations of any third party for borrowed money, except (i) in connection with refinancings of existing indebtedness on terms no less favorable to GenVec than (and in an aggregate principal amount not in excess of) such existing indebtedness, (ii) for borrowings under GenVec s existing credit facilities or issuances of commercial paper for working capital and general corporate purposes in the ordinary course of business, and (iii) other indebtedness not to exceed $10,000 in the aggregate;

make any loans, advances or capital contributions to, or investments in, any third party;

terminate, cancel or renew, or agree to any material amendment to or waiver under, any material contract, or enter into or amend any contract that, if existing on the date of the merger agreement, would be a material contract, in each case other than in the ordinary course of business;

make any capital expenditure in excess of GenVec s capital expenditure budget as disclosed to Intrexon prior to the date of the merger agreement, other than capital expenditures that are not, in the aggregate, in excess of $10,000

except as required by the existing terms of any GenVec benefit plan or as required by law, (i) materially increase the compensation or benefits payable to any service provider, other than in the ordinary course of business, (ii) amend, establish or adopt any GenVec benefit plan, (iii) waive any performance or vesting criteria or accelerate vesting, exercisability or funding under any GenVec benefit plan, (iv) pay or award any bonus or incentive compensation (other than annual bonuses payable in the ordinary course of business); (v) grant any equity-based awards; (vi) enter into any collective bargaining agreement; (vii) hire or terminate the employment of any officer (other than for cause); or (viii) promote any officers or employees except in the ordinary course of business;

make any change in accounting policies, practices, principles, methods or procedures, other than as required by GAAP or by a governmental authority;

compromise, settle or agree to settle any proceeding, other than compromises, settlements or agreements of proceedings (excluding proceedings brought by GenVec shareholders relating to the merger agreement or the transactions contemplated thereby) in the ordinary course of business that involve only the payment of monetary damages not in excess of $10,000 individually or $50,000 in the aggregate, in any case without the imposition of equitable relief on, or the admission of wrongdoing by, GenVec;

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(i) make, change or revoke any material tax election, (ii) change any of its material methods of reporting income or deductions for tax purposes (or file a request to make any such change), (iii) settle or compromise any material tax liability, claim, audit or dispute, (iv) surrender any right to claim a material tax refund, (v) file any amended tax return with respect to any material tax, (vi) enter into any tax allocation, sharing, indemnity or closing agreement, or (vii) waive or extend the statute of limitations with respect to any tax other than pursuant to extensions of time to file tax returns obtained in the ordinary course of business;

enter into any new line of business or materially alter any existing line of business, other than in the ordinary course of business;

voluntarily cancel, terminate or fail to renew (in a form and amount consistent with past practice) any material insurance policies covering GenVec or any of its business, assets or properties; or

authorize or enter into any contract or otherwise make any commitment to do any of the foregoing.

Other covenants

The merger agreement also contains covenants relating to:

the filing of this proxy statement/prospectus and other SEC filings;

the holding of a meeting of GenVec shareholders;

access to information and confidentiality;

taking appropriate action to consummate the merger, obtaining any necessary consents, making applicable filings, defending proceedings that challenge the merger, executing additional instruments necessary to consummate the merger, complying with information requests and notifying the other party of certain actions by governmental authorities;

providing notice of certain events;

coordination of public announcements with respect to the transactions contemplated by the merger agreement;

the delisting of GenVec common stock from NASDAQ;

certain tax matters;

cooperating with respect to shareholder litigation;

obligations of Merger Sub; and

other matters as described further below.

Covenants regarding alternative acquisition proposals

The merger agreement contains detailed provisions regarding GenVec seeking or entertaining alternative acquisition proposals.

No solicitation

Effective as of the date of the merger agreement, and until the effective time of the merger, GenVec (i) is required to (and is required to cause its representatives to) immediately cease and terminate any discussions or negotiations with any persons that may have been ongoing on the date of the merger agreement with respect to any acquisition proposal (as defined below), and as promptly as practicable thereafter deliver a written notice to each such person indicating that GenVec is ending all discussions and negotiations with such person with respect to any acquisition proposal, effective immediately and (ii) is prohibited from (and must prohibit its representatives from) initiating, soliciting, facilitating or knowingly encouraging any acquisition proposal or participating in any discussions with any third party regarding any acquisition proposal.

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Until the time GenVec obtains shareholder approval of the merger proposal, if the board of directors of GenVec in good faith, and without breaching the foregoing obligations, determines that an acquisition proposal from a third party would be, or could reasonably be expected to result in, a superior proposal (as defined below), and that the failure to consider such proposal would breach, or would reasonably be expected to breach, the fiduciary duties of the board of directors of GenVec, then GenVec may furnish information to the party making such proposal and participate in discussions or negotiations with the party making such proposal, provided that any non-public information provided to such party shall, to the extent not previously provided to Intrexon, be provided to Intrexon.

No change in recommendation or alternative acquisition agreement

Except as otherwise described below, neither the board of directors of GenVec nor any committee thereof may (i) withdraw, change, qualify, withhold or modify (or publicly propose to withdraw, change, qualify, withhold or modify) the recommendation of GenVec s board of directors in favor of the merger proposal, (ii) fail to include the recommendation of GenVec s board of directors in favor of the merger proposal in this proxy statement/prospectus, (iii) in the event a tender offer that constitutes an acquisition proposal subject to Regulation 14D of the Exchange Act is commenced, fail to recommend against such acquisition proposal in any solicitation or recommendation statement within 10 business days of such commencement, (iv) adopt, approve or recommend, or publicly propose to adopt, approve or recommend, any acquisition proposal, (v) approve, authorize or cause or permit GenVec to enter into any merger agreement, acquisition agreement, letter of intent, memorandum of understanding or other similar agreement relating to any acquisition proposal, or (vi) resolve or agree to do any of the foregoing.

The issuance by GenVec or its board of directors of a stop, look and listen statement pending disclosure of its position with respect to an acquisition proposal, as contemplated by Rules 14d-9 and 14e-2(a) promulgated under the Exchange Act, shall not constitute a change in recommendation by the board of directors of GenVec.

Permitted changes in recommendation and opportunity to modify the merger agreement

Notwithstanding the above, until the time GenVec obtains shareholder approval of the merger proposal, and provided that GenVec has not breached the covenants regarding acquisition proposals contained in the merger agreement (as described above), the board of directors of GenVec may, under certain circumstances, change its recommendation to GenVec s shareholders with respect to the merger proposal in favor of an alternative acquisition proposal (and GenVec may terminate the merger agreement to enter into such alternative acquisition proposal, as described below in the section entitled Termination of the merger agreement). However, GenVec s board of directors may only change its recommendation if the board first determines in good faith (after consultation with its financial advisor and outside legal counsel) that (i) such alternative acquisition proposal constitutes a superior proposal, and (ii) the failure to change the board s recommendation would breach or would reasonably be expected to breach the board s fiduciary duties under applicable law. In addition, after making such determinations, before the GenVec board of directors may change its recommendation, GenVec must first provide at least three business days notice to Intrexon, which notice must include, among other things, the material terms of the alternative acquisition proposal and be accompanied by certain documents relating to the alternative acquisition proposal. Intrexon will then have the opportunity, during this three-business-day period, to negotiate with GenVec regarding amendments and modifications to the merger agreement intended to cause the alternative acquisition proposal to no longer constitute a superior proposal. Following this three-business-day period, if the GenVec board of directors determines in good faith that, after giving effect to any such amendments or modifications proposed by Intrexon, the alternative acquisition proposal is still a superior proposal, the GenVec board of directors may change its recommendation with respect to the merger proposal in favor of the alternative acquisition proposal. In the event that the alternative acquisition proposal is materially amended, the foregoing process will be repeated.

In addition, until the time GenVec obtains shareholder approval of the merger proposal, and provided that GenVec has not breached the covenants regarding acquisition proposals contained in the merger agreement (as

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described above), the board of directors of GenVec may, under certain circumstances, change its recommendation to GenVec s shareholders with respect to the merger proposal in response to an intervening event (as defined below). However, GenVec s board of directors may only change its recommendation in response to an intervening event if the board first determines in good faith (after consultation with outside legal counsel) that (i) such intervening event has occurred and is continuing, and (ii) the failure to change the board s recommendation with respect to the merger proposal would breach or would reasonably be expected to breach the board s fiduciary duties under applicable law. In addition, after making such determinations, before the GenVec board of directors may change its recommendation, GenVec must first provide at least three business days notice to Intrexon. Intrexon will then have the opportunity, during this three-business-day period, to negotiate with GenVec regarding amendments or modifications to the merger agreement intended to enable the GenVec board of directors to continue to recommend the merger proposal. Following this three-business-day period, if the GenVec board of directors determines in good faith, after considering any such amendments or modifications proposed by Intrexon, that the failure to change its recommendation with respect to the merger proposal in response to the intervening event would reasonably be expected to breach the board s fiduciary duties under applicable law, the GenVec board of directors may change its recommendation with respect to the merger proposal.

Definitions of acquisition proposal, superior proposal and intervening event

For purposes of this summary of the merger agreement, an acquisition proposal shall mean any inquiry, offer or proposal from a third party concerning any (i) merger, consolidation, recapitalization, dissolution or other business combination or similar transaction involving GenVec, (ii) sale, lease or other disposition by merger, consolidation, business combination, share exchange, joint venture or otherwise, of assets of GenVec representing 20% or more of the asset of GenVec, based on their fair market value as determined in good faith by the GenVec board of directors, (iii) issuance or acquisition of (including by way of merger, consolidation, business combination or share exchange) equity interests representing 20% or more of the voting power of GenVec or (iv) any combination of the foregoing (in each case, other than the merger).

For purposes of this summary of the merger agreement, a superior proposal means a bona fide written acquisition proposal (except that the phrase 20% or more in the definition of acquisition proposal shall be replaced with the phrase 50% or more for purposes of this definition) that is not solicited or received in violation, or resulting from any breach, of the terms of the merger agreement, which the GenVec board of directors determines in good faith (after consultation with its financial advisor and outside legal counsel) (i) would, if consummated, be more favorable to GenVec s shareholders from a financial point of view than the merger proposal and (ii) is reasonably likely of being consummated in accordance with its terms.

For purposes of this summary of the merger agreement, an intervening event means any event, change, effect, development, state of facts, condition or occurrence that is material to GenVec that (i) was not known to or by the board of directors of GenVec and could not reasonably be expected to have been known to or by the board of directors of GenVec as of or prior to the date of the merger agreement (or if known, the magnitude or material consequences of which were not known and could not reasonably be expected to have been known to or by the board of directors of GenVec as of or prior to the date of the merger agreement), and (ii) does not involve or relate to the receipt, existence or terms of an acquisition proposal.

Employee matters

The merger agreement provides that, at closing, the employment agreements with certain employees of GenVec and GenVec s severance plan will be assumed and honored by Intrexon or one of its affiliates.

Indemnification and insurance

The merger agreement provides that, from and after the effective time of the merger, Intrexon will indemnify each present and former director and officer of GenVec, as well as each GenVec employee who serves as a

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fiduciary of a GenVec benefit plan, against any losses incurred in connection with any proceeding or investigation arising out of such director s, officer s or fiduciary s position with GenVec at or prior to the effective time of the merger, in each case to the extent provided in GenVec s certificate of incorporation, bylaws and indemnification agreements with such directors, officers and fiduciaries in effect as of the date of the merger agreement.

The merger agreement provides that Intrexon will cause the surviving corporation to honor and fulfill in all respects the obligations of GenVec with respect to the indemnification of GenVec s current and former directors and officers, as well as with respect to the indemnification of each GenVec employee who serves as a fiduciary of a GenVec benefit plan, under GenVec s certificate of incorporation, bylaws and indemnification agreements with such officers, directors and fiduciaries for six years after the effective time of the merger.

The merger agreement provides that GenVec will procure prepaid directors and officers liability insurance and fiduciary liability insurance for GenVec s directors and officers, with a claims period of six years following the effective time of the merger, which policies may be no less favorable in the aggregate to the directors and officers of GenVec than GenVec s current policy.

Conditions to complete the merger

Mutual conditions

The respective obligations of the parties to complete the merger are subject to satisfaction or waiver of the following conditions:

- the merger agreement shall have been adopted by the affirmative vote of the holders of a majority of the outstanding shares of GenVec s common stock;
- the consummation of the merger shall not then be restrained, enjoined or prohibited by any order of any governmental authority and there shall not be in effect any law enacted or promulgated by any governmental authority that prevents or makes illegal the consummation of the merger;
- the shares of Intrexon s common stock issuable to GenVec s shareholders in the merger shall have been approved for listing on the NYSE, subject to official notice of issuance;
- the Registration Statement on Form S-4 shall have been declared effective by the SEC, no stop order suspending the effectiveness of such Registration Statement shall be in effect, and no proceedings for such purpose shall be pending before the SEC; and
- holders representing no more than 20% of GenVec s shares of common stock shall have exercised appraisal, dissenters or similar rights under applicable law.

Conditions to Obligations of Intrexon and Merger Sub

In addition, the obligations of Intrexon and Merger Sub to effect the merger are subject to satisfaction or waiver of the following conditions:

the representations and warranties of GenVec (i) with respect to capitalization shall be true and correct in all respects (except for de minimis inaccuracies) as of the date of the merger agreement and as of the effective time of the merger as though made at such time (except to the extent any representations and warranties address matters only as of a particular date or time, in which case they shall be true and correct as of such date or time), (ii) with respect to corporate organization, authority, execution, delivery and enforceability of the merger agreement, and broker s fees shall be true and correct in all material respects as of the date of the merger agreement and as of the effective time of the merger as though made at such time (except to the extent any representations and warranties address matters only as of a particular date or time, in which case they shall be true and correct as of such date or time), and

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(iii) with respect to all other representations and warranties, shall be true and correct in all respects without giving effect to any materiality or material adverse effect qualifications, as of the date of the merger agreement and as of the effective time of the merger as though made at such time (except to the extent any representations and warranties address matters only as of a particular date or time, in which case they shall be true and correct as of such date or time), except as has not had and would not be reasonably expected to have, individually or in the aggregate, a material adverse effect with respect to GenVec; and Intrexon shall have received a certificate of an executive officer of GenVec to that effect;

GenVec shall have performed in all material respects the covenants and agreements required to be performed by it under the merger agreement, and Intrexon shall have received a certificate of an executive officer of GenVec to that effect;

there shall not have occurred since the date of the merger agreement any change, event, development, condition, occurrence or effect that has had, or would reasonably be expected to have, a material adverse effect with respect to GenVec; and

GenVec shall have delivered to Intrexon a statement satisfying the requirements of Treasury Regulations Section 1.897-2(h) and 1.1445-2(c)(3) certifying that interests in GenVec are not United States real property interests .

Conditions to Obligations of GenVec

In addition, the obligations of GenVec to effect the merger are subject to the satisfaction or waiver of the following conditions:

the representations and warranties of Intrexon and Merger Sub (i) with respect to capitalization shall be true and correct in all respects (except for de minimis inaccuracies) as of the date of the merger agreement and as of the effective time of the merger as though made at such time (except to the extent any representations and warranties address matters only as of a particular date or time, in which case they shall be true and correct as of such date or time) and (ii) with respect to all other representations and warranties, shall be true and correct in all respects without giving effect to any materiality or material adverse effect qualifications, as of the date of the merger agreement and as of the effective time of the merger as though made at such time (except to the extent any representations and warranties address matters only as of a particular date or time, in which case they shall be true and correct as of such date or time), except as has not had and would not be reasonably expected to have, individually or in the aggregate, a material adverse effect with respect to Intrexon; and GenVec shall have received a certificate of a duly authorized officer of Intrexon to that effect; and

Intrexon and Merger Sub shall have performed in all material respects the covenants and agreements required to be performed by each of them under the merger agreement, and GenVec shall have received a certificate of a duly authorized officer of Intrexon to such effect.

Termination of the merger agreement

The merger agreement may be terminated upon the following occurrences:

by mutual written consent of Intrexon and GenVec;

by either Intrexon or GenVec, if GenVec shall have failed to obtain the requisite affirmative vote of its shareholders to adopt the merger agreement;

by either Intrexon or GenVec, if a governmental authority shall have issued a final and non-appealable order that permanently restrains, enjoins or prohibits consummation of the merger, or if any law is in effect that prevents or makes illegal consummation of the merger, unless the issuance of, or failure to resolve or have vacated or lifted, such order was primarily due to breach of any obligation under the merger agreement by the party seeking to terminate the merger agreement;

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by either Intrexon or GenVec, if the merger is not consummated on or before July 24, 2017, unless the party seeking to terminate the merger agreement is in breach of the merger agreement and such breach has primarily caused or resulted in the failure of the closing to occur by such date;

by Intrexon, prior to the approval of the merger proposal by the shareholders of GenVec, if the board of directors of GenVec shall have effected a change in its recommendation with respect to the merger proposal;

by GenVec, prior to the approval of the merger proposal by the shareholders of GenVec, if the board of directors of GenVec shall have effected a change in its recommendation with respect to the merger proposal, or determined to effect such a change in its recommendation, in order to accept a superior proposal, provided that GenVec (i) complied with the provisions of the merger agreement prohibiting solicitation of acquisition proposals (as described above in the section entitled Covenants regarding alternative acquisition proposals), (ii) shall have approved, and substantially concurrently with the termination of the merger agreement entered into, a letter of intent or agreement with respect to such superior proposal, and (iii) concurrently with such termination, GenVec shall have paid Intrexon the termination fee discussed below; or

by either party, if there shall have been a breach of any of the covenants or agreements or any of the representations or warranties in the merger agreement by the other party that is not cured (or is not capable of cure) within the timeframe specified in the merger agreement, which breach or misrepresentation would prevent the satisfaction of certain conditions to closing, provided that neither party shall have the right to terminate pursuant to this provision if it is in material breach of its representations, warranties, covenants or agreements contained in the merger agreement.

Termination fee

GenVec shall pay Intrexon a termination fee of $550,000 if the merger agreement is terminated:

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

by Intrexon, prior to the approval of the merger proposal by the shareholders of GenVec, because the board of directors of GenVec shall have effected a change in recommendation with respect to the merger proposal;

GenVec shall also pay to Intrexon a termination fee of $550,000 if the merger agreement is terminated (i) by Intrexon or GenVec because the merger is not consummated on or before July 24, 2017, or (ii) by Intrexon based solely on a breach by GenVec of any covenant or agreement in the merger agreement that is not cured (or is not capable of cure) within the timeframe specified in the merger agreement, which breach would prevent the satisfaction of certain conditions to closing, and, in either case, (a) an acquisition proposal is publicly announced or made to GenVec after the date of the merger agreement but prior to termination of the merger agreement (and such acquisition proposal has not been withdrawn prior to such termination) and (b) GenVec enters into a letter of intent or an agreement for, or consummates, an acquisition proposal within 12 months of such termination, provided that for purposes of this summary only, references to 20% in the definition of acquisition proposal set forth above shall be deemed to be references to 50%.

In circumstances where the termination fee is due, Intrexon s receipt of the termination fee will be Intrexon s sole and exclusive remedy against GenVec for all losses and damages suffered as a result of the failure to consummate the merger and the other transactions contemplated by the merger agreement, as well as for any breach or failure to perform under the merger agreement.

Costs and expenses

GenVec shall reimburse Intrexon for the reasonable costs, fees and expenses of Intrexon, its affiliates and their representatives incurred in connection with the investigation, due diligence, negotiation and documentation of the

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merger agreement, up to a maximum of $400,000, if the merger agreement is terminated by Intrexon because of a breach by GenVec of any covenant or agreement in the merger agreement that is not cured (or is not capable of cure) within the timeframe specified in the merger agreement, which breach would prevent the satisfaction of certain conditions to closing, and within 6 months after the date of such termination, GenVec enters into a definitive agreement with a third party in respect of any acquisition proposal (regardless of when GenVec received such acquisition proposal). In addition to such expense reimbursement (and only when such expense reimbursement is due), GenVec will also be obligated to pay Intrexon an added $200,000 if GenVec willfully breached in any materially respect the provisions of the merger agreement prohibiting solicitation of acquisition proposals (as described above in the section entitled Covenants regarding alternative acquisition proposals). In the event that GenVec reimburses Intrexon s expenses as described in this paragraph and the termination fee thereafter becomes payable, the termination fee will be reduced by the expenses so reimbursed (as well as by the additional $200,000 paid by GenVec as described in the previous sentence, if applicable).

In circumstances where the expense reimbursement is due, Intrexon s receipt of such expense reimbursement (together with the additional $200,000 paid by GenVec as described in the previous paragraph, if applicable) will be Intrexon s sole and exclusive remedy against GenVec for all losses and damages suffered as a result of the failure to consummate the merger and the other transactions contemplated by the merger agreement, as well as for any breach or failure to perform under the merger agreement.

Specific performance

In addition to any other remedy to which the parties to the merger agreement are entitled at law or in equity, the parties thereto will be entitled to an injunction or injunctions to prevent breaches of the merger agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction.

Amendment, waiver and extension of the merger agreement

The merger agreement may be amended by the parties at any time prior to the effective time of the merger. After approval of the merger proposal by the shareholders of GenVec, no amendment may be made that, by law or in accordance with the rules of any relevant stock exchange, requires further approval by such shareholders. The merger agreement may not be amended except by an instrument in writing signed by the parties.

At any time prior to the effective time of the merger, the parties may (i) extend the time for the performance of any of the obligations or other acts of the other party, (ii) waive any inaccuracies in the representations and warranties and (iii) waive compliance with any of the agreements or satisfaction of any conditions; *provided, however*, that after approval of the merger proposal by the shareholders of GenVec, there may not be any extension or waiver of the merger agreement that decreases the merger consideration or that adversely affects the rights of GenVec s shareholders without the approval of such shareholders. Any such extension or waiver will be valid only if set forth in an instrument in writing signed by the party to be bound thereby, but such extension or waiver or failure to insist on strict compliance with an obligation, covenant, agreement or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure.

Governing law

The merger agreement is governed by, and will be construed in accordance with, the laws of the State of Delaware without regard to laws applicable under conflicts of laws principles.

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Contingent payment rights agreement

The following description describes the material terms of the contingent payment rights agreement executed by Intrexon and the rights agent. This description is qualified in its entirety by reference to the contingent payment rights agreement, a copy of which is attached hereto as Annex B *and incorporated herein by reference. Each shareholder should read the contingent payment rights agreement carefully and in its entirety.*

Pursuant to the terms of the NVS License Agreement, GenVec has licensed to Novartis certain of its intellectual property in exchange for, among other things, the payment to GenVec of certain milestone and royalty amounts based on development, regulatory and sales results, as further described below.

CPRs

The CPRs are not evidenced by a certificate or any other instrument. AST has agreed to act as rights agent and will serve as the initial CPR registrar and will maintain a record of issued CPR holdings as well as any permitted transfers.

Eligibility

Each share of GenVec common stock outstanding at the effective time of the merger (including through exercise of a GenVec stock option), and each share of GenVec common stock underlying a warrant that is converted into a warrant to purchase merger consideration, will, upon the effective time of the merger, or with respect to a warrant, upon the exercise of such warrant, entitle the holder to receive one CPR. Each CPR represents the right to receive an amount equal to (i) 50% of the applicable milestone or royalty payments received by Intrexon or GenVec *divided by* (ii) the total number of CPRs outstanding at such time. To the extent any applicable milestone or royalty payment is received by Intrexon or GenVec, each holder of a CPR will receive a payment equal to the amount described in the foregoing sentence multiplied by the number of CPRs held by such holder at the applicable time, referred to herein as a CPR Payment.

Achievement of milestones

CPR holders will collectively be entitled to receive 50% of the actual amounts received by Intrexon or GenVec under the NVS License Agreement with respect to the achievement or occurrence of certain development, regulatory and sales milestones as more fully described in the NVS License Agreement. The description of the milestones and royalty payments under the NVS License Agreement is qualified in its entirety by reference to the NVS License Agreement which has previously been filed with the SEC by GenVec. The first four development and regulatory milestones under the NVS License Agreement have been met; however, GenVec has not achieved any milestones since October 2014. Under the contingent payment rights agreement, the holders of the GenVec common stock are entitled to receive 50% of the amounts actually received by GenVec under the NVS License Agreement as royalty payments or milestone payments during the 36-month period following the signing of the merger agreement. As of the date hereof, GenVec has not received any royalty payments from Novartis under the NVS License Agreement. In addition, as of the date hereof, GenVec cannot determine whether any milestones under the NVS License Agreement will be achieved or occur within the 36-month period after the closing of the merger. Neither Intrexon nor GenVec can assure you that any milestone or royalty payments will be received by Intrexon or the surviving corporation after the date hereof. If these payment events do not occur, no payments will be made under the contingent payment rights agreement. The CPRs may ultimately have no value and expire without yielding any payments to holders of CPRs.

Although it is highly uncertain whether any further milestones will be achieved or occur during the 36-month contingent payment period covered by the contingent payment rights agreement (or at all), the most likely milestones

to be achieved or occur during such period, if any, would be first patient first visit in a phase IIb clinical trial with respect to the first indication of a product covered by the NVS License Agreement,

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achievement of which would trigger a milestone payment from Novartis to GenVec of $5 million, and first patient first visit in a phase III clinical trial with respect to the first indication of a product covered by the NVS License Agreement, achievement of which would trigger a milestone payment from Novartis to GenVec of $10 million. However, achievement or occurrence of either of these milestones, or any other milestone(s), under the NVS License Agreement is not guaranteed and is highly speculative.

Novartis may also make other payments to GenVec and Intrexon to compensate for research, personnel and other administrative costs. The CPRs do not represent the right to share in such payments, and CPR Payments will not include the amount of those payments made to GenVec or Intrexon.

Payment mechanics

If the first two milestones under the NVS License Agreement are achieved or occur during the 36-month period after the effective time of the merger and milestone payments are received by Intrexon or GenVec, Intrexon will notify the rights agent within 30 days of receipt of each such payment. The rights agent will then make the applicable CPR Payments to the appropriate CPR holders within 10 business days. With respect to all other milestone payments received by Intrexon or GenVec on account of milestones that are achieved or occur during the 36-month period after the effective time of the merger, and with respect to all royalty payments received by Intrexon or GenVec under the NVS License Agreement during such 36-month period, Intrexon will notify the rights agent within 30 days of the end of such 36-month period, such date referred to herein as final notice date. The rights agent will then make the applicable CPR Payments to the appropriate CPR holders within 10 business days.

Form of CPR payments

CPR Payments will be made in cash, except that, to the extent such payment would cause the merger to fail to qualify as a tax-free reorganization (taking into account for such determination the value of Intrexon common stock at both the time of such CPR Payment and at the effective time of the merger), CPR Payments will be made in shares of Intrexon common stock with a view to preserving the tax-free reorganization status of the merger. However, in no event will shares of Intrexon common stock be issued to holders of CPRs if:

- such shares, when aggregated with all other shares of Intrexon common stock issued in connection with the merger, would exceed 19.9% of all then-issued and outstanding shares of Intrexon common stock; or

- such shares, when aggregated with all other shares of Intrexon common stock issued pursuant to the contingent payment rights agreement, would exceed the number of shares of Intrexon common stock issued to GenVec shareholders at the effective time of the merger.

Thus, it is possible that the merger would not be treated as a tax-free reorganization if the maximum value of all Intrexon shares issued pursuant to the merger is less than 80% of the total value of all of the merger consideration. See the section entitled Material U.S. federal income tax consequences of the merger Exchange of GenVec common stock for Intrexon voting common stock, cash in lieu of fractional shares, and CPRs.

For purposes of determining the value of shares of Intrexon common stock for these purposes, such shares will be valued based on the VWAP for the five trading days immediately preceding the applicable measurement date.

Non-transferability

CPRs will not be evidenced by a certificate or other instrument and, subject to certain limited exceptions, may not be sold or otherwise transferred or disposed of.

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Rights of holders of CPRs

The CPRs alone do not represent any equity, dividend or voting interests in Intrexon or GenVec and are limited to the rights expressly provided for in the contingent payment rights agreement.

The holders of CPRs, by written consent of holders holding a majority of the then-outstanding CPRs, may direct the rights agent to enforce any of the holders rights pursuant to the contingent payment rights agreement. The rights agent is not under any obligation, however, to institute any action, suit or proceeding or take any other action likely to result in the incurrence of material expenses by the rights agent unless the holders indemnify the rights agent for any material expense incurred in enforcing such rights.

Once during the one-year period following the expiration of the 36-month contingent payment period, upon reasonable notice of holders holding a majority of the then-outstanding CPRs, holders of CPRs may appoint an independent accounting firm, reasonably acceptable to Intrexon, to have reasonable access to the books and records of Intrexon and GenVec to audit the milestone and royalty payments made by Novartis and the CPR Payments made by Intrexon to determine compliance with the contingent payment rights agreement. The fees of such independent accountant will be borne by the holders of CPRs, unless Intrexon is found to have made underpayments with respect to the CPR Payments greater than 5% of the required amount, in which case the fees of such independent accountant will be borne by Intrexon.

Amendment of contingent payment rights agreement

The contingent payment rights agreement may be amended without the consent of the holders of CPRs by Intrexon and the rights agent as follows:

- to evidence the succession of another person as a successor rights agent and the assumption by any successor of the covenants and obligations of the rights agent pursuant to the terms of the contingent payment rights agreement;

- to add to the covenants of Intrexon such further covenants, restrictions, conditions or provisions as Intrexon and the rights agent will consider to be for the protection of the holders of CPRs; provided that, in each case, such provisions do not materially adversely affect the interests of the holders of CPRs;

- to cure any ambiguity, to correct or supplement any provision in the contingent payment rights agreement that may be defective or inconsistent with any other provision of the contingent payment rights agreement, or to make any other provisions with respect to matters or questions arising under the contingent payment rights agreement; provided that, in each case, such provisions do not materially adversely affect the interests of the holders of CPRs;

- as may be necessary or appropriate to ensure that the CPRs are not subject to registration under the Securities Act or the Exchange Act; provided that, in each case, such provisions do not materially adversely affect the interests of the holders of CPRs; or

any other amendments hereto for the purpose of adding, eliminating or changing any provisions of the contingent rights agreement, unless such addition, elimination or change is materially adverse to the interests of the holders of CPRs.

In addition, the contingent payment rights agreement may be amended with the consent of Intrexon, the rights agent and holders holding a majority of the then-outstanding CPRs, regardless of whether such amendment is materially adverse to the interests of the holders of CPRs.

Termination of contingent payment rights agreement

The contingent payment rights agreement will automatically terminate upon the earlier to occur of (i) the payment of all CPR Payments required to be paid or potentially payable as contemplated by the terms of the

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contingent payment rights agreement and (ii) 45 days after the final notice date. Except for the payment of any CPR Payments earned during, or payable in connection with milestones that are achieved or occur during, the 36-month contingent payment period, upon termination of the contingent payment rights agreement, Intrexon and GenVec will have no further responsibility or obligation to make any CPR Payments.

Risks associated with CPRs

For a discussion of the risks associated with the CPRs, see the section entitled Risk factors.

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Amendment to the rights agreement

The following description describes the material terms of the rights agreement, as amended by the amendment to the rights agreement, executed by GenVec and the rights agent. This description is qualified in its entirety by reference to the rights agreement, a copy of which was filed as Exhibit 4.1 to GenVec s Current Report on Form 8-K, filed with the SEC on August 12, 2011, and the amendment to the rights agreement, a copy of which is attached hereto as Annex C and which was filed as Exhibit 4.1 to GenVec s Current Report on Form 8-K, filed with the SEC on January 24, 2017. Each shareholder should read the rights agreement and the amendment to the rights agreement carefully and in its entirety.

The rights agreement

On August 11, 2011, GenVec entered into a Rights Agreement, referred to herein as the rights agreement, between GenVec and AST, as rights agent.

In connection with entering into the rights agreement, on August 11, 2011 the board of directors of GenVec declared a distribution of one preferred share purchase right, which we refer to as a Right, for each outstanding share of GenVec s common stock, to shareholders of record at the close of business on September 7, 2011, and for each share of common stock issued (including shares distributed from treasury) by GenVec thereafter and prior to the Distribution Date (as described below). As a result of the reverse stock split, there are now 10 Rights associated with each outstanding share. Each Right entitles the registered holder, subject to the terms of the rights agreement, to purchase from GenVec one one-thousandth of a share of Series B Junior Participating Preferred Stock, $0.001 par value per share at a purchase price of $32.00 per one one-thousandth of a share, subject to adjustment, referred to herein as the Purchase Price.

Initially, no separate rights certificates were distributed and instead the Rights were attached to all certificates representing shares of outstanding common stock, or, with respect to common stock in book-entry form, to the outstanding shares of common stock evidenced by the balances indicated in the book-entry account system of the transfer agent for the common stock. The Rights will separate from the common stock and the Distribution Date will occur upon the earlier of (i) ten business days following a public announcement that a person or group of affiliated or associated persons has become an Acquiring Person, or (ii) ten business days (or such later date as may be determined by the board of directors prior to such time as any person becomes an Acquiring Person) following the commencement of a tender offer or exchange offer that would result in a person or group of affiliated and associated persons beneficially owning 20% or more of the shares of common stock then outstanding. Until the Distribution Date, (i) the Rights will be evidenced by the balances indicated in the book-entry account system of the transfer agent for the common stock registered in the names of the holders thereof or, in the case of certificated shares, by common stock certificates, and will be transferred with and only with such underlying shares of common stock, (ii) confirmation and account statements sent to holders of common stock in book-entry form or, in the case of certificated shares, certificates, representing such shares of common stock, issued after the Record Date (including shares distributed from treasury) will contain a notation incorporating the rights agreement by reference, and (iii) the transfer of any shares of outstanding common stock will also constitute the transfer of the Rights associated with such shares of common stock.

As used in the rights agreement, an Acquiring Person means a person or group of affiliated or associated persons that has acquired, obtained the right to acquire, or otherwise obtained beneficial ownership of 20% or more of the shares of common stock then outstanding. The following, however, are not Acquiring Persons: GenVec, its subsidiaries, any employee benefit plan of GenVec or any of its subsidiaries, or any entity holding shares of common stock pursuant to the terms of any such plan. Moreover, no person or affiliated persons will be deemed to be an Acquiring Person as a

result of the following: (i) an acquisition of common stock by GenVec, which, by reducing the number of shares of common stock outstanding, increases the percentage of the shares of common stock that such person, or group of affiliated or associated persons, beneficially owns to 20% or more of the shares of common stock then outstanding, (ii) any unilateral grant of any security by GenVec to such person,

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(iii) through the exercise of any options, warrants, rights or similar interests (including restricted stock) granted by GenVec to its directors, officers and employees or (iv) being the beneficial owner of 20% or more of the shares of common stock then outstanding as of the date of the rights agreement or prior to the first public announcement of the adoption of the rights agreement.

Notwithstanding the foregoing, if the board of directors of GenVec determines that a person, or group of affiliated or associated persons, who would otherwise be an Acquiring Person, has become so inadvertently (either because such person, or group of persons, was unaware that it beneficially owned the requisite percentage of outstanding common stock or because it had no actual knowledge of the consequences of such beneficial ownership under the rights agreement), and such person, or group of affiliated or associated persons, promptly divests a sufficient number of shares of common stock so that it would no longer be an Acquiring Person, then such person or group of affiliated or associated persons shall not be deemed to be or to have become an Acquiring Person for any purposes of the rights agreement.

The Rights are not exercisable until the Distribution Date and will expire at the close of business on September 7, 2021 unless earlier redeemed or exchanged by GenVec.

In the event that a person, or group of affiliated or associated persons, becomes an Acquiring Person, then each holder of a Right will thereafter have the right to receive, upon exercise, shares of common stock (or, in certain circumstances, shares of Preferred Stock, other securities, cash, property, or a combination thereof) having a value equal to two times the exercise price of the Right. The exercise price is the Purchase Price multiplied by the number of one one-thousandth of a share of Preferred Stock issuable upon exercise of a Right prior to the events described in the paragraph below.

In the event that, at any time after a person or group becomes an Acquiring Person, (i) GenVec is acquired in a merger or other business combination with another company and GenVec is not the surviving corporation, (ii) another company consolidates or merges with GenVec and all or part of the common stock is converted or exchanged for other securities, cash, or property, or (iii) 50% or more of the consolidated assets or earning power of GenVec and its subsidiaries is sold or transferred to another company, then each holder of a Right (except Rights that previously have been voided as described above) shall thereafter have the right to receive, upon exercise, common stock or other equity interest of the ultimate parent of such other company having a value equal to two times the exercise price of the Right.

Notwithstanding any of the foregoing, following the time any person or group becomes an Acquiring Person, all Rights that are, or under certain circumstances specified in the rights agreement were, beneficially owned by any Acquiring Person or its affiliates or associates will be null and void.

Any of the provisions of the rights agreement may be amended without the approval of the holders of Rights in order to cure any ambiguity, defect, inconsistency or to make any other changes that the board of directors may deem necessary or desirable. After any person or group of affiliated or associated persons becomes an Acquiring Person, the provisions of the rights agreement may not be amended in any manner that would adversely affect the interests of the holders of Rights excluding the interests of any Acquiring Person.

Amendment to rights agreement

On January 24, 2017, prior to the execution of the merger agreement, the board of directors of GenVec approved Amendment No. 1 to the Rights Agreement, referred to herein as the amendment to the rights agreement. The amendment to the rights agreement was executed on January 24, 2017, immediately prior to the execution of the

merger agreement.

The amendment to the rights agreement renders the rights agreement inapplicable to the merger agreement and the transactions contemplated thereby. Specifically, the amendment to the rights agreement provides, among

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other things, that: (i) none of Intrexon, Merger Sub, or any of their respective affiliates or associates shall become an Acquiring Person as a result of (a) the approval, execution, delivery, performance or public announcement of the merger agreement (including any amendments, modifications or supplements thereto), (b) the consummation of the merger, (c) the execution, delivery or performance of the contingent payment rights agreement to be entered into in connection with the merger or (d) consummation of any other transactions contemplated by the merger agreement or the contingent payment rights agreement, including, but not limited to, the potential future payments thereunder, collectively referred to herein as exempted transactions; (ii) a Distribution Date shall not be deemed to occur as a result of the exempted transactions; (iii) the Rights of the GenVec s shareholders shall not be adjusted as a result of the exempted transactions; and (iv) the right to obtain shares of common stock of an Acquiring Person under the rights agreement in the event of a merger shall not be applicable to the exempted transactions.

In addition, the amendment to the rights agreement provides that Section 13(a)(i) of the rights agreement, providing for the conversion of each Right into one one-thousandth of a share of Series B Junior Participating Preferred Stock, will not apply to the merger and will not apply to Intrexon or Merger Sub as an other Person, provided that neither becomes an Acquiring Person (as such terms are defined in the rights agreement).

Accordingly, no rights will be issued as a result of the execution of the merger agreement and the transactions contemplated thereby, including the merger.

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Material U.S. federal income tax consequences of the merger

The following discussion sets forth the material U.S. federal income tax consequences of the merger to GenVec and to the United States holders (as that term is defined below) of GenVec common stock. This discussion is based upon provisions of the Internal Revenue Code, referred to herein as the Code, U.S. Treasury Regulations, and administrative rulings and court decisions, all as in effect or in existence on the date of this filing and all of which are subject to change or differing interpretations by the Internal Revenue Service, referred to herein as the IRS, or a court, possibly with retroactive effect. Changes in these authorities may cause the tax consequences of the merger to vary substantially from the consequences described below.

This discussion addresses only those United States holders (as defined below) of GenVec common stock that hold such stock as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment), and does not address all the United States federal income tax consequences that may be relevant to GenVec or to any United States holders of GenVec common stock in light of their individual circumstances such as (i) beneficial owners of GenVec common stock subject to special tax rules (e.g., banks or other financial institutions, real estate investment trusts, regulated investment companies, insurance companies, broker-dealers, traders that elect to mark-to-market for U.S. federal income tax purposes, tax-exempt organizations and retirement plans, individual retirement accounts and tax-deferred accounts, or former citizens or long-term residents of the United States) or to persons that hold GenVec common stock as part of a straddle, hedge, conversion, constructive sale, or other integrated transaction for U.S. federal income tax purposes, (ii) partnerships or other entities classified as partnerships for U.S. federal income tax purposes or their partners, (iii) United States holders that have a functional currency other than the U.S. dollar, (iv) United States holders of stock rights, options, or warrants with respect to GenVec common stock, or (v) United States holders of GenVec common stock that acquired their GenVec common stock as compensation, all of whom may be subject to tax rules that differ significantly from those summarized below. If a partnership or other entity classified as a partnership for U.S. federal income tax purposes holds GenVec common stock, the tax treatment of its partners generally will depend upon the status of the partner, the activities of the partnership and certain determinations made at the partner level. If you are a partner in a partnership holding GenVec common stock, you should consult your own tax advisor regarding the tax consequences to you of the partnership s ownership of GenVec common stock.

This discussion does not discuss (i) the U.S. federal income tax consequences to a United States holder of GenVec common stock who dissents and exercises appraisal rights, (ii) any state or local, foreign, estate, gift or alternative minimum tax considerations concerning the merger, or (iii) any information regarding a non-United States holder. A non-United States holder is a holder that is not a United States holder. If you are not a United States holder you should consult with your own tax advisor as to the United States federal, state, local, and foreign tax laws with respect to the merger.

Except as noted, this discussion assumes that the any payments received pursuant to the CPR will be made in cash.

Accordingly, each beneficial owner of GenVec common stock is urged to consult its own tax advisors regarding the U.S. federal, state, local, foreign, and other tax consequences to them of the merger.

For purposes of this discussion, a United States holder is a beneficial owner of GenVec common stock that:

is an individual U.S. citizen or resident (as determined for U.S. federal income tax purposes),

a corporation (or other entity that is classified as a corporation for U.S. federal income tax purposes) organized under the laws of the United States or any of its political subdivisions,

an estate the income of which is subject to U.S. federal income taxation regardless of its source, or

a trust if (i) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined in the Code) have the

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authority to control all substantial decisions of the trust or (ii) the trust has a valid election in effect under current U.S. Treasury Regulations to be treated as a United States person.

Exchange of GenVec common stock for Intrexon voting common stock, cash in lieu of fractional shares, and CPRs

Pursuant to the terms of the merger agreement, Intrexon and GenVec agreed not to take any action that would reasonably be expected to prevent or impede the merger from qualifying as a reorganization within the meaning of Section 368(a) of the Code. However, the qualification of the merger as a reorganization depends on compliance with numerous technical requirements of these provisions of the Code, not all of which can be finally determined at this time, most specifically whether holders of GenVec common stock will receive a sufficient amount of Intrexon voting common stock to satisfy the control test set forth in Section 368(a)(2)(E) of the Code. The final measurement of this test depends on facts and circumstances that cannot yet be determined.

The merger agreement does not require that the merger qualify as a tax-free reorganization and does not contemplate that a tax opinion will be required or delivered as a condition to closing.

Due to the legal and factual uncertainties regarding the tax treatment of CPRs, GenVec shareholders are urged to consult their own tax advisers to determine the timing and characterization of income, gain or loss resulting from receipt of payments (if any) pursuant to the CPRs.

As more fully discussed below, assuming that the merger is treated as a reorganization and a closed transaction, (i) a United States holder will recognize gain, but not loss, with respect to the receipt of merger consideration other than Intrexon voting common stock (e.g., CPRs and cash) and (ii) will recognize no gain or loss with respect to the Intrexon voting common stock received in the merger in exchange for GenVec common stock. If the merger does not qualify as a reorganization, the receipt of the merger consideration by a United States holder in exchange for shares of GenVec common stock will be a taxable transaction for United States federal income tax purposes.

The control test requires that, in the transaction, the holders of GenVec stock exchange, for an amount of Intrexon voting stock, stock possessing control of GenVec. For purposes of Section 368(a)(2)(E) of the Code, control is defined as ownership of stock possessing at least 80% of the total combined voting power of all classes of stock entitled to vote and at least 80% of the total number of shares of all other classes of stock of the corporation. Satisfaction of the control test will depend on the value, as of the closing of the merger, of the Intrexon voting common stock received by holders of GenVec common stock in exchange for GenVec common stock relative to the value of the consideration other than Intrexon voting common stock (including the fair market value of the CPRs and cash consideration paid to GenVec shareholders receiving appraisal rights) received by holders of GenVec common stock in exchange for shares of GenVec common stock in connection with the merger. At this time, neither Intrexon nor GenVec is able to ascertain with certainty whether the value of the Intrexon voting common stock to be received by holders of GenVec common stock in connection with the merger will be sufficient to satisfy the control test. Under the contingent payment rights agreement, the holders of the GenVec common stock are entitled to receive 50% of the amounts actually received by GenVec under the NVS License Agreement as royalty payments or milestone payments during the 36-month period following the signing of the merger agreement. As of the date hereof, GenVec has not received any royalty payments from Novartis under the NVS License Agreement. In addition, as of the date hereof, GenVec cannot determine whether any milestones under the NVS License Agreement will be achieved or occur within the 36-month period after the closing of the merger. Neither Intrexon nor GenVec can assure you that any milestone or royalty payments will be received by Intrexon or the surviving corporation after the date hereof. Accordingly, although Intrexon and GenVec have structured the merger, including the CPRs, with the intent that the control test will be satisfied, due to uncertainties surrounding the amount of cash issued to shareholders exercising appraisal rights and limitations on the total number of Intrexon shares that may be issued in the merger, they anticipate that it will not

be possible to make this determination with certainty until after the closing of the merger and the expiration of the 36-month CPR payment period.

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Intrexon and GenVec have not sought and will not seek any ruling from the IRS regarding any matter affecting the merger or any of the United States federal income tax consequences discussed herein, and have not sought and will not seek any opinion from their respective legal counsel regarding the qualification of the merger as a reorganization within the meaning of Section 368(a) of the Code. Thus, there can be no assurance that the IRS will ultimately conclude that the merger does meet the control test or any of the other requirements for qualification as a reorganization within the meaning of Section 368(a) of the Code or that any of the other statements made herein would not be challenged by the IRS and, if so challenged, sustained upon review in a court.

If the merger is treated as a reorganization within the meaning of Section 368(a) of the Code, and the transaction is treated as a closed rather than an open transaction for federal income tax purposes (as discussed more fully below), then, subject to the limitations and qualifications referred to herein, the following U.S. federal income tax consequences should result:

A United States holder of GenVec common stock will recognize gain (but not loss), with respect to its shares of GenVec common stock held, in an amount equal to the lesser of (i) any gain realized with respect to such shares or (ii) the fair market value of consideration other than Intrexon voting common stock received such as the fair market value of the CPRs received (subject to the discussion below under the section entitled Treatment of Receipt, Holding and Disposition of CPRs), determined as of the effective time of the merger. A United States holder s gain realized will be equal to the difference between (i) the sum of the fair market value of the Intrexon voting common stock and CPRs received and (ii) such United States holder s tax basis in the GenVec common stock surrendered (less any basis allocable to fractional shares as described below). Any such gain recognized by a United States holder of GenVec common stock with respect to the receipt of the CPRs should be capital gain, long-term or short-term depending on the United States holder s holding period for the GenVec common stock.

The aggregate adjusted tax basis of the Intrexon voting common stock received in the transaction (including any fractional interest) by a United States holder of GenVec common stock will be equal to the aggregate adjusted tax basis of such holder s GenVec common stock exchanged therefor, decreased by the fair market value of the cash and CPRs received by such United States holder and increased by any gain recognized by such United States holder.

The holding period for Intrexon common stock received in the transaction by a United States holder of GenVec common stock will include the holding period of such United States holder s GenVec common stock exchanged therefor.

The aggregate adjusted tax basis of the CPRs received in the transaction by a United States holder of GenVec common stock will be equal to their fair market value as of the effective time of the merger, and the holding period for CPRs received will begin the day after the effective time of the transaction.

A United States holder of GenVec common stock who receives cash instead of a fractional share of Intrexon common stock will generally recognize capital gain or loss based on the difference between the amount of the cash so received and the holder s adjusted tax basis in such fractional share.

Capital gain or loss recognized on receipt of cash in lieu of fractional shares will constitute long-term capital gain or loss if the holding period of the United States holder of GenVec common stock is greater than one year as of the date of the consummation of the transaction. The deductibility of capital losses is subject to limitations.

If the merger does not qualify as a reorganization within the meaning of Section 368(a) of the Code, and again provided that the transaction is treated as a closed rather than an open transaction for federal income tax purposes (as discussed more fully below), then the merger generally will be a taxable transaction. In general, a United States holder will recognize capital gain or loss on the exchange in an amount equal to the difference, if any, between (i) the sum of the fair market value of Intrexon voting common stock and the fair market value of

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other merger consideration (for example CPRs and cash) received and (ii) the United States holder s adjusted tax basis in the GenVec common stock exchanged in the merger. Gain or loss, as well as the holding period, will be determined separately for each block of shares exchanged pursuant to the merger. Such gain or loss will be long-term capital gain or loss provided that the United States holder has held (or is treated as having held) his or her GenVec common stock for more than one year as of the date of the merger. Otherwise, the recognized gain or loss generally will be a short-term capital gain or loss. **The deductibility of capital losses may be subject to limitations, so United States holders are urged to consult with their own tax advisors about their particular tax consequences, including the potential deductibility of their capital losses, if any.** The United States holder will have an adjusted tax basis in the Intrexon voting common stock and CPRs received equal to their respective fair market value, and the holding period of the Intrexon voting common stock received by a United States holder pursuant to the merger will generally start anew. Additionally, if the merger is a taxable transaction, then the backup withholding rules would apply as well (see the section entitled Backup Withholding below).

Treatment of receipt, holding and disposition of CPRs

In general, the characteristics of the CPRs may cause the receipt of the merger consideration in the merger to be treated as an open transaction rather than a closed transaction for United States federal income tax purposes. There is no authority directly on point addressing whether a sale of property for, in whole or in part, CPRs with characteristics similar to the CPRs should be treated as an open transaction or closed transaction and such question is inherently factual in nature. Accordingly, United States holders are urged to consult their tax advisors regarding this issue. The installment method of reporting any gain attributable to the receipt of a CPR will not be available because GenVec common stock is traded on an established securities market. However, if the transaction were treated as an open transaction, gain recognition with respect to the CPRs may nevertheless be deferred.

The following sections discuss the possible tax consequences if the receipt of the merger consideration is treated as an open transaction or a closed transaction for federal income tax purposes. Intrexon and GenVec urge you to consult your tax advisor with respect to the proper characterization of the receipt of the CPRs.

Open transaction treatment

The receipt of the CPRs would generally be treated as part of an open transaction if the value of the CPRs cannot be reasonably ascertained. If the receipt of CPRs were treated as an open transaction for United States federal income tax purposes, a United States holder will not immediately take the CPRs into account in determining its capital gain (or loss, if allowed and applicable) on the receipt of CPRs upon consummation of the merger and a United States holder would take no tax basis in the CPRs.

Rather, subject to the Section 483 rules discussed below, the United States holder would recognize gain as payments in cash with respect to the CPRs are received or deemed received in accordance with the United States holder s regular method of accounting, but only to the extent the sum of (i) such payments (and all previous payments under the CPRs), and (ii) the fair market value the Intrexon voting common stock received upon consummation of the merger (if the merger does not qualify as a reorganization under Section 368(a) of the Code), exceeds such United States holder s adjusted tax basis in the GenVec common stock surrendered pursuant the merger. To the extent that all or a portion of any payments received with respect to the CPRs are paid in Intrexon voting common stock, it is possible that such payments should be treated as additional tax-free merger consideration. An adjustment to the tax basis in Intrexon voting common stock received would be made once it becomes known how many shares (if any) the holders of a CPR is entitled to receive. It is unclear how this adjustment should be made, particularly if the holder no longer retains all the Intrexon voting common stock or CPRs received in the merger. The IRS has not issued guidelines on how a shareholder should make this adjustment. A United States holder of GenVec common stock could recalculate its basis

in any remaining Intrexon voting common stock or additional Intrexon voting common stock received from the CPRs without recalculating the basis that had been allocated to any disposed merger consideration. Alternatively, a United

States holder of GenVec common stock could recalculate its basis in all of its Intrexon voting common stock, including additional Intrexon voting common stock received from the CPRs, even if the shareholder has disposed of some of its Intrexon voting common stock. Each United States holder of GenVec common stock should consult its own tax advisor as to the treatment of the receipt of any additional shares of Intrexon voting stock pursuant to the CPRs and the allocation of its tax basis among the Intrexon voting common stock.

Subject to the Section 483 rules discussed below, if the merger does not qualify as a reorganization under Section 368(a) of the Code, a United States holder who does not receive cumulative consideration having a fair market value at least equal to such United States holder s adjusted tax basis in the GenVec common stock surrendered pursuant the merger, will recognize a capital loss in the year that the United States holder s right to receive further payments under the CPRs terminates. As noted above, a United States holder will not be able to recognize such a capital loss if the merger is treated as a reorganization under Section 368(a) of the Code. The deductibility of any such capital losses may also be subject to applicable limitations.

If the transaction is treated as an open transaction, a payment pursuant to a CPR to a United States holder thereof should be treated as a payment under a contract for the sale or exchange of GenVec common stock to which Section 483 of the Code applies, or the Section 483 rules. The Section 483 rules will apply regardless of whether the transaction qualifies as a reorganization under section 368 of the Code. Under the Section 483 rules, a portion of the payments made pursuant to a CPR will be treated as interest, which will be ordinary income to the United States holder of a CPR. The interest amount will equal the excess of the amount received over its present value at the consummation of the merger, calculated using the applicable federal rate as the discount rate. The United States holder of a CPR must include in its taxable income interest pursuant to the Section 483 rules using such United States holder s regular method of accounting. The portion of the payment pursuant to a CPR that is not treated as interest under the Section 483 rules will generally be treated as a payment with respect to either the sale or exchange of GenVec common stock, as discussed above.

Closed transaction treatment

If the value of the CPRs can be reasonably ascertained, the transaction should generally be treated as closed for U.S. federal income tax purposes, and the receipt of the CPRs will be as set forth above in the section entitled Exchange of GenVec Common Stock for Intrexon Voting Common Stock, Cash in lieu of Fractional Shares, and CPRs. A United States holder s initial tax basis in the CPRs will equal the fair market value of the CPRs on the date of the consummation of the merger. The holding period of the CPRs will begin on the day following the date of the consummation of the merger.

There is no direct authority with respect to the tax treatment of holding and receiving payments with respect to the CPRs. Accordingly, the amount, timing, and character of any gain, income or loss with respect to the CPRs are uncertain. It is possible that payments received with respect to a CPR, up to the amount of the holder s adjusted tax basis in the CPR, may be treated as a non-taxable return of a United States holder s adjusted tax basis in the CPR, with any amount received in excess of basis treated as gain from the disposition of the CPR. Moreover, to the extent that all or a portion of any payments received with respect to the CPRs are paid in Intrexon voting common stock and the United States holder did not recognize gain upon the receipt of any CPR, it is possible that such payments should be treated as additional tax-free merger consideration. However, in the event a United States holder recognized gain upon the receipt of a CPR and subsequently receives all or a portion of any payments with respect to such CPR in Intrexon voting common stock, the U.S. federal income tax consequences are unclear. An adjustment to the tax basis in Intrexon voting common stock received would be made once it becomes known how many shares (if any) the holders of a CPR is entitled to receive. It is unclear how this adjustment should be made, particularly if the holder no longer retains all the Intrexon voting common stock or CPRs received in the merger. The IRS has not issued guidelines on

how a shareholder should make this adjustment. A United States holder of GenVec common stock could recalculate its basis in any remaining Intrexon voting common stock or additional Intrexon voting common stock received from the CPRs without recalculating the basis that had been allocated to any disposed merger consideration. Alternatively, a United

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States holder of GenVec common stock could recalculate its basis in all of its Intrexon voting common stock, including additional Intrexon voting common stock received from the CPRs, even if the shareholder has disposed of some of its Intrexon voting common stock. Each United States holder of GenVec common stock should consult its own tax advisor as to the treatment of the receipt of any additional shares of Intrexon voting stock pursuant to the CPRs and the allocation of its tax basis among the Intrexon voting common stock.

Additionally, a portion of any payment received with respect to a CPR may constitute imputed interest and therefore be taxed as ordinary income under the Section 483 rules. If not treated as described above, payments with respect to a CPR may be treated as either (i) payments with respect to a sale of a capital asset, including an option or a debt instrument, (ii) ordinary income (including interest income), or (iii) dividends. Finally, upon the expiration of the 36-month CPR payment period, it is possible that a United States holder may be permitted to recognize a loss to the extent a United States holder has not received payments with respect to a CPR up to the amount of the United States holder s adjusted tax basis in the CPR.

Medicare tax

A United States holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from such tax, will generally be subject to a 3.8% tax on the lesser of (i) the U.S. Holder s net investment income for a taxable year and (ii) the excess of the U.S. Holder s modified adjusted gross income for such taxable year over $200,000 ($250,000 in the case of joint filers). For these purposes, net investment income may include any gain realized or amounts received with respect to their shares of GenVec common stock or their CPRs not held in connection with certain trades or businesses, but will be reduced by any deductions properly allocable to such income or net gain. GenVec shareholders should consult their own tax advisors with respect to the applicability of this additional 3.8% tax on any payments received by such shareholder.

Reporting requirements

Each United States holder of GenVec common stock that receives Intrexon voting common stock, CPRs, and/or cash in the transaction will be required to file a statement with his, her or its U.S. federal income tax return setting forth his, her or its basis in the GenVec common stock surrendered and the fair market value of the Intrexon voting common stock, CPRs and cash, if any, received in the transaction, and to retain permanent records of these facts relating to the merger.

Backup withholding

Certain non-corporate United States holders of GenVec common stock may be subject to backup withholding, currently at a 28% rate, on cash payments received in connection with the transaction. Backup withholding generally will not apply, however, to a United States holder of GenVec common stock who:

- furnishes a correct taxpayer identification number and certifies that he, she or it is not subject to backup withholding on the substitute Internal Revenue Service Form W-9 (or successor form) included in the letter of transmittal to be delivered to the United States holders of GenVec common stock following the consummation of the transaction; or

- is otherwise exempt from backup withholding.

Any amounts withheld under the backup withholding rules will be allowed as a refund or credit against a United States holder s U.S. federal income tax liability, provided the holder furnishes the required information to the IRS.

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Description of Intrexon capital stock

A description of Intrexon s capital stock is contained in Intrexon s Registration Statement on Form 8-A, filed with the SEC on August 5, 2013, and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

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Comparison of rights of shareholders of Intrexon and GenVec

GenVec is incorporated under the laws of the State of Delaware and, accordingly, the rights of GenVec s shareholders are currently governed by the DGCL. Intrexon is incorporated under the laws of the Commonwealth of Virginia and, accordingly, the rights of Intrexon s shareholders are currently governed by the VSCA. Upon completion of the merger, the GenVec shareholders will receive shares of Intrexon common stock in exchange for their shares of GenVec common stock pursuant to the terms of the merger agreement and will become Intrexon shareholders. The rights of the former GenVec shareholders and the Intrexon shareholders will therefore be governed by the VSCA and by Intrexon s amended and restated articles of incorporation and Intrexon s amended and restated bylaws.

The table below summarizes material differences between the rights of GenVec s shareholders and those of Intrexon s shareholders pursuant to the DGCL, the VSCA and their respective constitutive documents as they are currently in effect. While Intrexon and GenVec believe that the summary table includes the material differences between the rights of their respective shareholders prior to the merger, this summary does not include a complete description of all the differences between the rights of Intrexon s shareholders and those of GenVec s shareholders, nor does it include a complete description of the specific rights of the respective shareholders discussed. The inclusion of differences in the rights in the table is not intended to indicate that all of such differences should necessarily be considered material by you or that other differences that you may consider equally important do not exist.

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Each of Intrexon and GenVec urge you to carefully read this entire proxy statement/prospectus, the relevant provisions of the VSCA, and the other documents to which Intrexon and GenVec refer in this proxy statement/prospectus for a more complete understanding of the differences between being a shareholder of GenVec and being a shareholder of Intrexon. Copies of Intrexon s amended and restated articles of incorporation, as currently in effect, referred to herein as Intrexon s articles of incorporation, and Intrexon s amended and restated bylaws, as currently in effect, referred to herein as Intrexon s bylaws, are attached as Exhibits 3.1 and 3.2, respectively, to the Registration Statement on Form S-4 of which this proxy statement/prospectus is a part. GenVec has filed with the SEC its amended and restated certificate of incorporation, as amended from time to time, referred to herein as GenVec s certificate of incorporation, the certificate of designation of its Series A Junior Participating Preferred Stock, par value $0.001 per share, referred to herein as the certificate of designation of Series A Preferred, the certificate of designation of its Series B Junior Participating Preferred Stock, par value $0.001 per share, referred to herein as the certificate of designation of Series B Preferred, and its amended and restated bylaws, referred to herein as GenVec s bylaws, each referenced in this summary of shareholder rights, and will send copies of these documents to you, free of charge, upon your request. See the section entitled Where you can find more information.

	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
Corporate Governance	Upon completion of the merger, the rights of Intrexon shareholders and former GenVec shareholders will be governed by the VSCA, Intrexon s articles of incorporation, and Intrexon s bylaws.	The rights of GenVec shareholders are governed by the DGCL and GenVec s certificate of incorporation and GenVec s bylaws.
Authorized Capital Stock	Intrexon s authorized capital stock consists of 200,000,000 shares of common stock, no par value per share, and 25,000,000 shares of preferred stock, no par value per share.	GenVec s authorized capital stock consists of 55,000,000 shares of common stock, $0.001 par value per share, and 5,000,000 shares of preferred stock, $0.001 par value per share, of which 30,000 of which are designated as Series B Participating Preferred.
	As of April 28, 2017, there were 119,565,470 shares of common stock issued and outstanding and no shares of preferred stock issued and outstanding.	As of April 28, 2017, there were 2,273,632 shares of common stock issued and outstanding and no shares of preferred stock issued and outstanding.
Special Meetings of Shareholders	Intrexon s bylaws provide that a special meeting may be called by the board of directors, the chairman of the board of directors or the chief executive officer. Intrexon s bylaws also provide that the vote of 25% of its shareholders is required to call a special meeting, and that its shareholders may only conduct business at special meetings of its	A special meeting of the shareholders may be called only by the president of GenVec, or by the board of directors pursuant to a resolution adopted by a majority of the members of the board of directors then in office or by written consent executed by all of the members of the board of directors. In accordance with the DGCL and GenVec s bylaws,

shareholders that was specified in the notice of the meeting.	written notice of the place, date and hour, and purpose of the special meeting must be given not less than ten (10) nor more than sixty (60) days before the date of the meeting.

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
Shareholder Nominations and Shareholder Proposals	Intrexon s bylaws provide that nominations for the election of directors may be made at an annual shareholder meeting only (i) pursuant to Intrexon s notice of meeting (or any supplement thereto), (ii) by or at the direction of the board or (iii) by any shareholder of Intrexon who (a) was a shareholder of record of Intrexon (and, with respect to any beneficial owner, if different, on whose behalf such nominations or proposal of other business are made, only if such beneficial owner was the beneficial owner of shares of Intrexon) at the time the notice provided for in its bylaws is delivered to the Secretary and at the time of the annual meeting, (b) is entitled to vote at the meeting, and (c) complies with the notice procedures set forth in its bylaws. To comply with the notice procedures set forth in Intrexon s bylaws, a shareholder must have given notice thereof in writing to the Secretary and any such proposed business other than the nominations of persons for election to the board must constitute a proper matter for shareholder action. To be timely, a shareholder s notice shall be delivered to the Secretary at Intrexon s principal executive offices not later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year s annual meeting; provided, however, that in the event that the date of the annual meeting is more than 30 days before or more than 70 days after such anniversary date, notice by such shareholder must be so delivered not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such	GenVec s bylaws provide that proposals for a shareholder vote must include (i) the names and business addresses of the shareholder submitting the proposal, referred to herein as the Proponent, and all persons or entities acting in concert with the Proponent; (ii) the names and addresses of the Proponent and the persons or entities identified in clause (i) above, as they appear on GenVec s books (if they so appear); (iii) the class and number of shares beneficially owned by the Proponent and the persons and entities identified in clause (i); (iv) a description of the proposal containing all material information relating thereto; and (v) such other information as the board of directors reasonably determines is necessary or appropriate to enable the board of directors and shareholders of GenVec to consider the proposal. GenVec s bylaws also provide that nominations for the election of directors shall be made by written notice, which shall set forth: (i) as to each individual nominated, (A) the name, date of birth, business address and residence address of such individual; (B) the business experience during the past five years of such nominee, including his or her principal occupations and employment during such period, the name and principal business of any corporation or other organization in which such occupations and employment were carried on and such other information as to the nature of his responsibilities and level of professional competence as may be sufficient to permit assessment of his prior business experience; (C) whether the nominee is or has ever been at any time a director, officer or owner of more than five percent (5%) or more of any class of capital stock, partnership interests or other equity interest of any corporation, partnership or other entity;

meeting is first made by Intrexon. To (D) any directorships held by

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Rights of Intrexon Shareholders	Rights of GenVec Shareholders
be in proper form, a s shareholder s notice to the Secretary must: (i) set forth, as to the shareholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made: (a) the name and address of such shareholder, as they appear on Intrexon s books, and of such beneficial owner, if any; (b) (1) the class or series and number of shares of Intrexon which are, directly or indirectly owned beneficially and of record by such shareholder rand such beneficial owner; (2) any option, warrant, convertible security, stock appreciation right, or similar right with an exercise or conversion privilege or a settlement payment or mechanism at a price related to any class or series of shares of Intrexon or with a value derived in whole or in part from the value of any class or series of shares of Intrexon, whether or not such instrument or right shall be subject to settlement in the underlying class or series of capital stock of Intrexon or otherwise, referred to herein as a Derivative Instrument, directly or indirectly owned beneficially by such shareholder and such beneficial owner and any other direct or indirect opportunity to profit or share in any profit derived from any increase or decrease in the value of shares of Intrexon; (3) any proxy, contract, arrangement, understanding, or relationship pursuant to which such shareholder and such beneficial owner has a right to vote any shares of any security of Intrexon; (4) any short interest in any security of Intrexon; (5) any rights to dividends on the shares of Intrexon owned beneficially by such shareholder and such beneficial owner that are separated or separable from the underlying shares of Intrexon; (6) any proportionate interest in shares of Intrexon or Derivative Instruments held, directly or indirectly, by a general or	such nominee in any company with a class of securities registered pursuant to Section 12 of the Exchange Act, as amended, or subject to the requirements of Section 15(d) of such Act or any company registered as an investment company under the Investment Company Act of 1940, as amended; and (E) whether, in the last five years, such nominee has been convicted in a criminal proceeding or has been subject to a judgment, order, finding or decree of any federal, state or other governmental entity, concerning any violation of federal, state or other law, or any proceeding in bankruptcy, which conviction, judgment, order, finding, decree or proceeding may be material to an evaluation of the ability or integrity of the nominee; and (ii) as to the shareholder nominating such director candidate, and any persons or entities acting in concert with such nominating shareholder, (x) the names and business addresses of such nominating shareholder and such persons or entities, (y) the names and addresses of such nominating shareholder and such persons or entities as they appear on GenVec s books (if they so appear), and (z) the class and number of shares of GenVec which are beneficially owned by such nominating shareholder and such persons and entities. In addition, a written consent to being named in a proxy statement as a nominee, and to serve as a director if elected, signed by the nominee, shall be filed with any nomination notice. If the presiding officer at any shareholders meeting determines that a nomination was not made in accordance with the procedures prescribed by GenVec s bylaws, such officer will so declare to the meeting and the defective nomination will be disregarded.

limited partnership in which

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such shareholder and such beneficial owner is a general partner or, directly or indirectly, beneficially owns an interest in a general partner; (7) any performance-related fees (other than an asset-based fee) that such shareholder and such beneficial owner is entitled to based on any increase or decrease in the value of shares of Intrexon or Derivative Instruments, if any, as of the date of such notice, including without limitation any such interests held by members of such shareholder and such beneficial owner s immediate family sharing the same household (which information shall be supplemented by such shareholder and beneficial owner, if any, not later than 10 days after the record date for the meeting to disclose such ownership as of the record date); (c) any other information relating to such shareholder and beneficial owner, if any, that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for, as applicable, the proposal and/or for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder; (d) a statement whether such shareholder or any other person known to the shareholder will deliver a proxy statement and form of proxy to holders of at least the percentage of Intrexon s voting shares required under applicable law to carry the proposal; and (e) a representation that the shareholder is a holder of record of stock of Intrexon entitled to vote at such meeting and intends to appear in person or by proxy at the meeting to make the nomination or propose such business specified in the notice before the meeting; (ii) if the notice relates to any business other than a nomination of a director or directors that the shareholder proposes to bring before	Nomination notices and shareholder proposals for an annual shareholders meeting must be delivered to GenVec s secretary at its principal executive offices not less than one hundred twenty (120) days nor more than one hundred fifty (150) days prior to the anniversary of the mailing date of GenVec s proxy materials for the preceding annual meeting of shareholders; provided, however, that in the event that the annual meeting is called for a date that is not within thirty (30) days before or after the anniversary date of such meeting, notice by the shareholder to be timely must be so delivered not later than the close of business on the tenth (10th) day following the day on which notice of the date of the annual meeting was mailed to shareholders or public disclosure of the date of the annual meeting was made, whichever first occurs. The public announcement of an adjournment of an annual meeting will not commence a new time period for the giving of a shareholder s notice as described above.

the meeting, set forth: (a) a brief

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description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest of such shareholder and beneficial owner, if any, in such business; (b) the complete text of any resolutions intended to be presented at the meeting and in the event that such business includes a proposal to amend the bylaws of Intrexon, the language of the proposed amendment; and (c) a description of all agreements, arrangements and understandings between such shareholder and beneficial owner, if any, and any other person or persons (including their names) in connection with the proposal of such business by such shareholder; (iii) set forth, as to each person, if any, whom the shareholder proposes to nominate for election or reelection to the Intrexon board of directors: (a) all information relating to such person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder (including such person s written consent to being named in the proxy statement as a nominee and to serving as a director if elected) and;	
(b) a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three years, and any other material relationships, between or among such shareholder and the beneficial owner, if any, and their respective affiliates and associates, or others acting in concert therewith, on the one hand, and each proposed nominee, and his or her	

respective affiliates and associates, or
others acting in concert therewith, on the

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	other hand, including, without limitation all information that would be required to be disclosed pursuant to Rule 404 promulgated under Regulation S-K under the Exchange Act if the shareholder making the nomination and any beneficial owner on whose behalf the nomination is made, if any, or any affiliate or associate thereof or person acting in concert therewith, were the registrant for purposes of such rule and the nominee were a director or executive officer of such registration; and	
	(iv) with respect to each nominee for election or reelection to the board, include a completed and signed questionnaire, representation and agreement as required by the bylaws.	
Shareholder Action by Written Consent	The VSCA allows action by written consent to be made by the shareholders in lieu of a shareholder s meeting if the action is adopted or taken by all the shareholders entitled to vote on the action. Under the VSCA, the corporation s articles of incorporation may authorize action by shareholders by less than unanimous written consent provided that the taking of such action is consistent with any requirements that may be set forth in Intrexon s articles of incorporation, the bylaws, or the VSCA.	GenVec s certificate of incorporation provides that no action that is required or permitted to be taken by the shareholders may be effected by written consent in lieu of a meeting of shareholders.
	Intrexon s bylaws do not provide for action by shareholders by less than unanimous written consent.	
Number of Directors	Intrexon s bylaws provide that the number of directors constituting the board shall be designated by resolution of the board, but shall not be more than ten (10); provided that no decrease in the number of directors shall shorten or	GenVec s bylaws provide that the board of directors shall be the number from time to time fixed exclusively by a vote of a majority of the board of directors then in office, which number shall not be less than one (1).

terminate the term of any incumbent director. Intrexon s articles of incorporation provide that the board of directors shall consist of a number of directors as shall be specified in accordance with the bylaws.	There are currently seven (7) directors serving on the GenVec board of directors.

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	There are currently eight (8) directors serving on the Intrexon board of directors.	
Election of Directors	Intrexon s bylaws provide that a nominee for director shall be elected to the board if the votes cast for such nominee s election exceed the votes cast against such nominee s election; provided, however, that such directors shall be elected by a plurality of the votes cast at any meeting of the shareholders for which (i) the Secretary receives a notice that shareholder has nominated a person for election to the board in compliance with the advance notice requirements for shareholder nominees for director set forth in the bylaws, and (ii) such nomination has not been withdrawn by such shareholder on or prior to the 10th day preceding the date Intrexon first mails its notice of meeting for such meeting to the shareholders. If directors are to be elected by a plurality of the votes cast, the shareholders shall not be permitted to vote against a nominee.	GenVec s certificate of incorporation provides that the board of directors shall be divided into three classes, with each class to be as nearly equal in number as reasonably possible, and with each class to serve staggered three year terms. If the number of directors is changed, any increase or decrease shall be apportioned among the classes so as to maintain or attain, if possible, the number of directors in each class as nearly equal as reasonably possible, but in no case will a decrease in the number of directors shorten the term of any incumbent director. GenVec s bylaws provide that the board of directors may from time to time increase or decrease the number of directors to any number not less than one, provided that the number of directors shall not be increased by 50% or more in any 12-month period without the approval of at least 80% of the members of the board of directors then in office. GenVec s bylaws provide that all elections for directors shall be decided by a plurality of the votes of shares present in person or represented by proxy at the meeting and entitled to vote in the election of directors. Abstentions shall not be considered to be votes cast. Further, vacancies and newly created directorships resulting from any increase

in the authorized number of directors may be filled only by a majority of the remaining directors then in office, although less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next

election of the class for which such directors have been chosen and until their successors are duly elected and

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		qualified. If at any time there are no directors in office, by reason of death, resignation or other cause, then any shareholders or any executor or administrator or other fiduciary entrusted with like responsibility for the estate of a shareholder may call a special meeting of the shareholders to elect the directors. If at the time of filling any vacancy or any newly created directorship, the directors then in office shall constitute less than a majority of the board of directors (as constituted immediately prior to any such increase), the Court of Chancery of the State of Delaware may, upon application of any shareholder or shareholders holding at least ten percent of the total number of the shares outstanding at the time and having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office.
		Notwithstanding anything to the contrary in the above paragraphs, the certificate of designation of the Series B Preferred provides that, under certain limited circumstances arising when dividends on any Series B Preferred shares are in arrears, the holders of the Series B Preferred have the right to elect up to two directors.
Removal of Directors	The VSCA provides that shareholders may remove directors with or without cause by the affirmative vote of the holders of at least a majority of the stock entitled to vote generally in the election of directors unless the corporation s articles of incorporation provide that directors may only be removed with cause. Intrexon s articles of incorporation provide that, subject to the rights of	Subject to the rights given to the holders of shares of Series B Preferred pursuant to the certificate of designation of the Series B Preferred, GenVec s certificate of incorporation provides that any director may be removed only for cause by the affirmative vote of the holders of at least 80% of the voting power of all of the shares of GenVec s capital stock then entitled to vote generally in the election

preferred shareholders, directors may be removed only with cause and only by the affirmative vote of a majority of the votes entitled to be of directors, voting together as a single class.

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
	cast by each voting group that is entitled to vote generally in the election of directors.	
Limitation on Liability of Directors	The VSCA provides that in any proceeding brought by or in the right of a corporation or brought by or on behalf of shareholders of a corporation, the damages assessed against an officer or director arising out of a single transaction, occurrence or course of conduct may not exceed the lesser of (i) the monetary amount, including the elimination of liability, specified in the corporation s articles of incorporation or, if approved by the shareholders, in the bylaws as a limitation on or elimination of the liability of the officer or director or (ii) the greater of (a) $100,000 or (b) the amount of cash compensation received by the officer or director from the corporation during the 12 months immediately preceding the act or omission for which liability was imposed. The liability of an officer or director is not limited under the VSCA or the corporation s articles of incorporation and bylaws if the officer or director engaged in willful misconduct or a knowing violation of the criminal law or of any federal or state securities law.	The DGCL provides that a provision eliminating or limiting the personal liability of a director to the corporation or its shareholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director: (i) for any breach of the director s duty of loyalty to the corporation or its shareholders; (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) under Section 174 of the DGCL; or (iv) for any transaction from which the director derived an improper personal benefit. No such provision shall eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision becomes effective.
	Intrexon s articles of incorporation provide that, to the fullest extent that the VSCA, as it exists or as it may hereafter be amended, permits the limitation or elimination of the liability of directors and officers in a proceeding brought by or in the right of Intrexon or brought by or on behalf of the Intrexon shareholders, a director or officer of Intrexon shall not be liable to Intrexon or its shareholders for monetary damages arising out of a single transaction occurrence or course of conduct in excess of $1.00. Notwithstanding the foregoing, the liability of a director or officer shall	GenVec s certificate of incorporation provides that a director shall, to the maximum extent permitted by the laws of Delaware, have no personal liability to GenVec or its shareholders for monetary damages for breach of fiduciary duty as a director, provided that this limitation on liability shall not eliminate or reduce the liability of a director in any case where such elimination or reduction is not permitted by law.

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	not be eliminated if the director or officer engaged in willful misconduct or a knowing violation of criminal law or of any federal or state securities law, including without limitation, any claim of unlawful insider trading or manipulation of the market for any security.	
Indemnification of Directors and Officers	Under the VSCA, unless limited by its articles of incorporation, a corporation must indemnify a director or officer who entirely prevails in the defense of any proceeding to which he was a party because he is or was a director or officer of the corporation against reasonable expenses incurred by him in connection with the proceeding. The VSCA permits a corporation to indemnify, after a determination has been made that indemnification of the director is permissible in the circumstances because he has met the following standard of conduct, an individual made a party to the proceeding because he is or was a director against liability incurred in the proceeding if (i) he conducted himself in good faith; (ii) he believed that his official conduct was in the best interest of the corporation and all other non-official conduct was not opposed to the corporation s best interest; and (iii) in the case of a criminal proceeding, he had no reasonable basis to believe his conduct was unlawful. Under the VSCA, corporation may not indemnify a director or officer in connection with a proceeding by or in which the director or officer is adjudged liable on the basis that he received an improper personal benefit. A director or officer also cannot be indemnified in connection with a proceeding by or in the right of the corporation in which the	Under the DGCL, a corporation may indemnify any directors, officers, employees and agents of the corporation, or any person who is or was serving at the request of the corporation as a director, officer, employee or agent of another entity, against expenses and liabilities actually and reasonably incurred by such person in connection with any action, suit or proceeding (except in the case of an action by or in the right of the corporation) involving such person by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another entity, provided that (i) such person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, such person had no reasonable cause to believe his conduct was unlawful and (ii) in the case of an action by or in the right of the corporation, no indemnification of expenses may be made in respect of any matter as to which such person is adjudged liable to the corporation unless and only to the extent such indemnification is approved by a court. The DGCL mandates such indemnification of expenses to the extent that a present or former director or officer of the corporation has been successful in defense of any proceeding

director or officer was adjudged liable to the corporation. In addition, under the VSCA, any corporation may indemnify, including an indemnity described above, and permits advancement of expenses to a director or officer if the

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with respect to a proceeding by or in the right of the corporation, and may provide for advances or reimbursement of expenses to, any director, officer, employee or agent that is authorized by the corporation s articles of incorporation or any bylaw approved by the shareholders or any resolution adopted before or after the subject event by the shareholders, except an indemnity against willful misconduct or a knowing violation of criminal law.	corporation receives an undertaking that the amount advanced will be repaid if it is determined that such person is not entitled to indemnification. The DGCL also provides that the permitted indemnifications described above are not exclusive.
Intrexon s articles of incorporation require indemnification of directors and officers with respect to certain liabilities, expenses, and other amounts imposed on them by reason of having been a director or officer, except in the case of willful misconduct or a knowing violation of criminal law.	GenVec s certificate of incorporation provides that each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact: (a) that he or she is or was a director or officer of GenVec, or
Unless ordered by a court of competent jurisdiction, any indemnification pursuant to Intrexon s articles of incorporation shall be made by Intrexon only as authorized in the specific case upon a determination that indemnification of the individual is permissible in the circumstances because he or she met the standard of conduct that warrants indemnification, as discussed above. Such determination shall be made: (i) if there are two or more disinterested directors, by the board by a majority vote of all disinterested directors, a majority of whom shall constitute a quorum; or by a majority vote of a committee consisting of two or more disinterested directors appointed by such a vote; or (ii) by special legal counsel selected by the board or its committee in the manner heretofore	(b) that he or she, being at the time a director or officer of GenVec, is or was serving at the request of GenVec as a director, trustee, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan, whether either in case (a) or in case (b) the basis of such proceeding is alleged action or inaction (x) in an official capacity as a director or officer of GenVec, or as a director, trustee, officer, employee or agent of such other enterprise, or (y) in any other capacity related to GenVec or such other enterprise while so serving as a director, trustee, officer, employee or agent, shall be indemnified and held harmless by GenVec to the fullest extent not prohibited by Section 145 of the DGCL (or any successor provision or provisions) as the same exists or may

provided or, if there are fewer than two disinterested directors, selected by a majority vote of the board (in which selection directors who do not qualify as disinterested directors may participate); or (iii) by the shareholders, but shares owned by or voted under the control of individuals

hereafter be amended (but, in the case of any such amendment, with respect to actions taken prior to such amendment, only to the extent that such amendment permits GenVec to provide broader indemnification rights than permitted prior thereto), against

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	who at the time do not qualify as disinterested directors may not be voted on the determination. Authorization of indemnification, evaluation as to reasonableness of expenses and determination and authorization of advancements for expenses shall be made in the same manner as the determination that indemnification is permissible, except that if there are fewer than two disinterested directors or if the determination is made by special legal counsel, authorization of indemnification and evaluation as to reasonableness of expenses shall be made by those selecting such counsel. Notwithstanding the foregoing, in the event there has been a change in the composition of a majority of the board after the date of the alleged act or omission with respect to which indemnification is claimed, any determination as to indemnification and advancement of expenses with respect to any claim for indemnification made pursuant to Intrexon s articles of incorporation shall be made by special legal counsel agreed upon by the board and the applicant. If the board and the applicant are unable to agree upon such special legal counsel the board and the applicant each shall select a nominee, and the nominees shall select such special legal counsel	all expense, liability and loss (including, without limitation, attorneys fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) incurred or suffered by such person in connection therewith. Such indemnification as to such alleged action or inaction shall continue as to an indemnitee who has after such alleged action or inaction ceased to be a director or officer of GenVec, or director, officer, employee or agent of another enterprise; and shall inure to the benefit of the indemnitee s heirs, executors, administrators, and personal or legal representatives, provided, however, that except for proceedings to enforce rights to indemnification, GenVec shall not be obligated to indemnify any director of officer (or his or her heirs, executors, administrators, or personal or legal representatives) in connection with a proceeding (or part thereof) initiated by such person unless such proceeding (or part thereof) was authorized or consented to by the board of directors. The right to indemnification conferred in GenVec s certificate of incorporation (i) shall be a contract right; (ii) shall not be affected adversely as to any indemnitee by any amendment of GenVec s certificate of incorporation with respect to any action or inaction occurring prior to such amendment; and (iii) shall, subject to any requirements imposed by law, GenVec s certificate of incorporation or GenVec s bylaws, include the right to have paid by GenVec the expenses incurred in defending any such proceeding in advance of its final disposition.
Amendments to Certificate/Articles of Incorporation	The VSCA generally requires that any amendment to a corporation s articles of incorporation be approved by each voting group entitled to vote on the proposed amendment by at least	The DGCL provides that an amendment to GenVec s certificate of incorporation must be adopted by the board of directors through a resolution setting forth the proposed amendment,

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	two-thirds of all the votes entitled to be cast by that voting group, unless the VSCA otherwise requires a greater vote or such corporation s articles of incorporation provide for a greater or lesser vote, or a vote by separate voting groups, so long as the vote provided for is not less than a majority of all the votes cast on the amendment by each voting group entitled to vote.	declaring its advisability and either calling a special meeting of the shareholders or directing that the amendment proposed be considered at the next annual meeting of the shareholders. At the meeting, the shareholders must approve the amendment by a majority of outstanding shares entitled to vote (and a majority of the outstanding shares of each class entitled to vote, if any). Additionally, if the amendment adversely affects any class of shares, the shareholders holding a majority of the outstanding shares of such class must affirmatively vote to adopt the amendment.
	Intrexon s articles of incorporation provide that an amendment or restatement of its articles of incorporation for which the VSCA requires shareholder approval shall be approved by a majority of the votes entitled to be cast by each voting group that is entitled to vote on the matter, unless in submitting any such matter to the shareholders the board shall require a greater vote.	GenVec s certificate of incorporation provides that any amendment, alteration, change or repeal of Articles V, VI, XI, XII and XIII of GenVec s certificate of incorporation shall require the affirmative vote of the holders of at least 80% of the voting power of all of the shares of capital stock of GenVec then entitled to vote generally in the election of directors, voting together as a single class. Any other amendment, alteration, change or repeal of any other provision of GenVec s certificate of incorporation requires the affirmative vote of both (a) a majority of the members of the board of directors then in office and (b) a majority of the voting power of all of the shares of capital stock of GenVec entitled to vote generally in the election of directors, voting together as a single class.
Amendments to Bylaws	Under the VSCA, unless other provision is made in a corporation s articles of incorporation or bylaws, a majority of the directors or a majority of the shareholders present and entitled to vote may adopt, amend or repeal the bylaws.	The DGCL provides that the shareholders, and, when provided for in the corporation s certificate of incorporation, the board of directors of the corporation, have the power to adopt, amend and repeal the bylaws of a corporation.

Intrexon s articles of incorporation provides that the board of directors is	GenVec s certificate of incorporation provides that any proposed

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
	expressly authorized and empowered to adopt, amend or repeal the bylaws, provided, however, that bylaws adopted by the board pursuant to this power may be altered, amended or repealed by the board or by the shareholders having voting power with respect thereto. In the case of any such action by shareholders, the affirmative vote of the holders of a majority of the voting power of the then outstanding voting stock, voting together as a single voting group, shall be required in order for the shareholders to alter, amend or repeal any provision of the bylaws or to adopt any additional bylaw.	amendment, alteration, change or repeal of, or any proposed adoption of GenVec s bylaws inconsistent with any of Sections 2.3, 2.9, 2.11, 3.2, or 3.3 or Article VIII therein shall require the affirmative vote of at least eighty percent (80%) of the voting power of all shares of capital stock of GenVec then entitled to vote generally in the election of directors voting as a single class.
Vote on Certain Fundamental Issues	The VSCA provides that, unless a corporation s articles of incorporation provide for a higher or lower vote, specified significant corporate actions must be approved by the affirmative vote of the holders of at least two-thirds of the votes entitled to be cast on the matter. Corporate actions requiring at least a two-thirds vote include an amendment to a corporation s articles of incorporation, adoption of plans of merger or exchange, sales of all or substantially all of the corporation s assets other than in the ordinary course of business and adoption of plans of dissolution. The VSCA provides that a corporation s articles may either increase the vote required to approve these actions or may decrease the required vote to not less than a majority of the votes entitled to be cast. Intrexon s articles of incorporation provide that such fundamental actions for which the VSCA requires shareholder approval shall be approved by a majority of the votes entitled to be cast by each voting group that is entitled to vote on	Under the DGCL, the board of directors of each corporation which desires to merge or consolidate shall adopt a resolution approving an agreement of merger or consolidation and declaring its advisability. The agreement shall then be submitted to the shareholders of each constituent corporation at an annual or special meeting for the purpose of acting on the agreement. Such corporation must give notice of such meeting to each shareholder at least 20 days prior to the date of the meeting. If a majority of the outstanding stock of the corporation entitled to vote thereon shall be voted for the adoption of the agreement, that fact shall be certified on the agreement by the secretary or assistant secretary of the corporation, provided that such certification on the agreement shall not be required if a certificate of merger or consolidation is filed in lieu of filing the agreement. If the agreement shall be so adopted and certified by each constituent corporation, it shall then be filed and shall become effective, in accordance with § 103 of the DGCL.

the matter, unless in GenVec s bylaws provide that, except as otherwise provided by statute or by

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
	submitting any such matter to the shareholders the board shall require a greater vote.	GenVec s certificate of incorporation, any corporate action, other than the election of directors, to be taken by vote of the shareholders, shall be authorized by a majority of votes cast at the meeting of shareholders by the holders of shares entitled to vote thereon. GenVec s certificate of incorporation does not address the issue.
Certain Business Combinations Restrictions	The VSCA contains provisions governing affiliated transactions. In general, these provisions prohibit a corporation from engaging in affiliated transactions with any holder of more than 10 percent of any class of its outstanding voting shares, or an interested shareholder, for a period of three years following the date that such person became an interested shareholder unless: a majority of (but not fewer than two) disinterested directors of Intrexon and the holders of two-thirds of the voting shares, other than the shares beneficially owned by the interested shareholder, approve the affiliated transaction; or before or on the date the person became an interested shareholder, a majority of disinterested directors approved the transaction that resulted in the shareholder becoming an interested shareholder. Affiliated transactions subject to this approval requirement include mergers, share exchanges, material dispositions of corporate assets not in the ordinary	Under the DGCL, except under certain circumstances, a corporation is not permitted to engage in a business combination with any interested shareholder for a period of three years following the date such shareholder became an interested shareholder. An interested shareholder is (i) is the owner of 15% or more of the outstanding voting stock of the corporation, or (ii) is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within the three-year period immediately prior to the date on which it is sought to be determined whether such person is an interested shareholder, and the affiliates and associates of such person. The DGCL permits a corporation to opt out of the application of these business combinations provisions by so providing in the corporation s certificate of incorporation; GenVec has not opted out of these provisions.

course of business, any dissolution of Intrexon proposed by or on behalf of an interested shareholder or any reclassification, including reverse stock splits, recapitalizations or mergers of the corporation with its subsidiaries, which increases the

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
	percentage of voting share owned beneficially by an interested shareholder by more than five percent. The VSCA permits a corporation to exempt itself from this statutory provision by placing a statement to that effect in its articles of incorporation. Intrexon s articles of incorporation do not specifically address the VSCA regarding affiliated transactions; therefore, Intrexon is subject to this provision.	
Exclusive Forum Provision	Intrexon s bylaws provide that unless Intrexon consents in writing to the selection of an alternative forum, the United States District Court for the Eastern District of Virginia, Alexandria Division, or in the event that court lacks subject matter jurisdiction to hear such action, the Circuit Court of the County of Fairfax, Virginia, shall be the sole and exclusive forum of (i) any derivative action or proceeding brought on behalf of Intrexon, (ii) any action for breach of duty to Intrexon or the shareholders by any current or former officer or other employee or agent or director of Intrexon, (iii) any action against Intrexon or any current or former officer or other employee or agent or director of Intrexon arising pursuant to any provision of the VSCA or Intrexon s articles of incorporation or Intrexon s bylaws, or (iv) any action against Intrexon or any current or former officer or other employee or agent or director of Intrexon governed by the internal affairs doctrine.	Neither of GenVec s certificate of incorporation nor bylaws provide for an exclusive forum for shareholder litigation.
Shareholder Rights Plan	Intrexon has no shareholder rights plan.	GenVec has entered into a rights agreement, as amended, which provides that the board of directors of GenVec may grant each shareholder a right to receive, upon exercise, common stock or other equity interest of the ultimate parent of an acquirer of GenVec, valued

at two times the exercise price of such right. The

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	Rights of Intrexon Shareholders	Rights of GenVec Shareholders
		amendment to the rights agreement provides that such rights described in the previous sentence will not be applicable to the merger and any transaction related thereto. See the section entitled Amendment to the rights agreement for a full description of the rights granted under the rights agreement, as amended.
Rights of Preferred Stock	Under Intrexon s articles of incorporation, the Intrexon board of directors has the authority, without shareholder action, to establish the relative rights and preferences of the shares of the preferred stock, including the applicable dividend rate, amounts payable upon a liquidation or dissolution of Intrexon, redemption rights and conversion rights.	Subject to the certificate of designation of the Series B Preferred and the DGCL, GenVec s certificate of incorporation grants the GenVec board of directors the authority to establish the relative rights and preferences of the shares of the preferred stock, including the applicable dividend rate, redemption rights, conversion rights, voting rights, restrictions on transfer, and rights upon a liquidation or dissolution of GenVec.
Dividends and Other Distributions	Intrexon s articles of incorporation provide that, if any shares of preferred stock are outstanding, Intrexon cannot declare and pay or set apart for payment any dividends (other than dividends payable in common stock or other stock of Intrexon raking junior to the preferred stock as to dividends) or make any other distribution on such junior stock if, at the time of making such declaration, payment or distribution, Intrexon is in default with respect to any dividend payable, or any obligation to redeem any shares of preferred stock.	Subject to any preferences that may be applicable to any preferred stock outstanding at the time, GenVec s certificate of incorporation provides that the holders of common stock (i) have the right to receive dividends when, as and if properly declared by the GenVec board of directors in its sole discretion and (ii) to receive ratably all the assets of GenVec remaining after payment to creditors of GenVec upon the liquidation, dissolution or winding up of GenVec.

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Appraisal rights

Under Delaware law, holders of GenVec common stock who do not wish to accept the merger consideration provided for in the merger agreement have the right to seek appraisal of their shares of GenVec common stock in the Delaware Court of Chancery and to receive payment in cash for the fair value of those shares (exclusive of any element of value arising from the accomplishment or expectation of the merger), as determined by the Delaware Court of Chancery, together with interest, if any, to be paid upon the amount so determined to be fair value. These rights are known as appraisal rights. Shareholders may only exercise these appraisal rights by strictly complying with the provisions of Section 262 of the DGCL. Any GenVec shareholders who properly exercise these appraisal rights and are awarded fair value for their shares will receive payment of such fair value in cash, together with interest, if any, in lieu of the right to receive the merger consideration.

The following is intended as a brief summary of the material provisions of the Delaware statutory procedures required to be followed by a shareholder in order to dissent from the merger and perfect its appraisal rights. This summary, however, is not a complete statement of all applicable requirements and is qualified in its entirety by reference to Section 262 of the DGCL, the full text of which appears in Annex D to this proxy statement/prospectus. All references in Section 262 of the DGCL and in this summary to a shareholder are to a record holder of shares of GenVec common stock. Failure to precisely follow any of the statutory procedures set forth in Section 262 of the DGCL may result in a termination or waiver of your appraisal rights. This summary does not constitute legal or other advice, nor does it constitute a recommendation that holders of GenVec common stock exercise their appraisal rights.

Under Section 262 of the DGCL, GenVec is required to notify each of its shareholders (as determined on the record date for notice of the special meeting) of the availability appraisal rights not less than 20 days prior to the special meeting. Such notice must include a copy of Section 262 of the DGCL. This proxy statement/prospectus constitutes the notification to GenVec shareholders of the availability of appraisal rights in connection with the merger in compliance with the requirements of Section 262 of the DGCL, and a copy of Section 262 of the DGCL is attached to this proxy statement/prospectus as Annex D. If you wish to consider exercising your appraisal rights or to preserve your right to do so, you should carefully review the text of Section 262 of the DGCL contained in Annex D to this proxy statement/prospectus. Failure to strictly comply with the requirements of Section 262 of the DGCL in a timely and proper manner will result in the loss of your appraisal rights under Delaware law.

Holders of shares of GenVec common stock who desire to exercise their appraisal rights must do ALL of the following: (i) not vote in favor of the merger, (ii) deliver a written demand for appraisal of his or her shares of GenVec common stock to the Corporate Secretary of GenVec before the vote on the merger at the special meeting, (iii) continuously hold the shares from the date of making the demand through the effective time of the merger and (iv) file, or cause the surviving corporation to file, a petition in the Delaware Court of Chancery requesting a determination of the fair value of the shares within 120 days after the effective time of the merger. A demand for appraisal must reasonably inform GenVec of the identity of the shareholder and that such shareholder intends thereby to demand appraisal of the shares of GenVec common stock held by such shareholder. All demands for appraisal should be addressed to GenVec, Inc., 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878, Attention: Corporate Secretary, and should be executed by, or on behalf of, the record holder of shares of GenVec common stock. **ALL DEMANDS MUST BE RECEIVED BY GENVEC BEFORE THE VOTE ON THE MERGER AT THE SPECIAL MEETING AT 8:30 A.M. EASTERN DAYLIGHT TIME ON JUNE 15, 2017.**

Because a proxy that is signed and submitted but does not otherwise contain voting instructions will, unless revoked, be voted as recommended by the GenVec board of directors, and because the GenVec board of directors has recommended that shareholders vote in favor of adoption of the merger agreement, if a shareholder votes by proxy and wishes to exercise his, her or its appraisal rights, such shareholder must vote against the adoption of the merger or

abstain from voting his, her or its shares. Voting, in person or by proxy, against, abstaining from

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voting on or failing to vote on the adoption of the merger agreement will not constitute a written demand for appraisal as required by Section 262 of the DGCL. The written demand for appraisal must be in addition to and separate from any proxy or vote.

If you fail to deliver a written demand for appraisal within the time period specified above and the merger is completed, you will be entitled to receive the merger consideration for your shares of GenVec common stock as provided for in the merger agreement, but you will have no appraisal rights with respect to your shares of GenVec common stock.

To be effective, a demand for appraisal by a holder of shares of GenVec common stock must be made by, or in the name of, the registered shareholder, fully and correctly, as the shareholder s name appears in GenVec s stock ledger. **Beneficial owners who do not also hold the shares of record may not directly make appraisal demands to GenVec. The beneficial owner must, in these cases, have the registered owner, such as a broker, bank or other custodian, submit the required demand in respect of those shares.** If shares are owned of record in a fiduciary capacity, such as by a trustee, guardian or custodian, execution of a demand for appraisal should be made by or for the fiduciary; and if the shares are owned of record by more than one person, as in a joint tenancy or tenancy in common, the demand should be executed by or for all joint owners. An authorized agent, including an authorized agent for two or more joint owners, may execute the demand for appraisal for a shareholder of record; however, the agent must identify the record owner or owners and expressly disclose the fact that, in executing the demand, he or she is acting as agent for the record owner. A record owner, such as a broker, who holds shares as a custodian for others, may exercise the record owner s right of appraisal with respect to the shares held for one or more beneficial owners, while not exercising this right for other beneficial owners. In that case, the written demand should state the number of shares as to which appraisal is sought. Where no number of shares is expressly mentioned, the demand will be presumed to cover all shares held in the name of the record owner. In addition, the shareholder must continuously hold the shares of record from the date of making the demand through the completion of the merger.

IF YOU HOLD YOUR SHARES OF GENVEC COMMON STOCK IN A BROKERAGE ACCOUNT OR IN OTHER CUSTODIAN FORM AND YOU WISH TO EXERCISE APPRAISAL RIGHTS, YOU SHOULD CONSULT WITH YOUR BANK, BROKER OR OTHER CUSTODIAN, AS APPLICABLE, TO DETERMINE THE APPROPRIATE PROCEDURES FOR THE MAKING OF A DEMAND FOR APPRAISAL BY THE CUSTODIAN. YOU MUST ACT PROMPTLY SO THAT YOUR BANK, BROKER OR OTHER CUSTODIAN, AS APPLICABLE, IS ABLE TO FOLLOW PROPERLY AND IN A TIMELY MANNER THE STEPS NECESSARY TO PERFECT YOUR APPRAISAL RIGHTS.

If the merger is completed, within 10 days after the effective time of the merger, the surviving corporation must give written notice of the date on which the merger became effective to each shareholder who did not vote in favor of the merger agreement and who properly and timely filed a written demand for appraisal in accordance with Section 262 of the DGCL. At any time within 60 days after the completion of the merger, any shareholder who has demanded an appraisal has the right to withdraw the demand and accept the terms of the merger by delivering a written withdrawal of the shareholder s demand for appraisal. If, following a demand for appraisal, you have withdrawn your demand for appraisal in accordance with Section 262 of the DGCL, you will have the right to receive the merger consideration for your shares of GenVec common stock.

Within 120 days after the effective date of the merger, any shareholder who has delivered a demand for appraisal in accordance with Section 262 of the DGCL will, upon written request to the surviving corporation, be entitled to receive a written statement setting forth the aggregate number of shares not voted in favor of the merger agreement and with respect to which demands for appraisal rights have been received and the aggregate number of holders of these shares. This written statement will be mailed to the requesting shareholder within 10 days after the shareholder s

written request is received by the surviving corporation or within 10 days after expiration of the period for delivery of demands for appraisal, whichever is later.

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Within 120 days after the effective date of the merger, either the surviving corporation or any shareholder who has delivered a demand for appraisal in accordance with Section 262 of the DGCL may file a petition in the Delaware Court of Chancery demanding a determination of the fair value of the shares held by all such shareholders. Any shareholder that is the beneficial owner of shares held in a voting trust or by a bank, broker or other custodian on such shareholder s behalf may, in his, her or its name, file an appraisal petition or request from the surviving corporation the statement described in the foregoing paragraph. Upon the filing of the petition by a shareholder, service of a copy of the petition must be made upon the surviving corporation. The surviving corporation has no obligation to file a petition in the Delaware Court of Chancery in the event there are dissenting shareholders, and the surviving corporation has no present intent to file a petition in the Delaware Court of Chancery. Accordingly, the failure of a shareholder to file a petition within the period specified could nullify the shareholder s previously written demand for appraisal.

If a petition for appraisal is duly filed by a shareholder and a copy of the petition is delivered to the surviving corporation, the surviving corporation will then be obligated, within 20 days after receiving service of a copy of the petition, to provide the Delaware Court of Chancery with a duly verified list containing the names and addresses of all shareholders who have demanded an appraisal of their shares and with whom agreements as to the value of their shares have not been reached by the surviving corporation. After notice to dissenting shareholders who demanded appraisal of their shares, the Delaware Court of Chancery is empowered to conduct a hearing upon the petition, and to determine those shareholders who have complied with Section 262 of the DGCL and who have become entitled to the appraisal rights provided thereby. The Delaware Court of Chancery may require the shareholders who have demanded appraisal for their shares and who hold stock represented by certificates to submit their stock certificates to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any shareholder fails to comply with that direction, the Delaware Court of Chancery may dismiss the proceedings as to that shareholder.

After determination of the shareholders entitled to appraisal of their shares, the Delaware Court of Chancery will appraise the fair value , as of the effective time of the merger, of the shares of GenVec common stock held by dissenting shareholders . This value will be exclusive of any element of value arising from the accomplishment or expectation of the merger, but will include a fair rate of interest, if any, upon the amount determined to be the fair value.

At any time prior to the entry of judgment in the proceedings, the surviving corporation may pay to each holder of GenVec common stock entitled to appraisal an amount in cash, in which case interest shall accrue thereafter only upon the sum of (i) the difference, if any, between the amount so paid and the fair value of the GenVec common stock as determined by the Delaware Court of Chancery, and (ii) interest theretofore accrued, unless paid at that time. Unless the Delaware Court of Chancery in its discretion determines otherwise for good cause shown, interest from the effective time of the merger through the date of payment of the judgment will be compounded quarterly and will accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the effective time of the merger and the date of payment of the judgment. The Delaware Court of Chancery must dismiss the proceedings as to all holders of GenVec common stock who are otherwise entitled to appraisal rights unless (a) the total number of shares of GenVec common stock entitled to appraisal exceeds 1% of the outstanding shares of GenVec common stock and (b) the value of consideration provided in the merger for such total number of shares of GenVec common stock exceeds $1.0 million.

When the value is determined, the Delaware Court of Chancery will direct the payment of the value, with interest thereon accrued during the pendency of the proceeding, if the Delaware Court of Chancery so determines, to the shareholders entitled to receive the same. In the case of any shareholder who holds shares in book-entry form, such payment must be made immediately. In the case of any shareholder who holds shares represented by certificates, such payment must be made upon surrender of the certificates representing the shares. In determining fair value, and, if

applicable, a fair rate of interest, the Delaware Court of Chancery is required to take into account all relevant factors. In Weinberger v. UOP, Inc., the Delaware Supreme Court discussed the

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factors that could be considered in determining fair value in an appraisal proceeding, stating that proof of value by any techniques or methods which are generally considered acceptable in the financial community and otherwise admissible in court should be considered, and that [f]air price obviously requires consideration of all relevant factors involving the value of a company. The Delaware Supreme Court has stated that, in making this determination of fair value, the court must consider market value, asset value, dividends, earnings prospects, the nature of the enterprise and any other factors which could be ascertained as of the date of the merger regarding future prospects of the merged corporation.

Section 262 of the DGCL provides that fair value is to be exclusive of any element of value arising from the accomplishment or expectation of the merger. In Cede & Co. v. Technicolor, Inc., the Delaware Supreme Court stated that this exclusion is a narrow exclusion [that] does not encompass known elements of value, but which rather applies only to the speculative elements of value arising from such accomplishment or expectation. In Weinberger, the Delaware Supreme Court construed Section 262 of the DGCL to mean that elements of future value, including the nature of the enterprise, which are known or susceptible of proof as of the date of the merger and not the product of speculation, may be considered. However, an opinion of an investment banking firm as to the fairness from a financial point of view of the consideration payable in a merger is not an opinion as to, and does not in any manner address, fair value under Section 262 of the DGCL.

You should be aware that the fair value of your shares as determined under Section 262 of the DGCL could be more than, the same as, or less than the value that you are entitled to receive under the terms of the merger agreement. Intrexon does not anticipate offering more than the per share merger consideration to any shareholder exercising appraisal rights and reserves the right to assert, in any appraisal proceeding, that, for purposes of Section 262 of the DGCL, the fair value of a share of GenVec common stock is less than the per share merger consideration. In addition, you should be aware that Delaware courts have decided that the statutory appraisal remedy, depending on factual circumstances, may or may not be a dissenter s exclusive remedy.

Costs of the appraisal proceeding may be determined by the Delaware Court of Chancery and may be imposed upon the surviving corporation and the shareholders participating in the appraisal proceeding by the Delaware Court of Chancery as the Court deems equitable in the circumstances. However, costs do not include attorneys and expert witness fees. Upon the application of a shareholder, the Delaware Court of Chancery may order all or a portion of the expenses incurred by any shareholder in connection with the appraisal proceeding, including, without limitation, reasonable attorneys fees and the fees and expenses of experts, to be charged pro rata against the value of all shares entitled to appraisal. In the absence of such a determination of assessment, each party bears its own expenses.

Any shareholder who has demanded appraisal rights will not, after the completion of the merger, be entitled to vote shares subject to that demand for any purpose or to receive payments of dividends or any other distribution with respect to those shares, other than with respect to payment as of a record date prior to the completion; however, if no petition for appraisal is filed within 120 days after the completion of the merger, or if the shareholder delivers a written withdrawal of his or her demand for appraisal and an acceptance of the terms of the merger within 60 days after the completion of the merger, then the right of that shareholder to appraisal will cease and that shareholder will be entitled to receive the merger consideration for his or her shares of GenVec common stock pursuant to the merger agreement. Any withdrawal of a demand for appraisal made more than 60 days after the completion of the merger may only be made with the written approval of the surviving corporation, and no appraisal proceeding in the Delaware Court of Chancery will be dismissed as to any shareholder without the approval of the Delaware Court of Chancery. Such approval may be conditioned on terms the Delaware Court of Chancery deems just; however, this limitation will not affect the right of any shareholder who has not commenced an appraisal proceeding or joined such proceeding as a named party to withdraw such shareholder s demand for appraisal and to accept the terms offered in the merger within 60 days. If you fail to perfect or withdraw or otherwise lose the appraisal right, your shares will be converted into the

right to receive the merger consideration, without interest thereon, less any withholding taxes.

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Failure to follow the steps required by Section 262 of the DGCL for perfecting appraisal rights may result in the loss of appraisal rights. In that event, you will be entitled to receive the merger consideration for your shares in accordance with the merger agreement. In view of the complexity of Section 262 of the DGCL, shareholders who may wish to dissent from the merger and pursue appraisal rights should consult their legal advisors.

THE PROCESS OF DEMANDING AND EXERCISING APPRAISAL RIGHTS REQUIRES STRICT COMPLIANCE WITH TECHNICAL PREREQUISITES. IF YOU WISH TO EXERCISE YOUR APPRAISAL RIGHTS, YOU SHOULD CONSULT WITH YOUR OWN LEGAL COUNSEL IN CONNECTION WITH COMPLIANCE UNDER SECTION 262 OF THE DGCL. TO THE EXTENT THERE ARE ANY INCONSISTENCIES BETWEEN THE FOREGOING SUMMARY AND SECTION 262 OF THE DGCL, THE DGCL WILL GOVERN.

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Description of Intrexon s business

Intrexon s business is described in Part I, Item 1 of Intrexon s Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

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Intrexon management s discussion and analysis of financial condition and results of operations

A discussion and analysis of Intrexon s financial condition and results of operations is described in Part II, Item 7 of Intrexon s Annual Report on Form 10-K for the fiscal year ended December 31, 2016, Part I, Item 2 of Intrexon s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2017, and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus. The discussion and analysis of Intrexon s financial condition and results of operations should be read together with Selected consolidated financial data and Intrexon s consolidated financial statements and the related notes. In addition to historical information, the discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Intrexon s actual results may differ materially from those discussed in the discussion and analysis. Factors that could cause or contribute to such differences include, but are not limited to, those identified in the discussion and analysis, and those discussed in the section entitled Risk factors.

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Intrexon management

A description of Intrexon s executive officers and directors, board and committee composition, director independence, and related matters are described in Intrexon s Definitive Proxy Statement relating to its 2017 Annual Meeting of Shareholders and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

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Intrexon executive compensation

A description of Intrexon s executive compensation and related matters are described in Intrexon s Definitive Proxy Statement relating to its 2017 Annual Meeting of Shareholders and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

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Certain relationships and related party transactions of Intrexon

A description of certain of Intrexon s relationship, related party transactions and related matters are described in Intrexon s Definitive Proxy Statement relating to its 2017 Annual Meeting of Shareholders and in other documents that are incorporated by reference into this proxy statement/prospectus. See the section entitled Where you can find more information for the location of information incorporated by reference in this proxy statement/prospectus.

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Intrexon security ownership of certain beneficial owners and management

The following table sets forth information regarding beneficial ownership of Intrexon s share capital as of March 31, 2017 by (1) each of Intrexon s directors, (2) each of Intrexon s named executive officers, (3) all of Intrexon s directors and executive officers as a group, and (4) each person, or group of affiliated persons, known by Intrexon to beneficially own more than five percent of Intrexon s shares of common stock.

The percentage ownership information is based on an aggregate 119,552,674 shares of common stock outstanding as of March 31, 2017.

Except as otherwise noted below, the address for each person or entity listed in the table is c/o Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

Name of Beneficial Owner	Outstanding Shares Beneficially Owned	Right to Acquire Beneficial Ownership[1]	Total Shares Beneficially Owned[2]	Percentage of Shares Beneficially Owned
Directors/director nominees				
Cesar Alvarez	37,010	93,889	130,899	*
Steven Frank	43,041	93,889	136,930	*
Vinita Gupta[3]				*
Fred Hassan	9,706	30,060	39,766	*
Jeffrey Kindler	66,322	90,926	157,248	*
Dean Mitchell	13,103	90,921	104,024	*
Robert Shapiro[4]	123,273	90,926	214,199	*
James Turley	9,595	92,413	102,008	*
Named executive officers				
Randal Kirk[5]	62,301,326		62,301,326	52.1%
Rick Sterling	6,369	220,759	227,128	*
Ena Cratsenburg[6]				*
Geno Germano				*
Andrew Last				*
Nir Nimrodi[7]	4,000	779,457	783,457	*
Executive officers and directors as a group (18 persons)	63,209,839	2,463,371	65,673,210	54.9%
Greater than 5% shareholders				
FMR, LLC[8]	6,459,001		6,459,001	5.4%

* Represents beneficial ownership of less than 1 percent of Intrexon s outstanding shares of common stock

(1) Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes sole or shared voting or investment power with respect to shares of Intrexon s common stock. The information set forth in the table above is not necessarily indicative of beneficial ownership for any other purpose, and the inclusion of any shares deemed beneficially owned in this table does not constitute an admission of beneficial ownership of

those shares. Except as otherwise noted, to Intrexon s knowledge, the persons and entities named in the table above have sole voting and investment power with respect to all of the shares of common stock beneficially owned by them, subject to community property laws, where applicable.

(2) Consists of shares of common stock subject to stock options exercisable as of, or within 60 days of March 31, 2017. Shares of common stock subject to stock options that are exercisable as of or within 60 days of March 31, 2017 are deemed to be outstanding and beneficially owned by the person holding the option for the purpose of calculating the percentage ownership of that person, but are not deemed outstanding for the purpose of calculating the percentage ownership of any other person.

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(3) Ms. Gupta joined the Board in April 2017 and upon appointment received the applicable director compensation, which includes 15,000 stock options immediately exercisable, 40,000 stock options with an exercise price of $21.13, which vest 25% each year on the anniversary of Ms. Gupta s appointment, and 2,839 shares of common stock in lieu of cash payment of the annual retainer.

(4) Includes 80,116 shares held in the Robert B. Shapiro Revocable Trust, an affiliate of Robert Shapiro.

(5) Includes shares held by the following entities over which Mr. Kirk (or an entity over which he exercises exclusive control) exercises exclusive control: 213,805 shares held by ADC 2010, LLC, 139,052 shares held by JPK 2008, LLC, 720,562 shares held by JPK 2009, LLC, 843,044 shares held by JPK 2012, LLC, 6,649,997 shares held by Kapital Joe, LLC, 135,033 shares held by Kellie L. Banks (2009) Long Term Trust, 1,403 shares held by Lotus Capital (2000) Company Inc., 5,483,957 shares held by Mascara Kaboom, LLC, 140,007 shares held by MGK 2008, LLC, 850,355 shares held by MGK 2009, LLC, 940,426 shares held by MGK 2011, LLC, 22,636,052 shares held by New River Management V, LP, 13,340,645 shares held by NRM VI Holdings I, LLC, 243,001 shares held by NRM VII Holdings I, LLC, 5,325,535 shares held by R.J. Kirk Declaration of Trust, 678,323 shares held by Third Security Incentive 2010 LLC, 19,711 shares held by Third Security Incentive 2006 LLC, 59,133 shares held by Third Security Staff 2006 LLC, 118,266 shares held by Third Security Senior Staff 2006 LLC, 1,356,648 shares held by Third Security Senior Staff 2008 LLC, 58,800 shares held by Third Security Senior Staff LLC, 311,287 shares held by Third Security Staff 2001 LLC, 1,356,648 shares held by Third Security Staff 2010 LLC, 489,771 shares held by Third Security, LLC, 114,181 shares held by ZSK 2008 LLC, and 75,684 shares held by ZSK 2009 LLC.

(6) Ms. Cratsenburg s information is based solely on Intrexon s information and belief based on publicly available information and is disclosed in the table above because she is a named executive officer for the fiscal year ended 2016, as determined pursuant to Regulation S-K Item 402(a)(3)(iv), despite the fact that she was not employed by Intrexon as of December 31, 2016.

(7) Includes 4,000 shares held in the Nimrodi Family Trust, an affiliate of Nir Nimrodi.

(8) Information is based solely on the Schedule 13G/A that was filed with the SEC on February 14, 2017 by FMR LLC. FMR LLC reports that it is the beneficial owner of 6,459,001 shares of Intrexon s common stock and has sole voting power with respect to 687,303 shares of Intrexon s common stock and sole dispositive power with respect to 6,459,001 shares of Intrexon s common stock as of December 31, 2016. The address of FMR, LLC is 245 Summer Street, Boston, Massachusetts 02210.

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Description of GenVec business

OVERVIEW

GenVec is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. GenVec is a pioneer in the design, testing and manufacture of adenoviral-based product candidates that can deliver on the promise of gene-based medicine. GenVec s lead product candidate, CGF166, is licensed to Novartis and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to GenVec s internal and partnered pipeline, GenVec also focuses on opportunities to license its proprietary technology platform, including vectors and production cell lines, to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

A key component of GenVec s strategy is to develop and commercialize its product candidates through collaborations. GenVec is working with prominent companies and organizations such as Novartis, Merial (a unit of Boehringer Ingelheim), which we refer to herein as Merial, Washington University in St. Louis, and the U.S. government, as well as promising young companies such as TheraBiologics, to support a portfolio of programs that addresses the prevention and treatment of a number of significant human and animal health concerns. GenVec s combination of internal and partnered development programs address therapeutic areas such as hearing loss and balance disorders, oncology, bleeding disorders, as well as vaccines against infectious diseases, including RSV, herpes simplex virus, which we refer to herein as HSV, and malaria, and in the area of animal health, vaccines against FMD.

GenVec s AdenoVerse gene delivery technology has the important advantage of localizing protein delivery in the body. This is accomplished by using GenVec s adenovector platform to locally deliver genes to cells, which then direct production of the desired protein. This approach reduces side effects typically associated with systemic delivery of proteins. For therapeutics, the goal is for the protein produced to have a meaningful effect in treating the cause, manifestation, or progression of the disease. For vaccines, the goal is to induce an immune response against a target protein or antigen. This is accomplished by using an adenovector to deliver a gene that causes production of an antigen, which then stimulates the desired immune reaction by the body.

GenVec s research and development activities yield product candidates that utilize GenVec s technology platform and represent potential commercial opportunities. For example, preclinical research in hearing loss and balance disorders indicates that the delivery of the atonal gene using GenVec s adenovector technology may have the potential to restore hearing and balance function. GenVec is currently working with Novartis on the development of novel treatments for hearing loss and balance disorders that emerged from these research and development efforts. There are currently no effective therapeutic treatments available for patients who have lost all balance function, and hearing loss remains a major unmet medical problem.

GenVec has multiple vaccine candidates that leverage GenVec s core adenovector technology, including GenVec s vaccine candidates for the prevention or treatment of RSV and HSV. GenVec also has a program to develop a vaccine for malaria, a program in which it is currently working in collaboration with the Laboratory of Malaria Immunology and Vaccinology, referred to herein as LMIV, of the National Institute of Allergy and Infectious Diseases, National Institutes of Health.

On February 24, 2016, GenVec received notification that it would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with NASDAQ s minimum bid price requirement, referred to herein as the Bid Price Requirement, and on August 23, 2016, GenVec received notice that it had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance with the Bid Price Requirement,

the closing bid price of GenVec s common stock was required to meet or exceed $1.00 per share for at least 10 consecutive business days. On November 30, 2016, GenVec effected a reverse stock split, referred to herein as the reverse stock split, of its outstanding common stock at a ratio of one-for-ten,

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whereby each 10 shares of common stock were combined into one share of common stock. The reverse stock split was intended to enable GenVec to regain compliance with the Bid Price Requirement. On December 15, 2016, GenVec received a notice from NASDAQ stating that GenVec had regained compliance.

As a biopharmaceutical company, GenVec s business and its ability to execute its strategy to achieve GenVec s corporate goals are subject to numerous risks and uncertainties. Material risks and uncertainties relating to GenVec s business and its industry are described in Risk Factors Risks Related to GenVec and its business herein. The description of GenVec s business in this Registration Statement on Form S-4 should be read in conjunction with the information in Risk Factors Risks Related to GenVec and its business as well as GenVec Financial Statements in this Registration Statement on Form S-4, which includes additional financial information, including information about GenVec s total assets, revenue, and measures of profit and loss.

GENVEC S STRATEGY

GenVec s primary objective is to leverage its proprietary technology through partnerships to develop and commercialize products that address significant unmet medical needs. GenVec plans to achieve this objective through the following strategies:

Working with GenVec s collaborators to facilitate the development of first-in-class products for the treatment of significant unmet medical needs including:

- hearing and balance disorders through GenVec s collaboration with Novartis;
- vaccines against FMD through GenVec s collaboration with Merial;
- bleeding disorders through GenVec s collaboration with Washington University in St. Louis;
- glioma and other brain cancers through GenVec s collaboration with TheraBiologics; and
- vaccines against Malaria through GenVec s collaboration with LMIV.

Entering into new collaborations for the development of product candidates utilizing GenVec s technology. GenVec is engaged in seeking strategic collaborations, partnerships and licensing arrangements to further develop and potentially commercialize therapeutic and vaccine product candidates that utilize its technology. GenVec continues to seek corporate partnerships in the following programs and areas:

- vaccine against RSV, which is the most common viral cause of lower respiratory infections in infants and young children;
- vaccine against HSV, which is the virus responsible for most cases of genital herpes; and

other therapeutic and prophylactic applications of GenVec s human and non-human adenoviral vectors together with the related platform technology and packaging cell lines.

Exploring new applications of GenVec s technology to address the treatment and prevention of major unmet medical needs. GenVec intends to continue to enhance its core technologies and product pipeline through internal research as well as external collaborations, licensing arrangements and possible acquisitions. In the past, GenVec has received peer-reviewed external funding from the U.S. government and from nonprofit foundations to improve its technology platform for vaccine and gene delivery applications. GenVec intends to further strengthen its technologies relating to vector performance, process development, formulation, and manufacturing through GenVec s existing and future relationships. GenVec intends to explore the use of its AdenoVerse technology in the following areas:

regenerative medicine;

vaccines;

therapeutic gene delivery;

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immunotherapy (including cellular immunotherapy);

nucleic acid therapeutics;

gene editing;

oncolytic viruses; and

cell therapy.

HEARING AND BALANCE DISORDERS PROGRAM

Overview. In collaboration with Novartis, GenVec s hearing and balance disorders program is focused on the restoration of hearing and balance function through the regeneration of critical cells of the inner ear. GenVec s lead product candidate, CGF166, emerged from research and development performed as part of the collaboration. In October 2014, the first patient was treated in a Phase 1/2 proof-of-concept trial of CGF166 in patients with severe to profound hearing loss. As discussed in Collaboration with Novartis below, the trial was temporarily paused for a portion of 2016, but has since restarted. In February 2017, GenVec was notified that the first patient in the fourth cohort of the trial had been dosed.

Background. Sensorineural hearing loss and vestibular dysfunction may result from destruction of inner ear sensory hair cells. Humans are born with approximately 30,000 sensory hair cells, which are located in the cochlea, vestibular canals, utricle, and saccule of the ear. Sensory hair cells, located in the cochlea are critical for auditory function, while those located in the vestibular canals, utricle, and saccule provide the basis for vestibular function.

Sensory hair cells can be damaged or destroyed by pharmacological agents, infections, loud noises, or simply aging. Because these cells do not naturally regenerate, any damage to or destruction of them is permanent.

Patients whose sensory hair cells have been damaged or destroyed may experience hearing loss. According to the National Institute on Deafness and Other Communication Disorders, referred to herein as the NIDCD, among adults aged 70 and older with hearing loss who could benefit from hearing aids, fewer than one in three (30%) has ever used them. Even fewer adults aged 20 to 69 who could benefit from wearing hearing aids have ever used them (approximately 15%). Also according to the NIDCD, as of December 2012, approximately 324,200 patients worldwide have received cochlear implants in the United States, roughly 58,000 devices have been implanted in adults and 38,000 in children. Although cochlear implants improve hearing, they require invasive surgery, do not discriminate pitch, and require ongoing maintenance and patient training.

Patients whose sensory hair cells have been damaged or destroyed may also experience more severe vestibular dysfunction, which may result in debilitating vertigo and nausea. There is currently no known therapy other than rehabilitation to facilitate the acquisition of environmental signals to compensate for vestibular dysfunction.

GenVec believes that because there are no therapeutic options available to regenerate sensory hair cells to restore auditory or balance function, there is a significant and unmet medical need in the area of sensorineural hearing loss and vestibular dysfunction.

During embryonic development, an atonal gene (Atoh1) induces the generation of sensory cells in the inner ear required for hearing and balance. In multiple animal models, GenVec has demonstrated formation of new inner ear sensory hair cells and the restoration of hearing and balance function using its AdenoVerse technology to deliver the Atoh1 gene to the inner ear.

The lead product emerging from GenVec s hearing program is an advanced adenoviral vector engineered to deliver the human atonal gene under the control of a tissue specific promoter. Novartis has designated this product candidate as CGF166.

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Collaboration with Novartis. In January 2010, GenVec entered into a research collaboration and license agreement with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Under the terms of the agreement, GenVec licensed the world-wide rights to its preclinical hearing loss and balance disorders program to Novartis. GenVec received a $5.0 million upfront payment and Novartis purchased $2.0 million of its common stock.

GenVec was eligible, from the inception of the agreement, to receive up to an additional $206.6 million in milestone payments if certain clinical, regulatory, and sales milestones were met, including: up to $0.6 million for the achievement of preclinical development activities; up to $26.0 million for the achievement of clinical milestones (including non-rejection of an investigational new drug application, referred to herein as an IND, with respect to a covered product, the first patient visit in Phase I, Phase IIb and Phase III clinical trials); up to $45.0 million for the receipt of regulatory approvals; and up to $135.0 million for sales-based milestones.

From September 2010 through October 2014, GenVec achieved four milestones resulting in aggregate payments from Novartis of $5.6 million. GenVec has not achieved any milestones since October 2014.

The achieved milestones are as follows:

Milestone Event	Date	Amount
Successful completion of certain preclinical development activities	September 2010	$ 300,000
Successful completion of certain preclinical development activities	December 2011	300,000
Non-rejection by the FDA of the IND filed by Novartis for CGF166	February 2014	2,000,000
First patient treated in a Phase I clinical trial with CGF166	October 2014	3,000,000

As of April 30, 2017, milestones remaining available under the agreement included $21.0 million of additional clinical milestones, $45.0 million in regulatory milestones, and $135.0 million of sales-based milestones.

Additionally, if a product is commercialized, GenVec is also entitled to tiered royalties on the annual net sales of licensed products, on a product-by-product and country-by-country basis, at percentage rates that range based on annual net sales from the mid-single digits to the low double digits until the earlier of (i) the expiration of the last valid claim with respect to applicable patent rights and (ii) January 1 following a year in which annual net sales of the product declined by a specified percentage of the highest level of prior annual net sales where the decline is reasonably attributable in part to the marketing or sale of a competing product in the country. For the five years thereafter, in the applicable country, GenVec is entitled to tiered royalties of below 1% on annual net sales. The collaboration and license agreement is terminable for convenience upon notice by either party or for uncured material breach.

In addition, the agreement allows GenVec to receive funding from Novartis for a research program focused on developing additional adenovectors for hearing loss. GenVec recognized approximately $0.1 million and $0.2 million in 2016 and 2015, respectively, and $0.1 million for each of the three-month periods ended March 31, 2017 and 2016, for services performed under this agreement.

In January 2016, GenVec was notified by Novartis that enrollment was paused in the clinical study for CGF166. This pause was based on a review of data by the trial s Data Safety Monitoring Board, referred to herein as DSMB, in accordance with criteria in the trial protocol. In April 2016, GenVec was notified by Novartis, based on a review of safety and efficacy data from the nine patients currently enrolled in the study, that the DSMB recommended that the trial continue, subject to approval by the FDA. In July 2016, GenVec was notified by Novartis that FDA had lifted the clinical hold on the trial. In February 2017, GenVec was notified that the first patient in the fourth cohort of the trial

had been dosed.

In August 2010, GenVec signed an agreement, referred to herein as the NVS Supply Agreement, for the supply of services relating to development materials with Novartis, related to GenVec s collaboration in hearing loss and

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balance disorders. Under this agreement, valued at $14.9 million, GenVec agreed to manufacture clinical trial material for up to two lead product candidates. GenVec recognized approximately $0.1 million and $0.2 million in 2016 and 2015, respectively and $30,000 for each of the three-month periods ended March 31, 2017 and 2016, for services performed under this agreement. As of March 31, 2017, GenVec had recognized a total of $14.9 million under this agreement.

CELL THERAPY PROGRAM

In March 2015, GenVec entered into a collaboration with TheraBiologics, Inc. to develop cancer therapeutics by leveraging GenVec s AdenoVerse gene delivery platform and TheraBiologics proprietary neural stem cell technology. GenVec will contribute technology, know-how, vector construction, and technical and regulatory support to the program. TheraBiologics will be responsible for all other development costs. Depending on the manner of commercialization, GenVec will be entitled to profit sharing and/or royalty and milestone payments for the products being developed under the collaboration.

PULMONARY ENDOTHELIAL CELL DELIVERY PROGRAM

In December 2016, GenVec entered into an exclusive option agreement with Washington University in St. Louis, referred to herein as WUSTL, to license intellectual property and technology related to gene editing and pulmonary endothelial cell, referred to herein as PEC, delivery. If the option is exercised, the license will allow broad utilization of technology developed by David T. Curiel, M.D., Ph.D., Professor of Radiation Oncology at Washington University School of Medicine. In connection with the option agreement, GenVec executed a sponsored research agreement with WUSTL to further advance the optioned technology. PEC delivery has been designed to leverage the lung, the second largest organ in the body, as a surrogate production site for proteins. GenVec and WUSTL plan to initially focus on research utilizing the technology to develop treatments for hemophilia.

VACCINE PROGRAMS

GenVec has developed vaccine candidates using its AdenoVerse technology. GenVec believes that its AdenoVerse vectors have superior properties to deliver antigens and stimulate an effective innate and adaptive immune response against pathogens of interest. GenVec s vaccine candidates include preventative vaccines against RSV and malaria, and a therapeutic vaccine for HSV.

Many vectors used in developing vaccines are susceptible to pre-existing immunity that neutralizes and has the effect of preventing the vaccine from generating the desired immunological response; this is referred to as vector-specific immunity. GenVec s most promising vectors for vaccine applications are derived from non-human primate adenovirus types, which GenVec believes can circumvent neutralizing antibodies, or vector-specific immunity, in order to generate the desired immunologic response of the vaccine.

Respiratory Syncytial Virus. GenVec is seeking a partner to continue the development of its GV2311 vaccine against RSV, the single most important viral cause of lower respiratory infections in infants and young children.

According to information published by the Centers for Disease Control and Prevention, referred to herein as CDC, in 2014, each year, on average, in the United States, RSV leads to 57,527 hospitalizations among children younger than 5 years old; 100,000 to 126,000 hospitalizations among children younger than 1 year old; 2.1 million outpatient visits among children younger than 5 years old; and 177,000 hospitalizations and 14,000 deaths among adults older than 65 years.

In March 2012, data were presented on GenVec s RSV vaccine program at the Keystone Symposium on Viral Immunity and Host Gene Influence , which took place in Keystone, Colorado. Data presented at the conference demonstrated encouraging preclinical proof-of-principle findings generated in non-human primates. Specifically,

the data showed GenVec s vaccine technology induced neutralizing antibody and significant T cell responses with a single administration. The immune responses were consistent with protective responses without disease potentiation and multiple administrations increased the neutralizing antibody responses.

In September 2012, data were presented on GenVec s RSV vaccine program at the International Respiratory Syncytial Virus Symposium, which took place in Santa Fe, New Mexico. Data presented at the conference demonstrated that GenVec s universal RSV vaccine candidate, GV2311, is highly immunogenic and produces durable and broad protection from a single intramuscular administration. Protection in cotton rat and mouse models was characterized by functional RSV neutralizing antibodies, and no disease potentiation was observed. GenVec s RSV vaccine candidate utilizes a proprietary adenovirus that is capable of generating a broad immune response while avoiding the problems of vector specific immunity that has hampered other vectored vaccines.

In November 2014, data exploring the immune responses generated by GV2311 were presented at the 9th International Respiratory Syncytial Virus Symposium held in South Africa. In the experiments described in the presentation, RSV immunized mice had no detectable virus following low dose challenge, while breakthrough RSV replication in both lungs and noses was rapidly controlled upon high dose challenge. GV2311 immunization fully protected the lungs at both challenge doses with partial protection in noses. The studies also confirmed the major protective mechanism is through induction of antibodies against RSV, although antigen specific T cells contribute to viral clearance in the absence of antibody. GV2311 was previously shown to induce protective immunity to RSV in a dose-dependent manner in established animal models.

GenVec is not engaging in significant development for RSV while GenVec seeks to partner this program.

Herpes Simplex Virus. GenVec is seeking a partner to continue the development of its GV2207 vaccines for the treatment of HSV including HSV-2, the virus responsible for most cases of genital herpes. According to the World Health Organization, referred to herein as the WHO, an estimated 417 million people aged 14-49 (11%) worldwide have HSV-2 infections. According to the CDC, genital herpes is common in the United States one of every six people aged 14-49 is infected. All HSV-2 infections are permanent and result in periodic virus shedding. The CDC notes that herpes infections are most contagious when symptoms are present, but can still be transmitted to others in the absence of symptoms. Of added concern, infection with HSV-2 increases the risk of acquiring and transmitting HIV infection. There is no approved vaccine for HSV-2 in the United States. Although antiviral regimens have become a standard of care, their inconvenience, cumulative cost and potential for drug resistance further underscore the need for safe, new approaches to reducing HSV-2 lesions, virus shedding, and transmission. Estimated costs of treating HSV in the United States alone are close to $1 billion, primarily for drugs and outpatient medical care.

Data on GenVec s HSV vaccine program has shown that a single administration of GenVec s genetic vaccine was effective against HSV-2 in two industry-accepted HSV disease models. Specifically, immunization was shown to reduce viral shedding, and the recurrence and severity of lesions.

GenVec is not engaging in significant development for HSV while GenVec seeks to partner this program.

Malaria. GenVec has worked with collaborators in recent years, including with the NIAID, to generate vaccine candidates for the prevention of malaria. According to the Malaria Fact Sheet available through the WHO, about 3.2 billion people almost half of the world s population are at risk for malaria. Young children, pregnant women and non-immune travelers from malaria-free areas are particularly vulnerable to the disease. Despite advances in prevention and treatment, per WHO estimates, released in December 2015, there were 214 million cases of malaria in 2015 and 438,000 deaths.

In April 2010, encouraging clinical and preclinical malaria vaccine data were presented regarding safety, tolerability, immunogenicity, and efficacy data from the Phase 1/2a malaria trial using GenVec technology. Data indicate malaria vaccines given to malaria-naïve adults were found to be safe and well-tolerated with minimal

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local or systemic reactions and no serious vaccine-related adverse reactions. Sterile protection, a complete absence of parasites in the blood, was seen in 4 out of 15 volunteers that had been inoculated with the vaccine and subsequently challenged with the malaria parasite.

In March 2012, GenVec received a grant from NIAID to support GenVec s malaria vaccine program. This grant, valued at approximately $600,000, is being used to identify novel highly protective antigens for malaria vaccine development. Revenue recognized under this grant amounted to $0.2 million in 2016 and $0.1 million in both 2015 and 2014.

In November 2012, data were presented highlighting GenVec s success in identifying novel antigens for use in its malarial vaccine development program. Using a proprietary screening technology, GenVec identified new antigens that are as protective as the gold standard, circumsporozoite protein, or CSP, in an industry-accepted mouse model of malaria. Recent data suggest that new antigens are needed and that CSP, used in vaccines being developed by others, may not be sufficient to generate a protective response in an adequate percentage of people. Data presented at the conference also highlighted GenVec s proprietary non-human primate adenoviral vectors that are capable of generating broad immune responses while avoiding the problems of vector-specific immunity which has limited the development of other adenoviruses as vectors for vaccines.

In April 2015, GenVec announced a research collaboration with LMIV. The collaboration utilized GenVec s proprietary gorilla adenovirus vectors to deliver a number of novel antigens discovered at the LMIV in order to create and test a variety of malaria vaccine candidates. GenVec will construct vaccine candidates at its laboratories and provide them to LMIV s Vaccine Development Unit for preclinical testing. The purpose of this collaboration is to devise vaccines that block the transmission of the deadliest malaria-causing parasite, Plasmodium falciparum, by triggering the production of antibodies that are taken up by a mosquito when it bites a vaccinated individual. This approach, which is different from traditional vaccine approaches, is designed to launch an attack on the parasite while it is in its mosquito carrier and could potentially help stop the spread of the disease to subsequent bite victims.

ANIMAL HEALTH PRODUCT DEVELOPMENT PROGRAM

GenVec is exploring applications of its technology to treat and prevent diseases that affect livestock and other animals. With its collaborators, GenVec is developing vaccine and anti-viral candidates for the prevention and containment of FMD outbreaks. FMD is a highly contagious viral disease affecting cows and other animals with cloven hooves. GenVec s novel FMD vaccine approach utilizes GenVec s proprietary adenovector technology and is manufactured on a proprietary GenVec cell line that is capable of producing antigens without the use of highly contagious FMD virus. Because the vaccine is produced without using killed virus materials, it can be produced cost effectively in the U.S. and around the world. While the United States has not had an outbreak of FMD since 1929, the highly contagious nature of FMD, and the grave economic consequences of an outbreak, has made developing a vaccine and anti-viral candidates a high priority of the U.S. government. Initial testing of a vaccine against FMD showed that inoculated cattle challenged with the virus causing FMD did not develop symptoms.

In June 2012, the U.S. Department of Agriculture s Animal and Plant Health Inspection Service, referred to herein as APHIS, issued a conditional license for GenVec s FMD vaccine for use in cattle. APHIS issued the conditional license to Antelope Valley Bios, Inc., who manufactured the vaccine under a contract with GenVec. This is the first FMD vaccine licensed by USDA Center for Veterinary Biologics. Under the conditional license, the product may be distributed as authorized by Federal emergency management officials within USDA, should the need for the product arise. APHIS issues conditional licenses in the event of an emergency situation, limited market or other special circumstance. In this case, the special circumstance was the need for an FMD vaccine that was capable of being manufactured in the U.S. that allowed for the differentiation between infected and vaccinated animals. The vaccine is

available to agriculture officials in the event of an FMD emergency situation.

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In December 2010, GenVec entered into a collaboration with Merial to develop and commercialize GenVec s proprietary vaccine technology for use against FMD. Merial is the leading FMD vaccine producer in the world, with leading positions in all key markets. Under the agreement, Merial will be responsible for all costs related to the development and commercialization of FMD vaccines developed through the collaboration. If the program results in a commercial product, GenVec will receive development milestones and royalties on sales. In May 2011, GenVec entered into a second agreement with Merial. Under the agreement, Merial has the right to evaluate GenVec technology for applications in other areas of animal health. This agreement expired in April 2016.

In September 2016, GenVec entered into an amendment to its previously disclosed license agreement with Merial. Under the terms of the amendment, GenVec will provide Merial with certain biological materials and grant Merial the right to use the underlying GenVec technology to further develop and advance FMD vaccine product candidates.

In February 2010, GenVec signed a contract with the U.S. Department of Homeland Security to continue the development of adenovector-based vaccines against FMD. This agreement covered the use of GenVec s adenovector technology to develop additional FMD-serotype candidate vaccines and explore methods to increase the potency and simplify the production process of adenovector-based FMD vaccines. This agreement was completed in February 2015.

TECHNOLOGY PLATFORM

GenVec is a pioneer in the gene therapy field, with experience progressing therapeutics and vaccines from the research stage to the product candidate stage and into clinical development. GenVec s AdenoVerse technology can be used to deliver genes precisely to target cells in order to elicit the desired biological response, as exemplified by the delivery of CGF166 to the inner ear in GenVec s hearing loss and balance disorder program. In addition, GenVec s technology can be used to deliver one or more antigens to elicit immune responses to the target disease. GenVec believes it is also a leader in adenovector design and testing, with experience in scale-up and manufacture. GenVec s technology platform includes a broad array of proprietary adenovirus vectors for gene delivery for therapeutics and vaccines, as well as proven scale-up and production methodologies and proprietary manufacturing cell lines.

GenVec s highly potent AdenoVerse vectors include human and non-human low-seroprevalence serotypes, such as GenVec s monkey and gorilla adenovectors, and are designed for superior performance by providing what GenVec believes is the ability to avoid the pre-existing immunity issues that can hamper gene delivery using some other adenovector constructs.

When compared to standard vaccine approaches GenVec s gorilla adenovectors provide what GenVec believes are other distinct advantages for molecular vaccines, including the induction of both durable high-level antibody and T cell responses. GenVec s gorilla adenovectors have been shown to induce increased antigen-specific immune responses on repeat administration. GenVec believes that its technology platform can be used to develop product candidates that address a variety of disease challenges.

GenVec s manufacturing cell lines have been used to produce therapeutics and vaccines in accordance with cGMP with high yields for numerous clinical studies. GenVec s track record includes the successful design and manufacture of novel adenovectors containing single or multiple genes for the production of therapeutic proteins or antigens that GenVec has been able to scale up for clinical manufacturing. Therapeutics and vaccines designed by GenVec and produced using is high-yield cell lines have been tested in over 3,000 study subjects in clinical trials conducted in the U.S., Europe, Africa and the Middle East.

Adenovirus Vector Technology. GenVec utilizes a collection of differentiated, proprietary technologies to create product candidates with what GenVec believes are superior attributes. GenVec s product candidates are

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developed with GenVec s proprietary adenovector technology, which uses modified adenoviruses to deliver genes to cells. Adenoviruses are naturally occurring viruses that reproduce in certain tissues and can cause ailments such as mild respiratory infections. GenVec designs its vectors so they cannot replicate or cause diseases. This limits toxicity, including unwanted effects on target cells and the surrounding tissues. GenVec s product candidates consist of adenovectors that contain one or more inserted gene(s). GenVec has multiple proprietary adenovectors to suit different applications in therapeutic and vaccine products.

When administered to tissues, GenVec s vectors enter target cells, leading the cells to produce the protein encoded by the inserted gene. The vector is then naturally eliminated from cells and tissues.

GenVec believes adenovectors are desirable gene delivery vehicles because they efficiently deliver genes, can be readily modified, and are generally well tolerated.

GenVec believes its differentiated gene delivery technology enables it to:

- improve the efficiency of discovering new therapies and vaccines;
- rapidly construct and screen product candidates;
- identify novel antigens in a quick, and cost-effective manner;
- minimize interference from antibodies to adenoviruses;
- put genes or antigens rapidly into vectors to evaluate function and usefulness in therapy;
- deliver GenVec s product candidates to specific organs or cell types to avoid systemic exposure;
- achieve efficient delivery of gene to, and stimulate protein expressions in, target cells;
- control the amount and duration of therapeutic protein production to allow flexibility in treating different diseases; and
- scale GenVec s manufacturing process for commercial production.

GenVec believes its adenovector technology is a preferred approach for therapeutic and vaccine products:

- for local delivery and expression of therapeutic genes;

for cell type specific delivery and expression;

for rational vaccine design;

for high level antibody and cellular based vaccine responses;

for vaccine production without exposure to contagious pathogens; and

for the manufacture of new products that cannot be produced using standard technologies.

Local Delivery and Expression of Genes. To achieve local production of proteins, GenVec can administer its product candidates directly to the site of disease using standard medical devices such as syringes. Direct administration of GenVec s product candidates into diseased tissue allows it to increase effectiveness by achieving high concentrations of the protein at disease sites while improving safety by avoiding systemic exposure throughout the body.

Control of Gene Expression. GenVec s technology also allows it to modify the location, duration, and rate of therapeutic gene expression. GenVec alters gene expression by inserting a sequence of DNA, called a promoter, into GenVec s vectors adjacent to the target gene. GenVec tailors its technology to the therapeutic or vaccine product need. For some diseases, long-term expression of the therapeutic gene is required to achieve a clinical benefit while high level antigen expression from GenVec s molecular vaccines is preferred. Moreover, GenVec s

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adenovector technology allows multiple antigens or therapeutic genes to be efficiently expressed for therapeutic benefit. GenVec has also shown that local production of therapeutic proteins by regulating expression via insertion of a specific proprietary promoter that either limits expression to specific cell types or can regulate expression after specific treatments can be preferred.

New Adenovector Platforms. GenVec has generated vectors based on different types of adenovirus. These vectors have the potential to avoid neutralizing antibodies, and for vaccine applications can improve vaccine potency and generate desired immune responses to combat against an infectious agent or illicit desired therapeutic responses to treat an underlying infection.

Emerging Applications. The AdenoVerse platform offers numerous advantages that could be beneficial for a variety of emerging therapeutic approaches such as gene editing, cell therapy, immunotherapy, regenerative medicine, and others. The flexibility of the AdenoVerse platform allows for the customized design of vectors capable of addressing the unique needs and limitations of each of these different applications. GenVec s expertise in vector construction can be leveraged to construct vectors with specific performance characteristics necessary for the successful delivery and expression of the genetic material applicable in these emerging fields, and GenVec intends to further explore these opportunities.

Proprietary Cell Lines. GenVec s established and proven ORF6 and M2A cell lines are used to produce all of GenVec s proprietary adenovectors. GenVec s cell lines perform excellently in serum-free, animal protein-free suspension culture and efficiently complement for the growth of even the most complex human-origin and nonhuman-origin adenovector constructs. These include vectors bearing the genes for multiple antigens, vectors bearing targeted expression cassettes, and vectors containing inserts that encode for proteins which interfere with the host cell metabolism and therefore pose challenges for scale-up and manufacture. GenVec s cell lines produce high-concentration, stable adenovector lots that meet the rigorous manufacturing standards of GenVec s corporate and governmental collaborators as well as regulatory agencies.

RESEARCH AND DEVELOPMENT

As a biopharmaceutical company developing biologic products, and to support the activities discussed above, GenVec has significant research and development expenditures each year. GenVec s research and development expenses were $0.8 million and $0.7 million for the three months ended March 31, 2017 and 2016, respectively. For the years ended December 31, 2016, 2015 and 2014, GenVec s research and development expenses were $2.5 million, $2.6 million and $2.3 million, respectively. These expenses for the years ended December 31, 2016, 2015 and 2014 were divided between GenVec s research and development programs in the following manner:

	Years ended December 31,		
	2016	2015	2014
		(in millions)	
Therapeutic	$ 1.7	$ 0.5	$
Vaccines	0.5	1.0	1.1
Hearing loss and balance disorders	0.3	1.0	1.1
Other programs		0.1	0.1
Total	$ 2.5	$ 2.6	$ 2.3

INTELLECTUAL PROPERTY

GenVec endeavors to protect and enhance its proprietary technology, inventions, and improvements that are commercially important to the development and sustainability of its business. GenVec generally seeks patent protection for its technology and product candidates in the U.S. and abroad as well as maintain and defend its patent rights whether developed internally or licensed from third parties. GenVec also relies on trade secrets

relating to its proprietary technology platform and on know-how, continuing technology innovation, and in-licensing of opportunities to strengthen, develop and maintain GenVec s proprietary position in the field of gene therapy that may be important for the development and sustainability of GenVec s business.

GenVec s commercial success may depend in part on its ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to its business; defend and enforce its patents; preserve the confidentiality of its trade secrets; and operate without infringing the valid enforceable patents and proprietary rights of third parties.

Patent Rights and Licenses. GenVec and its licensors have patents and continue to seek patent protection for technologies that relate to its product candidates, as well as technologies that may prove useful for future product candidates. GenVec s proprietary intellectual property, including patent and non-patent intellectual property, is generally directed to, for example, matters such as the composition of GenVec s adenovector-based product candidates, its proprietary technologies and processes related to its product development candidates, certain genes and methods of transferring genetic material into cells, and its processes to manufacture and test its adenovector-based product candidates.

As of March 31, 2017, GenVec holds or has licenses to 161 issued, allowed or pending patents worldwide, 44 of which are issued or allowed in the U.S. These patents and patent applications pertain to, among other things: the composition of matter of its vectors; genes that encode therapeutic proteins; expression control elements that regulate the production of the therapeutic proteins by such genes and targeting technology for enhanced target cell selectivity of its product candidates; cell lines used to manufacture its product candidates; methods of constructing, producing (including purification, quality control, and assay techniques), storing and shipping its product candidates; methods of administering its product candidates; and methods of treating disease using its product candidates.

Hearing Loss Program. GenVec has licensed the Atoh1 gene from the Baylor College of Medicine. This license is worldwide and is exclusive for gene therapy applications. GenVec licensed its rights to this gene to Novartis as part of GenVec s worldwide collaboration with Novartis to develop treatments for hearing loss and balance disorders. Patents or patent applications covering GenVec s product candidate are directed to composition of matter for the Atoh1 gene therapy vectors, as well as, compositions and methods of using the candidates emerging from this program. Issued patents that cover the product candidate begin to expire in 2024 and if patents are issued from the pending applications and if the appropriate maintenance, renewal, annuity or other governmental fees are paid for issued patents, GenVec expects coverage to expire in 2035 (worldwide, excluding possible patent term extensions).

Proprietary Vectors. GenVec has issued patents and patent applications covering GenVec s proprietary AdenoVerse technology platform. GenVec has filed patent applications that cover the composition of matter of its new non-human primate vectors, including those based on adenovirus isolated from mountain gorilla that if issued from the pending patent applications and if the appropriate maintenance, renewal annuity, or other governmental fees are paid are projected to expire in 2032 (excluding possible patent term extensions). Issued patents that cover the composition and use of GenVec s proprietary technology platform began to expire in 2015 and extend through 2033 if appropriate maintenance, renewal, annuity, or other governmental fees are paid.

In 2016, GenVec announced progress on the intellectual property front that GenVec believes will help secure its interests to fully explore the potential of some of its newer adenovirus vectors. In January 2016 a U.S. patent that provides broad protection for GenVec s gene delivery vectors derived from mountain gorillas was issued. Based on the preclinical data GenVec has seen to date, GenVec believes these gorilla vectors have a strong potential in the molecular vaccines space as well as other applications. In addition, GenVec was notified U.S. and European patents were issued in 2015 that cover GenVec s monkey adenovirus vector technology.

In May 1998, GenVec entered into an Amended and Restated Exclusive License Agreement, which we refer to as the Cornell agreement, with the Cornell Research Foundation, which we refer to as Cornell, which was

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subsequently amended. Pursuant to the Cornell agreement, GenVec licenses certain proteins, genes, gene vectors, and similar biological materials that relate to GenVec s adenovector platform. GenVec is obligated to pay Cornell a yearly maintenance fee of $50,000 (creditable against any royalty payable in that year). No royalty payments have been made to date, and prior to commercialization of a licensed product, GenVec has no royalty obligations to Cornell. The Cornell agreement may be terminated by Cornell or by GenVec in the event of an uncured material breach by the other party or by GenVec for any reason with prior written notice. The Cornell agreement continues in full force until the expiration of all patents or applications covered thereby, unless otherwise terminated. The latest expiring patent under the Cornell agreement expires in 2020.

Licenses to Genes. To create GenVec s product candidates, GenVec combines its vectors with genes intended to produce proteins with therapeutic potential. GenVec has secured licenses to applicable genes for this purpose. GenVec often seeks to obtain exclusivity, consistent with its business needs, when securing such licenses. In return for the rights GenVec receives under its gene licenses, GenVec typically is required to pay royalties based on any commercial sales of the applicable product during a specified time period, as well as provide additional compensation, including up-front license fees and product development-related milestone payments.

Any of GenVec s licenses may be terminated by the licensor if it is in material breach of a term or condition of the particular license agreement, or if GenVec becomes insolvent. In addition, some of GenVec s licenses require it to achieve specific milestones.

Production, Purification, Quality Assessment and Formulation Technology. GenVec holds issued patents expiring beginning in 2019 and has pending patent applications pertaining to the production, purification, quality assessment, and formulation of GenVec s product candidates, and if patents are issued from the pending applications and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid for issued patents, GenVec expects coverage to expire in 2033 (worldwide, excluding possible patent term extensions). In particular, GenVec holds issued patents covering the process for manufacturing its product candidates, the purification of its product candidates applicable to both research and commercial scales, methods of assessing and confirming the quality and purity of its product candidates for clinical testing and commercialization, and product formulations that improve the stability of product candidates and allow its product candidates to be conveniently stored, shipped, and used. GenVec is aware, however, of issued patents and pending patent applications of third parties relating to these and other aspects of production, purification, quality assessment, and formulation technology. It could be alleged that GenVec s production, purification, quality assessment, and formulation technology conflict with such existing or future patents.

GenVec anticipates that it, and its current and future licensors, will continue to seek to improve existing technologies, develop new technologies and, when appropriate, secure patent protection for such improvements and new technologies.

Certain patents pertaining to GenVec s product candidates may be eligible for Patent Term Extension under 35 U.S.C. §156. The term of any patent that claims a human drug product (including human biological products), a method of using a drug product, or a method of manufacturing a drug product is eligible for an extension to restore that portion of the patent term that has been lost as a result of FDA review subject to certain limitations.

Trade Secrets. To a more limited extent, GenVec relies on trade secret protection and confidentiality agreements to protect its interests. It is GenVec s policy to require its employees, consultants, contractors, manufacturers, collaborators, and other advisors to execute confidentiality agreements upon the commencement of employment, consulting or collaborative relationships with us. GenVec also requires signed confidentiality agreements from any entity that is to receive confidential data. With respect to employees, consultants, and contractors, the agreements generally provide that all inventions made by the individual while rendering services to GenVec shall be assigned to

GenVec as its property.

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MANUFACTURING AND SUPPLY

Technology for Production, Purification, Quality Assessment and Formulation. GenVec believes its proprietary production technology and know-how facilitate the production, purification, quality assessment, and formulation of GenVec s product candidates. The structure of GenVec s vectors and the procedures for their production and purification enable GenVec to minimize the presence of contaminants. GenVec believes its proprietary positions provide a competitive advantage in the following areas:

Production and Scale-Up. GenVec produces its adenovectors using cell lines grown in culture under standardized and controlled conditions. GenVec has developed specialized proprietary cell lines for production of its vectors. GenVec employs materials that are free of animal-derived components. GenVec has designed its production processes to be scalable for commercial production and to reduce the potential for contamination.

Purification. GenVec has proprietary methods for the purification of is vectors that GenVec believes are scalable to commercial levels as well as suitable for small-scale use in discovery and testing of new product candidates.

Quality Assessment. GenVec has established proprietary methods to assess and confirm the quality and purity of vectors for research purposes and clinical testing. GenVec uses advanced techniques to determine the physical characteristics of its product candidates as a means to establish product consistency and purity. GenVec has an issued U.S. patent covering this technology. GenVec believes these methods are also suitable for quality assessment of commercial production.

Formulation. GenVec has developed a novel product formulation that improves the stability of its vectors and is covered by issued U.S. patents. GenVec s formulation allows products to be stored, shipped, and used in a controlled manner that assures activity for the duration of the product shelf-life. For research purposes, GenVec s formulation enhances the ease and reproducibility of testing.

Manufacturing Strategy. GenVec has historically relied on third-party manufacturers or GenVec s collaborators for cGMP production for clinical trials. GenVec has significant experience working with contract manufacturers and GenVec has successfully transferred manufacturing processes to several collaborators and contract manufacturers. GenVec s research and development facility is located in Gaithersburg, Maryland, where GenVec has established laboratories and staff to support the non-cGMP production and characterization methods for GenVec s product candidates. Many of the production and assay technologies developed for GenVec s hearing restoration, GenVec s now discontinued TNFerade clinical study, and those developed under GenVec s now terminated HIV vaccine contract with the National Institutes of Health (NIH), are suitable for GenVec s other product development programs.

GenVec currently has two suppliers for its clinical manufacturing components, one for human health and one for animal health candidates. GenVec procures raw materials, including specialized components known as resins, for GenVec s product purification and testing methods from a limited number of suppliers. GenVec also procures nutrients used to support the growth of microorganisms or other cells from Thermo Fischer Scientific Corporation and another supplier, Lonza Walkersville, Inc., for custom buffers.

GENVEC S COMPETITION

Competition in the discovery and development of new methods for treating and preventing disease is intense. GenVec faces, and will continue to face, substantial competition from pharmaceutical and biotechnology companies, as well as academic and research institutions and government agencies both in the U.S. and abroad. GenVec faces competition from organizations pursuing the same or similar technologies used by GenVec in its drug discovery efforts and from organizations that are competitive with GenVec s potential therapeutic and vaccine product candidates.

Many of GenVec s competitors, either alone or together with their collaborative partners, have substantially greater financial resources and larger research and development organizations. In addition, GenVec s experience

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in clinical trials, obtaining FDA and other regulatory approvals, manufacturing, and commercialization of products may be more limited. GenVec also competes in recruiting and retaining highly qualified scientific personnel and consultants. GenVec s ability to compete successfully depends on adequate funding and collaborators who can supplement its capabilities.

GenVec is aware of products under development by its competitors that target the same prevention or treatment of disease. There are several development-stage and established entities, including major pharmaceutical and biotechnology companies that are actively engaged in infectious disease vaccine research and development. These include Sanofi S.A., Novartis, GlaxoSmithKline plc, MedImmune, Inc., (a wholly owned subsidiary of AstraZeneca), Merck & Co., Inc., Pfizer Inc., Crucell N.V. (part of the Janssen Pharmaceutical Companies of Johnson & Johnson), Bavarian Nordic A/S, Okairos Srl (acquired by GlaxoSmithKline), Genocea BioSciences Inc., Vical Incorporated, Emergent Biosolutions Inc., and Novavax Inc. among others.

GenVec believes its competitive success will be based on the efficacy and safety of its products, as well as its ability to create and maintain scientifically advanced technology, attract and retain skilled scientific and management personnel, obtain patents or other protection for its products and technology, obtain regulatory approvals, and successfully commercialize its products either independently or through collaborators.

Hearing Loss and Balance Disorders. The market for hearing loss treatments is dominated by devices such as hearing aids or cochlear implants, which are the current standard of care. There are no FDA-approved drug therapies. Several biotechnology and pharmaceutical companies have announced research programs into therapies for either the restoration of function or for the protection of hearing function. These therapies are in various stages of development.

RSV Vaccine. There are a number of companies pursuing the development of a RSV vaccine. These include but are not limited to MedImmune Inc., Sanofi S.A., Bavarian Nordic A/S, Crucell N.V., Novavax Inc., NanoBio Corporation, and Okairos Srl.

HSV Vaccine. HSV vaccines are currently under development by Genocea BioSciences Inc., Sanofi S.A., and Vical Incorporated, and Admedus Vaccines.

FMD Vaccine. Vaccine manufacturers include Merial, Intervet Inc., a subsidiary of Merck & Co. Inc., Bayer AG, Indian Immunological Ltd. and other local vaccine producers around the world, including government producers as well as those pursuing the development of new vaccines.

Malaria Vaccine. There are currently no vaccines approved for the prevention of malaria. Companies developing malaria vaccines include GlaxoSmithKline plc, Sanofi S.A., Crucell N.V., Genocea BioSciences Inc., Sanaria, and Okairos S.r.l.

GOVERNMENT REGULATION

Regulation of Biologic Products. The research, development, testing, manufacture, quality, safety, effectiveness, labeling, packaging, storage, approval, distribution, marketing, record keeping, advertising and promotion, and import and export of any biologic products developed by GenVec or its collaborators are subject to regulation by federal, state, local, and foreign governmental authorities. In the U.S., new drugs are subject to extensive regulation under the Federal Food, Drug, and Cosmetic Act, and biologic products, such as therapeutic products and vaccines, are subject to regulation both under provisions of that Act and under the Public Health Service Act. The process of obtaining FDA approval for a new product is costly and time-consuming, and the outcome is not guaranteed. If approved, drug products are subject to ongoing regulation, and compliance with appropriate federal, state, local, and foreign statutes

and regulations will require the expenditure of substantial time and financial resources.

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Biologic Product Candidates for Human Health

The steps required before GenVec s proposed investigational biologic products may be marketed in the U.S. (other than for veterinary biologics, including its FMD vaccine product candidate, which are discussed below), include:

- performance of preclinical (animal and laboratory) tests;
- submission to FDA of an IND, which must become effective before human clinical trials may commence;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy in the intended target population for each indication for which approval is sought;
- performance of a consistent and reproducible manufacturing process intended for commercial use;
- submission to the FDA of a Biologics License Application, referred to herein as a BLA; and
- FDA approval of the BLA before any commercial sale or shipment.

Preclinical studies may take several years to complete. The results of these studies, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND. The FDA must review the IND prior to the commencement of human clinical trials. Unless the FDA raises concerns (such as concerns that human research subjects will be exposed to unreasonable risks), the IND will become effective 30 days following its receipt by the FDA, and the clinical trials covered by the IND may commence.

Clinical trials typically are conducted in three sequential but often overlapping phases. In Phase 1, a drug is typically studied in a small number of healthy volunteers or patients to test the drug for safety or adverse effects, dosage tolerance, absorption, metabolism, excretion and clinical pharmacology. Phase 2 involves clinical trials in the targeted patient population to determine the effectiveness of the drug for specific, targeted indications, to determine dosage tolerance and optimal dosage, and to gather additional safety data. Phase 3 clinical trials are commonly referred to as pivotal, or registrational, studies and are conducted to further evaluate dosage, to provide substantial evidence of clinical efficacy and to further test for safety in an expanded and diverse patient population. Each phase may take several years to complete.

The conduct of the clinical trials is subject to extensive regulation, including compliance with good clinical practice regulations and guidelines, obtaining informed patient consent, sponsor monitoring, auditing of the clinical, laboratory and product manufacturing sites, and review and approval of each study by an independent institutional review board, referred to herein as the IRB, for each site proposing to conduct the clinical trial. The FDA, the IRB, a DSMB or Data Monitoring Committee, or the sponsor may, at its discretion, suspend or terminate a clinical trial at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk.

In addition to the regulations discussed above, there are a number of additional standards that apply to clinical trials involving the use of gene therapy. The FDA has issued various guidance documents regarding gene therapies, which

outline additional factors the FDA will consider at each of the above stages of development and relate to, among other things: the proper preclinical assessment of gene therapies; the chemical, manufacturing and control information that should be included in an IND; the proper design of tests to measure product potency in support of an IND or BLA; and measures to observe potential delayed adverse effects in subjects who have been exposed to investigational gene therapies when the risk of such effects is high. Further, the FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by 10 years of annual queries, either in person or by questionnaire.

Promising data in early-stage clinical trials do not necessarily assure success in later-stage clinical trials. The FDA may request that additional clinical trials be conducted as a condition to product approval. Additionally,

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new government requirements may be established that could delay or prevent regulatory approval of products under development.

After the completion of the required clinical trials, if GenVec believes the data indicate the biologic product is safe and effective, GenVec would prepare a BLA and submit it to the FDA. This process takes substantial time and effort. The FDA may refuse to file the BLA and request additional information, in which case, the application must be resubmitted with the supplemental information. Once a BLA is deemed filed by the FDA, there is no guarantee the FDA will approve the BLA. The FDA has substantial discretion in the approval process and may disagree with GenVec s interpretation of the preclinical or clinical data and request additional data and information, which could significantly delay, limit, or even prevent regulatory approval.

As part of this review, the FDA may refer the BLA to an appropriate advisory committee, typically a panel of physicians, for review, evaluation, and an approval recommendation. Although the FDA is not bound by the opinion of the advisory committee, advisory committee discussions may further delay, limit, or prevent approval. The FDA also may conclude that as part of the BLA, the sponsor must develop a risk evaluation and mitigation strategy, referred to herein as a REMS, to ensure that the benefits of the drug outweigh the risks. A REMS may have different components, including a package insert directed to patients, a plan for communication with healthcare providers, restrictions on a drug s distribution, or a medication guide to provide better information to consumers about the drug s risks and benefits.

If its evaluations of the BLA are favorable and the agency concludes the standards for approval have been met, the FDA will issue an approval letter. If the FDA believes the BLA is deficient in some way that precludes approval, it will issue a Complete Response Letter that generally identifies the deficiencies, which can be minor, such as requiring labeling changes, or major, such as requiring additional preclinical or clinical studies. The Complete Response Letter may also include recommended actions the applicant might take to place the BLA in a condition for approval. If a Complete Response Letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the BLA. If the deficiencies have been addressed to the FDA s satisfaction, the FDA may issue an approval letter. Even if the requested information and data are submitted, however, the FDA may ultimately decide the BLA does not satisfy the criteria for approval.

Prior to granting approval, the FDA generally conducts an inspection of the facilities, including third-party contract facilities that will be involved in the manufacture, production, packaging, testing, and control of the drug substance and finished drug product for compliance with current cGMP. The FDA will not approve the BLA unless cGMP compliance is satisfactory. In addition, each manufacturing establishment must be registered with the FDA and is subject to periodic FDA inspection. In order to supply products for use either inside or outside the U.S., including for investigation in clinical trials, domestic and foreign manufacturing establishments, including third-party facilities, must comply with cGMP regulations and are subject to periodic inspection by the corresponding regulatory agencies in their home country, often under reciprocal agreements with the FDA or by the FDA.

After a biologic product is approved, it is subject to significant ongoing regulation and must comply with requirements relating to manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, distribution, and recordkeeping. As a condition of BLA approval, the FDA may require post-approval testing (referred to as Phase 4 clinical trials) and surveillance to monitor the product s safety or efficacy. In addition, the holder of an approved BLA is required to keep extensive records; to report certain adverse reactions, production deviations, and other problems to the FDA; to provide updated safety and efficacy information, and to comply with requirements concerning advertising and promotional labeling for their products. Generally, a company can promote a product only for those claims relating to safety and efficacy that are consistent with the labeling approved by the FDA and supported by substantial evidence. Failure to comply with the regulatory requirements of the FDA and other

applicable U.S. and foreign regulatory authorities could result in administrative or judicially imposed sanctions or other setbacks, including warning letters, restrictions on the product, product recalls, suspension or withdrawal of approval, seizures, injunctions, civil fines, and criminal sanctions.

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If the FDA becomes aware of new safety information, it may require post-approval studies or clinical trials to investigate known serious risks or signals of serious risks or in response to the occurrence of unexpected serious risks identified following approval. If a post-approval study is required, periodic status reports must be submitted to the FDA. Failure to conduct such post-approval studies in a timely manner may result in substantial civil fines. In addition, newly discovered or developed safety or efficacy data may require changes to an approved product s distribution or labeling, including the addition of new warnings, contraindications or a REMS, or suspended marketing or withdrawal of the product.

A biologic product is also subject to regulatory approval in other countries in which it is intended to be marketed. No such product can be marketed in a country until the regulatory authorities of that country have approved an appropriate license application. FDA approval does not assure approval by other regulatory authorities. In many countries, the government is involved in the pricing of the product. In such cases, a pricing review period often begins after market approval is granted.

Under the Biologics Price Competition and Innovation Act of 2009, referred to herein as BPCIA, there is an abbreviated approval pathway for biologic products that are biosimilar to a previously approved biologic product, which is called the reference product. This abbreviated approval pathway is intended to permit a biosimilar product to come to market more quickly and less expensively than if a full BLA were submitted, by relying to some extent on the FDA s previous review and approval of the reference product. If a proposed biosimilar product meets the statutory standards for approval (which include demonstrating that it is highly similar to the reference product and there are no clinically meaningful differences in safety, purity or potency between the products), the proposed biosimilar product may be approved on the basis of an application that is different from the standard BLA. In addition, a biosimilar product may be approved as interchangeable with the reference product if the proposed product application meets standards intended to ensure that the biosimilar product can be expected to produce the same clinical result as the reference product.

The BPCIA provides exclusivity periods during which a product approved under a BLA cannot be relied on as a reference product. No biosimilar application may be submitted to the FDA for a period of four years after the reference product was approved, and no biosimilar application may be approved until 12 years after the reference product s approval. If pediatric studies with the reference product are performed and accepted by the FDA, the 12-year exclusivity period will be extended for an additional six months. Additionally, the first biosimilar product approved as interchangeable with a reference product will be granted an exclusivity period of varying length, depending on the factual circumstances. The contours of the BPCIA are being defined as the statute is implemented over a period of years. Some issues may be resolved through regulation or agency guidance, but other interpretations may develop on an ad hoc basis as the FDA confronts them in the context of specific applications. The FDA has to date issued various guidance documents and other materials indicating the agency s thinking regarding a number of issues implicated by the BPCIA. Additionally, the FDA s approval in 2015 of the first biosimilar application helps define the agency s approach to certain issues.

Biologic Product Candidates for Animal Health

GenVec s FMD vaccine product candidate is subject to a separate regulatory regime. In the U.S., governmental regulation of animal health products is primarily provided by two agencies: APHIS within the USDA, and the Center for Veterinary Medicine within the FDA. Vaccines for animals are considered veterinary biologics and are regulated by the Center for Veterinary Biologics of USDA under the auspices of the Virus-Serum-Toxin Act. The USDA licensing process involves the submission of several data packages. These packages include information on how the product will be manufactured, information on the efficacy and safety of the product in laboratory and target animal studies, and information on performance of the product in field conditions. The USDA may issue one of two types of

licenses: a full license or a conditional license. Conditional licenses are used to meet an emergency condition, limited market, local situation or other special circumstance and do not permit the general commercialization of the product. Conditionally licensed products are required to be pure and safe, and have a reasonable expectation of efficacy. Conditional licenses are effective for a finite time period and

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distribution of conditionally licensed products in each state is limited to authorized recipients designated by proper state officials. Conditional licenses may be renewed if the applicant demonstrates a good-faith effort toward obtaining full licensure.

In June 2012, APHIS issued a conditional license for GenVec s FMD vaccine for use in cattle. The conditional license was issued because of the need for an FMD vaccine that is capable of being manufactured in the United States that allows for the differentiation between infected and vaccinated animals. The vaccine is available to agriculture officials in the event of an FMD emergency situation. The conditional license was renewed in 2014 and 2016 and is effective until 2018. GenVec expects to seek a further renewal in 2018 when the current conditional license expires.

Reimbursement of Biologic Products. If and when GenVec s products reach commercialization, insurance companies, health maintenance organizations, other third-party payers, and federal and state governments will be the primary payers for GenVec s products. The largest payer in this group will probably be the Centers for Medicare and Medicaid Services, referred to herein as CMS, the federal agency that administers the Medicare and Medicaid programs. Under Medicare, there are different reimbursement methodologies for certain drugs and biological products that depend on the site of service. These methodologies generally use average sales price, which we refer to as ASP, information. Manufacturers, including us, if and when GenVec or its collaborators commercialize GenVec s products in the U.S., are required to provide ASP information for certain products to CMS on a quarterly basis if GenVec participates in the Medicaid program. If a manufacturer is found to have made a misrepresentation in the reporting of ASP, the statute provides for civil monetary penalties of up to $12,856 for each misrepresentation for each day in which the misrepresentation was applied. Additional civil monetary penalties apply for reporting false information or reporting required information late. ASP is used to compute Medicare payment rates, updated quarterly based on this ASP information. Until enough ASP data are available to calculate a payment rate, reimbursement is wholesale acquisition cost plus 6%. There also is a mechanism for comparison of the ASP for a product to the widely available market price and the Medicaid Average Manufacturer Price, which we refer to as AMP, for the product. When the ASP for a product exceeds the product s AMP by a specified percentage, the product s ASP may be disregarded and an AMP-based reimbursement rate may be applied instead, which could cause further decreases in Medicare payment rates.

For covered physician-administered drugs and biological products furnished in a physician s office, if the physician purchases the drug or biological product, CMS will reimburse the physician based upon that drug or biological product s ASP plus 6% (reduced by sequestration, as discussed below). The ASP is determined by CMS based upon information reported by manufacturers. Medicare also has several reimbursement methodologies for drugs and biological products administered in hospital outpatient departments. New drugs and biologicals whose cost is not insignificant in relation to payment for related procedures are granted pass-through status and are reimbursed at ASP plus 6% for the first two to three years of payment under the Medicare hospital outpatient prospective payment system. For many other drugs and biological products that do not qualify for pass-through status but have an average cost per day greater than $110, the current Medicare payment to a hospital outpatient department is ASP plus 6%. Drugs and biological products with an average cost per day equal to or less than $110 are not separately reimbursed; payment for these products is included in payment for the associated procedure. Payment levels for drugs without pass-through status and the $110 threshold are subject to change through regulation each calendar year.

In addition, Congress may change Medicare reimbursement amounts or methods by statute. For example, Medicare payments for all items and services, including drugs and biologicals, have been reduced by 2% under the sequestration (automatic spending reductions) required by the Budget Control Act of 2011, as amended by the American Taxpayer Relief Act of 2012. Subsequent legislation extended the 2% reduction, on average, to 2025, unless Congress modifies the sequestration in the future. In addition, Congress or CMS could change ASP-based reimbursement amounts through statute or regulation for the physician office or hospital outpatient settings, respectively. The Patient

Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, referred to herein together as PPACA, also requires CMS to test new payment methodologies that would bundle payment for physician

and hospital services and supplies, including drugs and biological products, for an episode of care. Changes to the calculation of ASP or Medicare reimbursement methodologies could affect reimbursement for GenVec s products and could negatively impact GenVec s results of operations, if and when GenVec begins to commercialize products that could be reimbursed by the Medicare program.

Medicare Part D provides Medicare beneficiaries with drug coverage for self-administered drugs and biological products and other drugs and biological products not covered by Medicare, including many vaccines. This voluntary benefit is being implemented through private plans under contractual arrangements with the federal government. Currently, these plans negotiate directly with pharmaceutical manufacturers for rebates on drugs dispensed to Medicare Part D beneficiaries. Like pharmaceutical coverage through private health insurance, Medicare Part D plans establish formularies and use other utilization management tools when determining the drugs and biological products that are offered by each plan. These formularies can change on an annual basis, subject to federal governmental review. These plans may also require beneficiaries to provide out-of-pocket payments for such products. Private Medicare Part D plans pay physicians one payment that includes both the administration cost and the cost of the vaccine for those vaccines that are not already covered by law under a different component of the Medicare program. PPACA requires manufacturers to pay rebates of 50% on all drugs dispensed to beneficiaries, other than low-income beneficiaries, in the Medicare Part D coverage gap, often referred to as the donut hole. It is possible that future health reform legislation would require the government to negotiate Medicare Part D rebates directly, which could result in much higher rebate amounts than those currently negotiated with the plans. In addition, although certain treatments are currently included in CMS s protected classes of drugs for purposes of Medicare Part D formularies, which generally ensures inclusion on plan formularies, it is possible that future regulatory or legislative changes could change that status.

Federal law requires pharmaceutical manufacturers to pay rebates on covered outpatient drugs reimbursed by the Medicaid program as a condition of having federal funds being made available to pay for those drugs under Medicaid and Medicare Part B. Rebate amounts for a product are determined by a statutory formula that is based on prices defined by statute: AMP, which must be calculated for all products that are covered outpatient drugs under the Medicaid program, and best price, which must be calculated only for those covered outpatient drugs that are innovator products, such as biological products and products approved under new drug applications. A pharmaceutical manufacturer is required to report AMP and best price for each of its covered outpatient drugs to the government on a regular basis. AMP is reported quarterly and monthly, and best price is reported quarterly.

Various states have adopted mechanisms under Medicaid that seek to control drug reimbursement, including by disfavoring certain higher priced drugs and by seeking supplemental rebates from manufacturers. PPACA and subsequent legislation made significant changes to the Medicaid drug rebate program, including changing the definition of AMP, increasing the minimum rebate percentage, changing the rebate calculation for new formulations of existing products, capping the rebate amount at 100% of AMP, and expanding rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well. GenVec expects, if and when GenVec or its collaborators commercialize GenVec s products in the U.S., a significant portion of GenVec s revenue and the revenue of its collaborators from sales of GenVec s products will be obtained through government payers, including Medicare, Medicaid and Department of Defense, referred to herein as DoD, programs, and any failure to qualify for reimbursement for GenVec s products under those programs would have a material adverse effect on future revenues from sales of GenVec s products.

A pharmaceutical manufacturer must also participate in the 340B drug pricing program in order for federal funds to be available to pay for the pharmaceutical manufacturer s drugs under Medicaid and Medicare Part B. Under this program, the participating pharmaceutical manufacturer agrees to charge statutorily-defined covered entities no more than the 340B discounted ceiling price for the pharmaceutical manufacturer s covered outpatient drugs. The formula

for determining the discounted purchase price is defined by statute and is based on the AMP and rebate amount for a particular product as calculated under the Medicaid drug rebate program, discussed above. PPACA also obligates the Secretary of the Department of Health and Human Services to create regulations and processes to improve the integrity of the 340B drug pricing program and to ensure the agreement that

manufacturers must sign to participate in the program obligates manufacturers to offer the ceiling price to covered entities if the manufacturer makes the drug available to any other purchaser at any price and report to the government the ceiling prices for its drugs. In addition, legislation may be introduced that, if passed, could further expand the 340B drug pricing program to include additional covered entities or could require participating manufacturers to agree to provide 340B discounted pricing on drugs used in the inpatient setting. To the extent that PPACA and subsequent legislation, as discussed above, causes the statutory and regulatory definitions of AMP and the Medicaid rebate amount to change, these changes also impact the 340B discounted ceiling price.

In order to be eligible to have GenVec s products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by certain federal agencies and grantees, GenVec anticipates that it will participate in the Department of Veterans Affairs Federal Supply Schedule, referred to herein as the VA FSS, pricing program, established by Section 603 of the Veterans Health Care Act of 1992. Under this program, GenVec will be obligated to make its products available for procurement on an FSS contract and charge prices to four federal agencies VA, DoD, Public Health Service and Coast Guard that are no higher than the statutory Federal Ceiling Price, referred to herein as the FCP. The FCP is based on the non-federal average manufacturer price, referred to herein as Non-FAMP, which GenVec will be required to calculate and report to VA on a quarterly and annual basis.

To the extent GenVec s other products become available in the retail pharmacy setting if and when they are commercialized, GenVec would be subject to Section 703 of the National Defense Authorization Act for Fiscal Year 2008. DoD has established a program under which it seeks FCP-based rebates from drug manufacturers on TRICARE retail utilization of covered drugs. Under this authority, DoD asserts an entitlement to rebates on TRICARE Retail Pharmacy utilization unless DoD grants a waiver or compromise of amounts due. Rebates are computed by subtracting the applicable FCP from the corresponding annual Non-FAMP. DoD has asserted the right to apply offsets and/or proceed under the Debt Collection Act in the event that a company does not pay rebates or request a waiver of rebate liability in a timely fashion. Any company that wants its covered drugs to be eligible for favorable positioning on DoD s Uniform Formulary must enter into a Section 703 Agreement with the Defense Health Agency under which the company agrees to pay the quarterly rebates.

If and when GenVec begins commercializing its products, GenVec expects to experience pricing pressures in the United States in connection with the sale of these products due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals. GenVec is unable to predict what additional legislation, regulations or policies, if any, relating to the healthcare industry or third-party coverage and reimbursement may be enacted in the future or what effect such legislation, regulations or policies would have on GenVec s business. Any cost containment measures, including those listed above, or other healthcare system reforms that are adopted could have a material adverse effect on GenVec s ability to operate profitably.

In addition to the changes discussed above, PPACA substantially changes the way healthcare is financed by both governmental and private insurers and significantly impacts the pharmaceutical industry in other ways as well. PPACA contains a number of provisions that are expected to impact GenVec s business and operations, in some cases in ways GenVec cannot currently predict. Changes that may affect GenVec s business if and when its products are commercialized in the U.S. include those governing expanded enrollment in federal and private healthcare programs, new Medicare reimbursement methods and rates, increased rebates and taxes on pharmaceutical products, and revised fraud and abuse and enforcement requirements. These changes will impact existing government healthcare programs and will result in the development of new programs.

The effects of reforms under PPACA will be shaped significantly by implementing regulations and by state government decisions. On February 1, 2016, CMS issued a final regulation to implement the changes to the Medicaid drug rebate program under PPACA. This regulation became effective on April 1, 2016. Many states chose not to

expand their Medicaid programs by raising the income limit to 133% of the federal poverty level, as

permitted by PPACA. It is unclear whether these states will choose to expand their programs in the future and whether there will be more uninsured patients than anticipated when Congress passed PPACA. For each state that does not choose to expand its Medicaid program as permitted by PPACA, there will be fewer insured patients overall. The reduction in the number of insured patients could impact GenVec s sales, business and financial condition following the commercialization, if successful, of GenVec s products in the U.S.

Moreover, legislative changes to PPACA and new or revised regulations remain possible and appear likely in the 115th U.S. Congress and under the Trump Administration. These changes could affect all of the PPACA-related policies discussed above and could have a significant effect on the number of insured patients in the U.S., the breadth of coverage under insurance plans, financing of healthcare, and reimbursement rates, which could impact GenVec s sales, business and financial condition following the commercialization, if successful, of GenVec s products in the U.S. GenVec expects that PPACA, as currently enacted or as it may be amended in the future, and other healthcare reform measures that may be adopted in the future, could have a material adverse effect on GenVec s industry generally and on its ability to successfully commercialize its product candidates, if approved.

Other Laws and Regulations.

GenVec s business may be subject to healthcare fraud and abuse regulation and enforcement by both the federal government and the states in which GenVec conducts its business, particularly once third-party reimbursement becomes available for one or more of its products. The healthcare fraud and abuse laws and regulations that may affect GenVec s ability to operate include but are not limited to:

The federal Anti-Kickback Law, which prohibits, among other things, knowingly or willingly offering, paying, soliciting or receiving remuneration, directly or indirectly, in cash or in kind, to induce or reward the purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any health care items or service for which payment may be made, in whole or in part, by federal healthcare programs such as Medicare and Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical companies on one hand and prescribers, purchasers and formulary managers on the other. Further, PPACA clarified that liability may be established under the federal Anti-Kickback Law without proving actual knowledge of the statute or specific intent to violate it. In addition, PPACA amended the Social Security Act to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Law constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Although there are a number of statutory exemptions and regulatory safe harbors to the federal Anti-Kickback Law protecting certain common business arrangements and activities from prosecution or regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration to those who prescribe, purchase, or recommend pharmaceutical and biological products, including certain discounts, or engaging such individuals as speakers or consultants, may be subject to scrutiny if they do not fit squarely within an exemption or safe harbor. GenVec s practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, there are no safe harbors for many common practices, such as educational and research grants or patient assistance programs.

The federal civil False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds or knowingly making, using or causing to be made or used, a false record or statement material to an

obligation to pay money to the government or knowingly concealing or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. Many healthcare companies have been investigated and have reached substantial financial settlements with the federal government under the civil False Claims Act for a variety of alleged improper activities including causing false claims to be submitted as a result of the marketing of their products for unapproved and thus non-reimbursable uses, inflating prices reported to private price publication services which are used to set drug payment rates under government healthcare

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programs, and other interactions with customers including those that may have affected their billing or coding practices and submission to the federal government. In addition, PPACA amended federal law to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Law constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Pharmaceutical and other healthcare companies also are subject to other federal false claims laws, including, among others, federal criminal healthcare fraud and false statement statutes that extend to non-government health benefit programs.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended by the Health Information Technology for Economic and Clinical Health Act, among other things, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements in connection with the delivery of or payment for healthcare benefits, items or services, and also imposes obligations with respect to safeguarding the privacy, security and transmission of individually identifiable health information. HIPAA also prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services.

Numerous federal and state laws and regulations that address privacy and data security, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws (e.g., Section 5 of the FTC Act), govern the collection, use, disclosure and protection of health-related and other personal information. Failure to comply with data protection laws and regulations could result in government enforcement actions and create liability for GenVec (which could include civil and/or criminal penalties), private litigation and/or adverse publicity that could negatively affect GenVec s operating results and business.

The federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, which requires certain pharmaceutical and biological manufacturers to engage in extensive tracking of payments or transfers of value to physicians and teaching hospitals and public reporting of the payment data. Pharmaceutical and biological manufacturers with products for which payment is available under Medicare, Medicaid or the State Children s Health Insurance Program are required to have started tracking such payments on August 1, 2013, and must submit a report on or before the 90th day of each calendar year disclosing reportable payments made in the previous calendar year.

Analogous state laws and regulations, such as state anti-kickback and false claims laws, which may apply to items or services reimbursed under Medicaid and other state programs or, in several states, regardless of the payer. Some state laws also require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products and to report gifts and payments to certain health care providers in those states. Some of these states also prohibit certain marketing-related activities including the provision of gifts, meals, or other items to certain health care providers. In addition, California, Connecticut, Nevada and Massachusetts require pharmaceutical companies to implement compliance programs or marketing codes of conduct.

The federal Foreign Corrupt Practices Act of 1997 and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from providing money or anything of value to officials of foreign governments, foreign political parties or international organizations with the intent to obtain or retain business or seek a business advantage. Recently, there has been a substantial increase in anti-bribery law enforcement activity by U.S. regulators, with more frequent and aggressive investigations and enforcement proceedings by both the Department of Justice and the U.S. Securities and Exchange Commission. A determination that GenVec s operations or activities are not, or were not, in compliance with U.S. or foreign laws or regulations could result in the imposition of substantial fines, interruptions of business, loss of supplier, vendor or other third-party relationships, termination of necessary licenses and permits and other legal or equitable sanctions. Other internal or government

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investigations or legal or regulatory proceedings, including lawsuits brought by private litigants, may also follow.

If GenVec s operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, GenVec may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government-funded healthcare programs like Medicare and Medicaid, and the curtailment or restructuring of GenVec s operations, any of which could adversely affect is ability to operate its business and its financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against GenVec for violation of these laws or regulations, even if GenVec successfully defends against it, could cause GenVec to incur significant legal expenses and divert its management s attention from the operation of its business. Moreover, failure to achieve and sustain compliance with applicable federal and state privacy, security and fraud laws could result in government enforcement actions and create liability for GenVec (which could include civil and/or criminal penalties), private litigation and/or adverse publicity that could negatively affect GenVec s operating results and business.

GenVec s business is also subject to regulation under various state and federal environmental laws, including the Occupational Safety and Health Act, the Resource Conservation and Recovery Act and the Toxic Substances Control Act. These and other laws govern GenVec s use, handling, and disposal of various biological, chemical and radioactive substances used in and wastes generated by GenVec s operations. GenVec is not aware of any costs or liabilities in connection with any environmental laws that will have a material adverse effect on GenVec s business or financial condition.

EMPLOYEES

As of May 5, 2017, GenVec had 16 full-time employees, three of whom hold Ph.D. degrees and five of whom hold other advanced degrees. Of GenVec s total workforce, six are engaged primarily in research and development activities and 10 are engaged primarily in business development, finance, marketing, and administration functions. None of GenVec s employees is represented by a labor union or covered by a collective bargaining agreement, and GenVec considers its employee relations to be good.

PRINCIPAL EXECUTIVE OFFICES

GenVec was incorporated in Delaware in 1992. GenVec s principal executive offices are located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878. GenVec s telephone number at that location is (240) 632-0740.

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Description of GenVec s properties

GenVec s corporate offices and research and development laboratories are located at a facility at 910 Clopper Road, Gaithersburg, Maryland, where GenVec leases space. The lease was amended effective July 1, 2016 to add 4,457 square feet of leased space, and GenVec now leases space in the facility totaling 13,969 square feet. The term of the lease expires on June 30, 2021. GenVec currently believes this facility is sufficient to meet its present needs. The leased space includes unused space GenVec can utilize to accommodate future growth.

GenVec s legal proceedings

On March 28, 2017 and April 6, 2017, putative stockholder class actions were filed in the United States District Court for the District of Delaware styled, respectively, *Parshall v. GenVec, Inc., et. al.*, Case No. 1:17-cv-00338 (D.Del.) and *Mussman v. GenVec, Inc., et al.*, Case No. 1:99-mc-09999 (D.Del.). Additionally, on April 10, 2017 and April 25, 2017, actions were filed in the United States District Court for the District of Maryland styled, respectively *Hoose v. GenVec, Inc. et al.*, Case No. 8:17-cv-00987, and *Pillai v. GenVec, Inc. et al.*, Case No. 8:17-cv-01143 (which, together with the *Parshall* and *Mussman* actions, are referred to herein as the Stockholder Actions). The Stockholder Actions assert claims against GenVec and members of GenVec s board of directors, referred to herein as the Individual Defendants. The *Parshall* action also named, and the *Hoose* action purports to name, Intrexon and Merger Sub as defendants. The complaints in the Stockholder Actions allege that GenVec and the Individual Defendants violated Section 14(a) of the Exchange Act, and Rule 14a-9 promulgated thereunder, by failing to disclose in the draft proxy statement included in the Registration Statement on Form S-4 filed by Intrexon on March 17, 2017 in connection with the Merger certain information regarding alleged potential conflicts of interest, events leading up to the signing of the merger agreement with Intrexon and Merger Sub, certain financial data regarding GenVec, and certain inputs regarding Roth s fairness opinion. The complaints in the Stockholder Actions also allege the Individual Defendants violated Section 20(a) of the Securities Exchange Act of 1934, as amended, as control persons who had the ability to prevent the Registration Statement from being false and misleading. The *Parshall* and *Hoose* actions also allege that Intrexon and Merger Sub violated Section 20(a) of the Exchange Act. The actions seek, among other things, an injunction preventing consummation of the merger with Merger Sub, an award of damages, and an award of costs and expenses, including attorneys fees.

On April 19, 2017, the plaintiffs in the *Parshall* and *Mussman* actions voluntarily dismissed their claims. On April 25, 2017, the plaintiff in the *Hoose* action filed a pre-motion letter advising the court of his intention to file a motion for preliminary injunctive relief, referred to herein as the April 25 Letter. On May 4, 2017, the *Hoose* and *Pillai* actions were consolidated for all purposes.

On May 2, 2017, the parties to the Stockholder Actions entered into a Memorandum of Understanding, referred to herein as the MOU, that calls for, among other things: (1) certain additional disclosures to be included in the proxy statement mailed to GenVec stockholders; (2) the withdrawal of the April 25 Letter in the *Hoose* action; and (3) dismissal of the *Hoose* and *Pillai* actions immediately following the vote by GenVec stockholders on the Merger. On May 4, 2017, in accordance with the MOU, the plaintiffs in the *Hoose* and *Pilla*i actions advised the Court of the MOU, filed stipulations seeking to stay those actions and withdrew the April 25 Letter. GenVec and the Individual Defendants believe the *Hoose* and *Pillai* actions are without merit and, if those actions are not voluntarily dismissed pursuant to the MOU, intend to vigorously defend them. Intrexon, GenVec and the Individual Defendants agreed to make the additional disclosures that are the subject of the MOU to avoid the expense and inconvenience of further litigation.

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GenVec management s discussion and analysis of

financial condition and results of operations

The following discussion and analysis should be read in conjunction with the GenVec selected historical financial and other data section of this proxy statement/prospectus and GenVec s financial statements and related notes included in this proxy statement/prospectus. All share and per share amounts relating to the common stock, stock options or warrants to purchase common stock, and the respective exercise prices of each such option or warrant, set forth in this section have been retroactively adjusted to reflect the reverse stock split.

In addition, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties, judgment and assumptions. GenVec s actual results and timing of selected events may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those described under Risks related to GenVec and its business and elsewhere in this proxy statement/prospectus.

OVERVIEW

GenVec is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. GenVec is a pioneer in the design, testing and manufacture of adenoviral-based product candidates that can deliver on the promise of gene-based medicine. GenVec s lead product candidate, CGF166, is licensed to Novartis and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to GenVec s internal and partnered pipeline, GenVec also focuses on opportunities to license its proprietary technology platform, including vectors and production cell lines, to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

A key component of GenVec s strategy is to develop and commercialize its product candidates through collaborations. GenVec is working with prominent companies and organizations such as Novartis, Merial, Washington University in St. Louis, and the U.S. government, as well as promising young companies such as TheraBiologics, to support a portfolio of programs that address the prevention and treatment of a number of significant human and animal health concerns. GenVec s combination of internal and partnered development programs addresses therapeutic areas such as hearing loss and balance disorders, oncology, bleeding disorders, as well as vaccines against infectious diseases including RSV, HSV, malaria, and in the area of animal health, vaccines against FMD.

GenVec s AdenoVerse gene delivery technology has the important advantage of localizing protein delivery in the body. This is accomplished by using GenVec s adenovector platform to locally deliver genes to cells, which then direct production of the desired protein. This approach reduces side effects typically associated with systemic delivery of proteins. For therapeutics, the goal is for the protein produced to have a meaningful effect in treating the cause, manifestation, or progression of the disease. For vaccines, the goal is to induce an immune response against a target protein or antigen. This is accomplished by using an adenovector to deliver a gene that causes production of an antigen, which then stimulates the desired immune reaction by the body.

GenVec s research and development activities yield product candidates that utilize its technology platform and represent potential commercial opportunities. For example, preclinical research in hearing loss and balance disorders indicates that the delivery of the atonal gene using GenVec s adenovector technology may have the potential to restore hearing and balance function. GenVec is currently working with Novartis on the development of novel treatments for hearing loss and balance disorders that emerged from these research and development efforts. There are currently no effective therapeutic treatments available for patients who have lost all balance function, and hearing loss remains a

major unmet medical problem.

GenVec has multiple vaccine candidates that leverage its core adenovector technology, including its preclinical vaccine candidates for the prevention or treatment of RSV and HSV. GenVec also has a program to develop a vaccine for malaria, a program in which it is currently working in collaboration with LMIV.

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GenVec s business strategy is focused on entering into collaborative arrangements with third parties to complete the development and commercialization of its product candidates. In the event that third parties take over the development for one or more of GenVec s product candidates, the estimated completion date would largely be under the control of that third party rather than GenVec. GenVec cannot forecast with any degree of certainty which proprietary products or indications, if any, will be subject to future collaborative arrangements, in whole or in part, or how such arrangements would affect GenVec s development plan or capital requirements. GenVec s programs may also benefit from subsidies, grants, or government or agency-sponsored studies that could reduce GenVec s development costs.

An element of GenVec s business strategy is to pursue, as resources permit, the research and development of a range of product candidates for a variety of indications. This is intended to allow GenVec to diversify the risks associated with its research and development expenditures. To the extent GenVec is unable to maintain a broad range of product candidates, its dependence on the success of one or a few product candidates would increase.

On February 24, 2016, GenVec received notification from NASDAQ that the minimum bid price of GenVec s common stock had remained below $1.00 per share for 30 consecutive business days, and GenVec therefore was not in compliance with the minimum bid price requirement for continued listing set forth in Marketplace Rule 5550(a)(2). The notification letter stated that GenVec would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with the minimum bid price requirement. On August 23, 2016, GenVec received notification from NASDAQ that GenVec had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance, the closing bid price of GenVec s common stock had to meet or exceed $1.00 per share for at least ten consecutive business days. On October 20, 2016, GenVec s shareholders approved an amendment to GenVec s Amended and Restated Certificate of Incorporation to effect a reverse stock split of GenVec s common stock at a ratio within the range of one-for-three to one-for-ten, as determined by GenVec s board of directors. On December 1, 2016, GenVec effected the reverse stock split at a ratio of one-for-ten, whereby each 10 shares of common stock were combined into one share of common stock. The reverse stock split was intended to enable GenVec to regain compliance with the bid price requirement. On December 15, 2016, GenVec received a notice from NASDAQ stating that GenVec had regained compliance.

On January 24, 2017, GenVec, Intrexon and Merger Sub entered into the merger agreement, pursuant to which, and on the terms and subject to the conditions set forth in the merger agreement, Merger Sub will merge with and into GenVec. GenVec will survive the merger as a wholly owned subsidiary of Intrexon. For more information regarding the merger and the merger agreement, see the sections entitled The merger and The merger agreement.

GenVec s research and development expenses were $0.8 million and $0.7 million for the three months ended March 31, 2017 and 2016, respectively, and $2.5 million and $2.6 million for each of the years ended December 31, 2016 and 2015, respectively. For the years ended December 31, 2016 and 2015, these expenses were divided between GenVec s research and development platforms in the following manner:

	Years ended December 31,	
	2016	2015
	(in millions)	
Therapeutic	$ 1.7	$ 0.5
Vaccines	0.5	1.0
Hearing loss and balance disorders	0.3	1.0

Other programs		0.1
Total	$ 2.5	$ 2.6

Therapeutic. GenVec s therapeutic programs have been funded in part by GenVec s collaborations with both corporate and governmental entities. Since commencement of these development programs, GenVec has incurred

approximately $28 million in research and development costs, including an allocation of corporate general and administrative expenses.

Hearing. Through a collaboration with Novartis, GenVec s hearing loss and balance disorders program is focused on the restoration of hearing and balance function through the regeneration of critical cells of the inner ear. Since commencement of this development program, GenVec has incurred approximately $25 million in research and development costs, including an allocation of corporate general and administrative expenses, most of which have been funded under the NVS License Agreement.

Vaccines. GenVec s vaccine programs have been funded in part by GenVec s collaborations with both corporate and governmental entities. GenVec has worked on developing vaccine candidates against RSV, HSV, and other infectious diseases, as well as an animal health vaccine for FMD, and continues to work on vaccine candidates for malaria. Since the commencement of these vaccine development programs, GenVec has incurred approximately $122 million in research and development costs, including an allocation of corporate general and administrative expenses, most of which have been funded under GenVec s agreements with its various collaborators. GenVec has a collaboration with Merial to develop and commercialize vaccines for the prevention of a major animal health problem, foot-and-mouth disease. Development efforts for this program were supported by the U.S. Department of Homeland Security, referred to herein as DHS, and in collaboration with the USDA. GenVec also has a research collaboration with LMIV that will utilize GenVec s proprietary gorilla adenovirus vectors to deliver a number of novel antigens discovered at LMIV in order to create and test a variety of malaria vaccine candidates.

To date, none of GenVec s proprietary or collaborative programs has resulted in a commercial product; therefore, GenVec has not received any revenues or royalties from the sale of products. GenVec has funded its operations primarily through public and private placements of equity securities, payments received under collaborative programs with public and private entities, and debt financings.

GenVec s revenue is primarily derived from its collaboration agreements with corporate partners, institutions, and government entities under which GenVec may receive grants, milestone payments based on clinical progress, regulatory progress or net sales achievements, royalties, manufacturing revenue, or payment for GenVec s development activities on behalf of third parties. GenVec is particularly dependent on the NVS License Agreement. The amount of GenVec s revenue derived from collaboration agreements in any given period will depend on a number of unpredictable factors, including, among other factors, whether and when GenVec or its collaboration partner achieve clinical, regulatory and sales milestones.

GenVec has incurred operating losses each year since inception and, as of March 31, 2017, had an accumulated deficit of approximately $294.9 million. GenVec s losses have resulted principally from costs incurred in research and development and from general and administrative activities. Research and development expenses consist primarily of salaries and related personnel costs, sponsored research costs, patent costs, technology access fees, clinical trial costs, and other expenses related to GenVec s product development and research programs. General and administrative expenses consist primarily of compensation and benefit expenses for executive, finance and other administrative personnel, facility costs, professional fees, business development costs, insurance premiums, and other general corporate expenditures.

Due to the inherent uncertainties in research and development and the nature of GenVec s business, GenVec is unable to estimate the duration and completion costs of its research and development projects or when, if ever, and to what extent GenVec will receive cash inflows from the commercialization and sale of a product. GenVec s inability to complete its research and development projects in a timely manner or its failure to enter into collaborative agreements, when appropriate, could significantly increase GenVec s capital requirements and could adversely impact its liquidity.

These uncertainties could force GenVec to seek additional, external sources of financing from time to time in order to continue with GenVec s business strategy. GenVec s inability to raise additional capital, or to do so on terms reasonably acceptable to GenVec, would jeopardize the future success of

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GenVec s business. However, GenVec believes its current cash, cash equivalents and investments and committed and expected revenues from its strategic collaborations are expected to be sufficient to continue its current research, development and collaborative activities into early 2018.

CRITICAL ACCOUNTING POLICIES AND USE OF ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires GenVec s management to make estimates and assumptions that affect the amounts reported in GenVec s financial statements and the accompanying notes. On an ongoing basis, GenVec evaluates its estimates using authoritative pronouncements, historical experience, and other assumptions as the basis for making estimates. Actual results could differ from those estimates. Significant accounting policies are more fully described in Note 2 Summary of Significant Accounting Policies in the notes to GenVec s audited financial statements included in this proxy statement/prospectus.

GenVec has discussed the development, selection, and disclosure of critical accounting policies and estimates with the audit committee of its board of directors. While GenVec bases estimates and assumptions on its knowledge of current events and actions GenVec may undertake in the future, actual results may ultimately differ from these estimates and assumptions.

GenVec believes the following accounting policies to be critical because they require significant estimates or judgment on the part of management.

Revenue Recognition

Revenue is recognized when all four of the following criteria are met (i) a contract is executed, (ii) the contract price is fixed and determinable, (iii) delivery of the services or products has occurred, and (iv) collectability of the contract amounts is considered probable.

GenVec s collaborative research and development agreements provide for upfront license fees, research payments, and/or substantive milestone payments. Upfront non-refundable fees associated with license and development agreements where GenVec has continuing involvement in the agreement are recorded as deferred revenue and recognized over the estimated service period. If the estimated service period is subsequently modified, the period over which the upfront fee is recognized is modified accordingly on a prospective basis. Upfront non-refundable license and development fees for which no future performance obligations exist are recognized when collection is assured. Substantive milestone payments are considered performance payments and are recognized upon achievement of the milestone if all of the following criteria are met: (i) achievement of the milestone involves a degree of risk and was not reasonably assured at the inception of the arrangement; (ii) substantive effort is involved in achieving the milestone; and (iii) the amount of the milestone payment is reasonable in relation to all of the deliverables and payment terms within the arrangement. Determination of whether a milestone meets the aforementioned conditions involves the judgment of management.

Research and development revenue from cost-reimbursement and cost-plus fixed-fee agreements is recognized as earned based on the performance requirements of the contract. Revisions in revenues, cost, and billing factors, such as indirect rate estimates, are accounted for in the period of change. Reimbursable costs under such contracts are subject to audit and retroactive adjustment. Contract revenues and accounts receivable reported in the financial statements are recorded at the amount expected to be received. Contract revenues are adjusted to actual upon final audit and retroactive adjustment. Estimated contractual allowances are provided based on management s evaluation of current contract terms and past experience with disallowed costs and reimbursement levels. Payments received in advance of

work performed are recorded as deferred revenue.

Research and development revenue from fixed-price best efforts arrangements is recognized as earned based on the performance requirements of the contract. Revenue under these arrangements is recognized when delivery to

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and acceptance by the customer has been received. During the period of performance, recoverable contract costs are accumulated on the balance sheet in other current assets, but no revenue or profit is recorded prior to customer acceptance of the contractually stated deliverables. Recoverable contract costs that are accumulated on the balance sheet include all direct costs associated with the arrangement and an allocation of indirect costs. Payments received in advance of customer acceptance are recorded as deferred revenue. Once customer acceptance has been received, revenue and recoverable contract costs are recognized. Over the course of the arrangement, GenVec routinely evaluates whether revenue and profitability should be recognized in the current period. Any known or probable losses on projects are charged to operations in the period in which such losses are determined.

Stock Based Compensation

GenVec accounts for stock-based compensation based on the estimated grant date fair value of the stock using the Black-Scholes option-pricing model. The estimated grant date fair value is recognized in earnings over the requisite service period.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion of recently issued accounting pronouncements, refer to the section entitled Recent Accounting Pronouncements within Note 1, General in the notes to GenVec s unaudited financial statements included in this proxy statement/prospectus, and to the section entitled Recent Accounting Pronouncements within Note 2, Summary of Significant Accounting Policies in the notes to GenVec s audited financial statements included in this proxy statement/prospectus.

RESULTS OF OPERATIONS

Three Months Ended March 31, 2017

GenVec s net loss was $4.3 million or $1.88 per share on revenues of $0.1 million for the three months ended March 31, 2017. This compares to a net loss of $1.9 million or $1.08 per share on revenues of $0.3 million in the same period in the prior year. Included in GenVec s net loss for the first three months of 2017 were stock-based compensation expense and the change in the fair value of warrant liabilities of $0.1 million and $1.0 million as compared to $0.2 million and $0 for the same period in the prior year. GenVec ended the first quarter of 2017 with $4.3 million in cash, cash equivalents and liquid investments.

Revenue

Revenues for the three-month period ended March 31, 2017 were $0.1 million, which represents a decrease of 60% as compared to revenues of $0.3 million in the comparable prior year period.

Revenues for the three-month period ended March 31, 2017 were primarily derived from GenVec s collaboration with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Revenues in 2016 were also derived from GenVec s funded research and development programs with the National Institutes of Allergy and Infectious Diseases of the National Institutes of Health, and the U.S. Naval Medical Research Center, each of which use GenVec s proprietary adenovector technology for the development of vaccines against malaria.

In January 2010, GenVec entered into the NVS License Agreement with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Under the terms of the agreement, GenVec licensed the world-wide rights to GenVec s preclinical hearing loss and balance disorders program to Novartis.

In addition, the NVS License Agreement allows GenVec to receive funding from Novartis for a research program focused on developing additional adenovectors for hearing loss. The NVS License Agreement accounted for $0.1 million of revenue for each of the three-month periods ended March 31, 2017 and 2016.

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For more information on the NVS License Agreement, its terms and the amounts paid or recognized thereunder to date, see Note 7, Collaborative Agreements, in the notes to GenVec s unaudited financial statements included in this proxy statement/prospectus.

In August 2010, GenVec signed the NVS Supply Agreement for the supply of services relating to development materials with Novartis related to GenVec s collaboration in hearing loss and balance disorders. Under the NVS Supply Agreement, valued at $14.9 million, GenVec agreed to manufacture clinical trial material for up to two lead product candidates. This agreement accounted for $30,000 in revenue for each of the three-month periods ended March 31, 2017 and 2016, respectively.

Revenues recognized under GenVec s various funded research projects for the three-month periods ended March 31, 2017 and 2016 are as follows:

	Three Months Ended March 31,	
	2017	2016
	(in thousands)	
Hearing loss and balance disorders	$ 89	$ 89
Malaria		201
Other	25	
Total	$ 114	$ 290

The decrease in revenue for the three-month period ended March 31, 2017 is primarily attributable to the completion of GenVec s malaria program with the NIH in March 2016. GenVec recognized $0.2 million in revenue in 2016 with no corresponding revenue in 2017.

Expenses

Operating expenses were $3.4 million for the three-month period ended March 31, 2017, which represents an increase of 59% as compared to $2.1 million in the comparable prior year period.

General and administrative expenses for the three-month period ended March 31, 2017 increased 88%, with expense of approximately $2.7 million in 2017 as compared to $1.4 million in 2016. The increase is primarily attributable to higher professional services costs generally related to GenVec s Merger with Intrexon.

Research and development expenses for the three-month period ended March 31, 2017 increased 4%, with expense of approximately $0.8 million in 2017 as compared to $0.7 million in 2016. The increase is primarily attributable to higher professional, material, and facility costs.

Other Income/(Expense)

Other income/(expense), net for the three-month period ended March 31, 2017 was a net expense of $1.0 million as compared to a net expense of $1,000 for the same period in 2016. The increase was primarily attributable to a $1.0 million change in the fair value of the warrant liabilities in connection with GenVec s May 10, 2016 registered offering.

Years Ended December 31, 2016 and 2015

Revenue

Revenue decreased 42% to $0.5 million in 2016 from $0.9 million in 2015.

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Revenues for the twelve-month period ended December 31, 2016 were primarily derived from the collaboration with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Revenues were also derived from GenVec s funded research and development programs with the National Institutes of Allergy and Infectious Diseases of the National Institutes of Health, the U.S. Naval Medical Research Center, DHS, and Merial, all of which use GenVec s proprietary adenovector technology for the development of vaccines against malaria or vaccine candidates against FMD for livestock.

The NVS License Agreement accounted for $0.1 million and $0.2 million of revenue for 2016 and 2015, respectively.

The NVS Supply Agreement accounted for $0.1 million and $0.2 million in revenue in 2016 and 2015, respectively.

The decrease in revenue in 2016 is primarily due to a reduction in requested services performed in connection with GenVec s hearing loss and balance disorders program in 2016 as compared to the prior year. Also contributing to the reduction was lower revenue earned under GenVec s animal health program. GenVec s work under the contract with DHS related to GenVec s animal health program was completed in February 2015; as a result GenVec experienced reduced revenues of $0.2 million. This was partially offset by an amended license agreement with Merial for $0.1 million. Also partially offsetting the decrease was an increase in revenue associated with GenVec s malaria program of $0.1 million.

Operating Expenses

General and administrative. General and administrative expenses increased 7% to $5.2 million in 2016 from $4.9 million in 2015. The increase in general and administrative expenses in 2016 is primarily attributable to higher personnel costs related to the expansion of GenVec s workforce. The increased costs were partially offset by a decrease in professional service costs in 2016 as compared to 2015. General and administrative expenses include a decrease of approximately $34,000 of stock-based compensation expense in 2016 as compared to the prior year.

Research and development. Research and development expenses decreased 2% to $2.5 million in 2016 from $2.6 million in 2015. In 2016, GenVec experienced a slight decrease in professional costs as compared to the prior year. Stock-based compensation expense included in research and development personnel costs decreased approximately by $108,000 in 2016 as compared to the prior year.

Other Income (Loss)

Other income, net in 2016 was $1.4 million as compared to $22,000 in 2015. The increases in 2016 were due to a $1.7 million change in the fair value of the warrant liabilities in connection with GenVec s May 10, 2016 registered offering, partially offset by financing expenses of $250,000 related to the offering.

LIQUIDITY AND CAPITAL RESOURCES

GenVec has experienced significant losses since its inception. As of March 31, 2017, GenVec had an accumulated deficit of $294.9 million. The process of developing and commercializing GenVec s product candidates requires significant research and development work and clinical trial work, as well as significant manufacturing and process development efforts. These activities, together with GenVec s general and administrative expenses, are expected to continue to result in significant operating losses for the foreseeable future.

Three Months Ended March 31, 2017

As of March 31, 2017, cash, cash equivalents and liquid investments totaled $4.3 million as compared to $7.2 million on December 31, 2016.

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For the three months ended March 31, 2017, GenVec used $2.8 million of cash for operating activities. This consisted of a net loss for the period of $4.3 million, which included approximately $23,000 of non-cash depreciation and amortization, $0.1 million of non-cash stock-based compensation, $1.0 million for the change in the fair value of warrants issued in connection with GenVec s May 10, 2016 registered offering, $0.3 million for the net change in current assets and liabilities and $2,000 for the net change in non-current assets and liabilities. Net cash was used primarily for GenVec s internally funded research and development programs and general and administrative activities.

For the three months ended March 31, 2016, GenVec used $1.8 million of cash for operating activities. This consisted of a net loss for the period of $1.9 million, which included approximately $26,000 of non-cash depreciation and amortization, $0.2 million of non-cash stock-based compensation, $0.1 million used in the net change in current assets and liabilities and $3,000 used in the net change in non-current liabilities. Net cash was used primarily for GenVec s internally funded research and development programs and general and administrative activities.

Net cash provided by investing activities during the three months ended March 31, 2017 was $1.7 million. This consisted primarily of proceeds from the sale and maturity of investments.

Net cash provided by investing activities during the three months ended March 31, 2016 was $1.1 million. This consisted primarily of proceeds from the sale and maturity of investments.

There was no cash provided by financing activities during the three months ended March 31, 2017 or 2016.

Years Ended December 31, 2016 and 2015

As of December 31, 2016, GenVec s cash, cash equivalents, and investments totaled $7.2 million, as compared to $8.7 million on December 31, 2015.

For 2016, GenVec used net cash of $6.0 million for operating activities. This consisted of a net loss for the period of $5.8 million, which included approximately $0.1 million of non-cash depreciation and amortization, $0.8 million of non-cash stock-based compensation expenses, $0.3 million of non-cash adjustments for financing expense associated with GenVec s May 2016 financing, $1.7 million for the change in the fair value of warrant liabilities issued in connection with GenVec s May 2016 financing, and $0.3 million provided by the net change in current assets and liabilities. Net cash was used primarily for GenVec s internally funded research and development programs and general and administrative activities.

Net cash used in investing activities during 2016 was $1.9 million, which included $3.5 million for the purchase of marketable securities, partially offset by $1.6 million of proceeds from the sale and maturity of investment securities. GenVec also used $19,000 for the purchase of property and equipment.

Net cash provided by financing activities during 2016 was $4.5 million, which represents the proceeds, net of issuance costs, from GenVec s concurrent offerings of common stock and warrants, described below, completed on May 10, 2016.

As of December 31, 2015, cash, cash equivalents, and investments totaled $8.7 million, as compared to $14.7 million on December 31, 2014.

For 2015, GenVec used net cash of $5.9 million for operating activities. This consisted of a net loss for the period of $6.5 million, which included approximately $0.1 million of non-cash depreciation and amortization, $0.9 million of non-cash stock-based compensation expenses, $0.5 million used for the net change in current assets and liabilities, and

$0.1 million provided by the net change in non-current assets. Net cash was used primarily for GenVec s internally funded research and development programs and general and administrative activities.

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Net cash provided by investing activities during 2015 was $5.0 million, which included $5.1 million for the net proceeds from the sale of marketable securities and $0.1 million for the purchase of property and equipment.

Net cash used in financing activities during 2015 was $24,000, which represents the costs of maintaining GenVec s equity distribution agreement with Roth, described under *Capital Resources and Sources of Liquidity* below, in 2015.

NASDAQ Notifications and Reverse Stock Split

On February 24, 2016, GenVec received notification from NASDAQ that the minimum bid price of GenVec s common stock had remained below $1.00 per share for 30 consecutive business days, and GenVec therefore was not in compliance with the minimum bid price requirement for continued listing set forth in Marketplace Rule 5550(a)(2). The notification letter stated that GenVec would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with the minimum bid price requirement. On August 23, 2016, GenVec received notification from NASDAQ that it had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance, the closing bid price of GenVec s common stock had to meet or exceed $1.00 per share for at least ten consecutive business days. On October 20, 2016, GenVec s shareholders approved an amendment to GenVec s Amended and Restated Certificate of Incorporation to effect a reverse stock split of GenVec s common stock at a ratio within the range of one-for-three to one-for-ten, as determined by GenVec s board of directors. On December 1, 2016, GenVec effected the reverse stock split at a ratio of one-for-ten, whereby each 10 shares of common stock were combined into one share of common stock. The reverse stock split was intended to enable GenVec to regain compliance with the Bid Price Requirement. On December 15, 2016, GenVec received a notice from NASDAQ stating that GenVec had regained compliance.

Capital Resources and Sources of Liquidity

Since GenVec s initial public offering, GenVec has raised capital by offering shares of its common stock and warrants to purchase shares of its common stock in a variety of offerings.

Effective September 7, 2011, GenVec entered into the rights agreement with AST, as rights agent. The rights agreement was not adopted in response to any specific effort to acquire control of GenVec. In connection with the adoption of the rights agreement, GenVec s board of directors declared a dividend of one preferred stock purchase right, which we refer to as a Right, for each outstanding share of common stock to shareholders of record as of the close of business on September 7, 2011. Initially, the Rights will be represented by GenVec s common stock certificates or book-entry notations, will not be traded separately from the common stock and will not be exercisable. As a result of the reverse stock split, there are now ten Rights associated with each outstanding share of common stock. In the event that any person acquires beneficial ownership of 20% or more of the outstanding shares of GenVec s common stock, or upon the occurrence of certain other events, each holder of a Right, other than the acquirer, would be entitled to receive, upon payment of the purchase price, which is initially set at $32 per Right, a number of shares of GenVec common stock having a value equal to two times such purchase price. GenVec s board of directors is entitled to redeem the Rights at $0.001 per Right at any time before a person or group has acquired 20% or more of GenVec s common stock. The Rights will expire on September 7, 2021, subject to GenVec s right to extend such date, unless earlier redeemed or exchanged by GenVec or terminated. The Rights will at no time have any voting rights. GenVec has authorized 30,000 shares of series B junior participating preferred stock in connection with the adoption of the rights agreement. There was no series B junior participating preferred stock issued or outstanding as of March 31, 2017.

In connection with its execution of the merger agreement with Intrexon and Merger Sub, GenVec amended the rights agreement to provide that none of Intrexon, Merger Sub or any of their respective associates or affiliates shall become

an Acquiring Person (as defined in the rights agreement) under the rights agreement and to otherwise exempt the merger from triggering provisions or rights under the rights agreement.

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On January 23, 2014, GenVec filed a $75.0 million shelf registration statement on Form S-3, referred to herein as the 2014 shelf registration statement, with the SEC, which was declared effective February 11, 2014 and allowed GenVec to obtain financing through the issuance of any combination of common stock, preferred stock or warrants. Due to its expiration, the 2014 shelf registration statement is no longer available for use for primary offerings by GenVec.

On February 11, 2014, GenVec entered into an equity distribution agreement, referred to herein as the equity distribution agreement, with Roth, pursuant to which GenVec could sell from time to time up to $10.0 million of shares of its common stock, par value $0.001 per share, through Roth. Sales of shares pursuant to the equity distribution agreement, if any, could be made by any method permitted by law deemed to be an at the market offering as defined in Rule 415 of the Securities Act of 1933, as amended, including without limitation directly on the NASDAQ Capital Market, or any other existing trading market for the shares or through a market maker, or, if agreed by GenVec and Roth, by any other method permitted by law, including but not limited to in negotiated transactions. Sales under the equity distribution agreement have been made and will be made pursuant to the 2014 shelf registration statement. As of March 31, 2014, GenVec had sold 72,168 shares pursuant to the equity distribution agreement for gross proceeds of approximately $2.6 million. GenVec has not sold any shares under the equity distribution agreement since that date, and GenVec would not be able to do so until a new registration statement is filed pursuant to which sales under the equity distribution agreement may be made.

On March 18, 2014, GenVec sold 287,000 shares of its common stock, par value $0.001, in a registered direct offering pursuant to the 2014 shelf registration statement, at a price of $31.50 per share, resulting in gross proceeds of approximately $9.0 million.

On May 10, 2016, in a registered offering pursuant to the 2014 shelf registration statement, GenVec sold 547,195 shares of its common stock, referred to herein as the May 2016 Shares, at a purchase price of $9.1375 per share. In a private placement concurrent with the sale of the May 2016 Shares, GenVec sold to the investors who purchased the May 2016 Shares warrants to purchase 410,396.8 shares of GenVec s common stock, referred to herein as the May 2016 Warrants. The May 2016 Shares and the May 2016 Warrants were sold pursuant to a securities purchase agreement for aggregate gross proceeds of $5.0 million. Subject to certain ownership limitations, the May 2016 Warrants became exercisable on November 10, 2016 at an exercise price equal to $8.30 per share of common stock, subject to adjustments as provided under the terms of the May 2016 Warrants. The May 2016 Warrants are exercisable until November 10, 2022.

In connection with the offering of the May 2016 Shares and May 2016 Warrants, GenVec issued to the placement agent and its designees unregistered warrants to purchase an aggregate of 38,303.7 shares of GenVec s common stock. Such warrants have substantially the same terms as the May 2016 Warrants, except that they will expire on May 4, 2021 and have an exercise price equal to $11.422 per share of common stock.

The net proceeds from the sale of the May 2016 Shares and the May 2016 Warrants were $4.5 million after deducting certain fees due to the placement agent and GenVec s estimated transaction expenses.

As of March 31, 2017, pursuant to the equity distribution agreement, the March 18, 2014 registered direct offering, and the May 10, 2016 registered offering, GenVec had sold 906,363 shares of its common stock since the 2014 shelf registration statement became effective on February 11, 2014 for gross proceeds of $16.6 million. These sales resulted in proceeds, net of issuance costs, of approximately $15.1 million. The 2014 shelf registration statement expired on February 11, 2017.

On January 24, 2017, GenVec, Intrexon and Merger Sub entered into the merger agreement, pursuant to which, and on the terms and subject to the conditions set forth therein, Merger Sub will merge with and into GenVec. GenVec will

survive the merger as a wholly owned subsidiary of Intrexon. For more information on the merger and the merger agreement, see the sections entitled The merger and The merger agreement. For more information on the effects of the merger, see the section entitled The merger Effects of the merger.

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GenVec s estimated future capital requirements are uncertain and could change materially as a result of many factors, including the progress of GenVec s research, development, clinical, manufacturing, and commercialization activities. GenVec currently estimates it will use approximately $4.3 million of cash during the four quarters ending March 31, 2018. GenVec s estimate includes approximately $0.4 million in contractual obligations.

GenVec s financial statements as of December 31, 2016 were prepared under the assumption that GenVec will continue as a going concern for the next twelve months. The report of GenVec s independent registered public accounting firm for the year ended December 31, 2016 included an explanatory paragraph that expressed substantial doubt about GenVec s ability to continue as a going concern. If the merger with Intrexon is not consummated, GenVec s ability to continue as a going concern may depend on its ability to raise additional capital, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. If GenVec management is unsuccessful in these efforts, GenVec s current capital is not expected to be sufficient to fund GenVec s operations for the next twelve months. GenVec s financial statements as of December 31, 2016 and its unaudited condensed financial statements as of March 31, 2017 do not include any adjustments that might result from the outcome of this uncertainty.

OFF-BALANCE SHEET OBLIGATIONS

GenVec had no off-balance sheet obligations other than in connection with its operating leases, as disclosed in Note 7, Commitments and Contingencies, in the notes to GenVec s audited financial statements included in this proxy statement/prospectus.

GenVec changes in and disagreements with accountants on accounting and financial disclosures

Not applicable.

GenVec s quantitative and qualitative disclosures about market risk

Not applicable.

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GenVec security ownership of certain beneficial owners and management

The following table sets forth certain information as of May 5, 2017 (unless otherwise specified), regarding the beneficial ownership of GenVec s common stock by (i) each named executive officer of GenVec, (ii) each director of GenVec and (iii) all current directors and executive officers as a group. As of May 5, 2017, there were three persons known to GenVec to be the beneficial owners of more than 5% of the outstanding shares of common stock.

Beneficial ownership is determined in accordance with the rules of the SEC for computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person. Shares of common stock subject to options currently exercisable or exercisable within 60 days after May 5, 2017 are considered outstanding for the purpose of computing the percentage ownership of the person holding such options, but are not considered outstanding when computing the percentage ownership of each other person. Except as indicated in the footnotes to this table, each shareholder named in the table below has sole voting and investment power for the shares shown as beneficially owned by them. Percentage of beneficial ownership is based on 2,273,632 shares of common stock outstanding on May 5, 2017. Unless otherwise specified, the address for each director or executive officer is care of GenVec at its principal office.

Name of Beneficial Owner[1]	Total Number of Shares Beneficially Owned	% of Class Owned
Beneficial Owner of More than 5% of the Outstanding Common Stock:		
MMCAP International Inc. SPC[2]	257,272	11.3%
Aristides Capital, LLC[3]	169,519	7.5%
Sabby Healthcare Master Fund, LTD[4]	120,544	5.3%
Directors and Named Executive Officers:		
Wayne T. Hockmeyer, Ph.D.	14,550	*
William N. Kelley, Ph.D.	12,800	*
Stefan D. Loren, Ph.D.	6,500	*
Quinterol J. Mallette, M.D.	4,000	*
Michael Richman	2,500	*
Marc R. Schneebaum	12,800	*
Douglas J. Swirsky	78,343	3.4%
Douglas E. Brough, Ph.D.	48,630	2.1%
Bryan T. Butman, Ph.D.	38,305	1.7%
All directors and executive officers as a group (10 persons)	229,166	9.4%

(1) Includes shares of Common Stock issuable upon exercise of options that are exercisable within 60 days of May 5, 2017 in the following amounts: Dr. Hockmeyer, 6,750 shares; Dr. Kelley, 5,250 shares; Mr. Loren, 6,000 shares; Dr. Mallette, 4,000 shares; Mr. Richman, 2,500 shares; Mr. Schneebaum, 5,250 shares; Mr. Swirsky, 53,093 shares; Dr. Brough, 34,962 shares; Dr. Butman, 30,167 shares; and directors and executive officers as a group (10 people), 156,729 shares.

(2) Based solely on the Schedule 13G/A filed on March 14, 2017 by MMCAP International Inc. SPC (MMCAP) and MM Asset Management Inc. (together with MMCAP, the MMCAP Reporting Persons) and the Form 4 filed on March 14, 2017 by MMCAP. The MMCAP Reporting Persons have shared voting and dispositive power with respect to all of these shares.

The address for MMCAP International Inc. SPC is P.O. Box 259 George Town Financial Centre Grand Cayman, Cayman Islands KY1-1208. The address for MM Asset Management, Inc. is 66 Wellington Street West, Suite 2707 Toronto, Ontario M5K 1H6 Canada.

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(3) Based solely on the Schedule 13G filed on January 31, 2017 by Christopher M. Brown, Aristides Capital, LLC (the General Partner), Aristides Fund QP, LP (the 3c7 Fund) and Aristides Fund LP (the 3c1 Fund , and together with 3c7 Fund, the Funds) (collectively, the Reporting Persons) and further information provided by the Reporting Persons. Mr. Brown and the General Partner have sole voting and dispositive power with respect to all of these shares, the 3c7 Fund has sole voting and dispositive power with respect to 34,191 shares, and the 3c1 Fund has sole voting and dispositive power with respect to 135,328 shares.

The principal business office of the Reporting Persons is c/o Aristides Capital LLC, 25 S. Huron St. Suite 21, Toledo Ohio 43604.

(4) Based solely on the Schedule 13G/A filed on January 10, 2017 by Sabby Healthcare Master Fund, Ltd. (SHMF), Sabby Volatility Warrant Master Fund, Ltd (SVWMF), Sabby Management, LLC and Hal Mintz. SMHF has shared voting and dispositive power with respect to 72,719 shares. SVWMF has shared voting and dispositive power with respect to 47,825 shares. Sabby Management, LLC and Mr. Mintz each have shared voting and dispositive power with respect to 120,544 shares.

The address for SHMF and SVWMF is 89 Nexus Way, Camana Bay Grand Cayman KY1-9007 Cayman Islands and the address for Sabby Management, LLC and Mr. Mintz is 10 Mountainview Road, Suite 205 Upper Saddle River, New Jersey 07458.

GenVec equity compensation plan information

The following table provides information as of December 31, 2016 with respect to shares of common stock that may be issued pursuant to outstanding equity awards under GenVec s existing equity incentive plans, as well as information with respect to shares of common stock that remain available for issuance as of that date under those plans. All share amounts relating to GenVec stock options, warrants and rights and to securities remaining available for future issuance under GenVec equity compensation plans, and the exercise price or weighted-average exercise price of outstanding options, warrants and rights, set forth in the table below and in the related notes have been retroactively adjusted to reflect the reverse stock split.

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders[1]	280,860	$ 31.11	99,379
Equity compensation plans not approved by security holders[2]	8,333	$ 25.40	0
Total	289,193	$ 30.95	99,379

(1) This row represents awards granted under the 2002 Plan and the 2015 Plan and shares remaining available for issuance under the 2015 Plan.

(2) In May 2012, GenVec granted a CEO Inducement Award to purchase shares of GenVec common stock to GenVec s then President and Chief Executive Officer. The CEO Inducement Award allowed for the purchase of up to 25,000 shares of GenVec common stock at an exercise price per share equal to $25.40. When GenVec s former President and Chief Executive Officer departed GenVec, she forfeited her unvested shares as of September 3, 2013, but the exercise period was extended to the end of the full term of the 10-year option to May 23, 2022 for those options already vested. Pursuant to the CEO Inducement Award, the options are subject to the terms of any agreement of merger, liquidation, or reorganization in the event GenVec is subject to such corporate activity.

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Advisory vote on merger-related compensation

(Proposal 2)

As required by Section 14A of the Exchange Act and the SEC s rules thereunder, GenVec is asking its shareholders to cast a non-binding, advisory vote on the compensation that will or may become payable to GenVec s named executive officers in connection with the merger, as disclosed in the table captioned Golden Parachute Compensation in the section of this proxy statement/prospectus entitled The merger Quantification of potential payments to GenVec executive officers in connection with the merger, including in the footnotes to such table and the associated narrative discussion.

In accordance with these requirements, GenVec is asking its shareholders to vote on the adoption of the following resolution:

RESOLVED, that the compensation that will or may become payable to the named executive officers of GenVec, Inc. in connection with the merger, as disclosed in the table captioned Golden Parachute Compensation in the section of the proxy statement/prospectus entitled The merger Quantification of potential payments to GenVec executive officers in connection with the merger, including the footnotes to such table and the associated narrative discussion, and the agreements or understandings pursuant to which such compensation will or may become payable, are hereby APPROVED.

The vote on the compensation payable in connection with the merger is a vote separate and apart from the votes on the other proposals described in this proxy statement/prospectus. You may vote to approve this proposal and vote not to approve the merger proposal, or you may vote against this proposal and vote to approve the merger proposal. Because the vote on this proposal is advisory in nature only, it will not be binding on GenVec. Accordingly, because GenVec is contractually obligated to pay the compensation covered by this proposal, such compensation will become payable, subject only to the conditions applicable thereto, if the merger agreement is adopted and the merger is completed, regardless of the outcome of the advisory vote on this proposal.

The GenVec board of directors unanimously recommends that you vote FOR the approval of this proposal.

Approval of this proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or represented by proxy at the special meeting and entitled to vote on this proposal. If you fail to vote, or fail to instruct your broker, bank or other nominee to vote, it will have no effect on this proposal, assuming a quorum is present. If you mark your proxy or voting instructions to abstain, it will have the same effect as voting against this proposal.

Adjournment of the meeting

(Proposal 3)

The special meeting may be adjourned to another time or place, if necessary or appropriate, to permit further solicitation of proxies to obtain additional proxies in favor of the merger proposal.

If the number of shares of GenVec common stock present in person or represented by proxy at the special meeting voting in favor of the merger proposal is insufficient to approve the merger proposal at the time of the special meeting, then GenVec may move to adjourn the special meeting in order to enable its board of directors to solicit additional proxies in respect of the merger proposal. In that event, GenVec shareholders will be asked to vote only upon the

adjournment proposal, and not on any other proposal, including the merger proposal.

In this proposal, you are being asked to authorize the holder of any proxy solicited by GenVec s board of directors to vote in favor of any adjournment of the special meeting, if necessary or appropriate, to solicit additional proxies in favor of the merger proposal. If GenVec shareholders approve this adjournment proposal, GenVec could adjourn the special meeting and any adjourned session of the special meeting and use the

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additional time to solicit additional proxies, including the solicitation of proxies from GenVec shareholders that have previously returned properly executed proxy cards or voted by telephone. Among other things, approval of the adjournment proposal could mean that, even if GenVec has received proxies representing a sufficient number of votes against the approval of the merger proposal such that the proposal would be defeated, GenVec could adjourn the special meeting without a vote on the merger proposal and seek to obtain sufficient votes in favor of the merger proposal to obtain approval of that proposal.

The GenVec board of directors unanimously recommends that you vote FOR the approval of this proposal.

Approval of this proposal requires the affirmative vote of the holders of a majority of shares of GenVec common stock present in person or represented by proxy at the special meeting and entitled to vote on this proposal. If you fail to vote, or fail to instruct your broker, bank or other nominee to vote, it will have no effect on this proposal, assuming a quorum is present. If you mark your proxy or voting instructions to abstain, it will have the same effect as voting against this proposal.

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Legal matters

The validity of the shares of Intrexon common stock to be issued in the merger will be passed upon by Troutman Sanders LLP.

Experts

The consolidated financial statements of Intrexon Corporation and management s assessment of the effectiveness of internal control over financial reporting (which is included in Management s Report on Internal Control over Financial Reporting) incorporated in this proxy statement/prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2016 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of ZIOPHARM as of December 31, 2015 and 2014 and for each of the years in the two-year period ended December 31, 2015, incorporated in this proxy statement/prospectus by reference from the ZIOPHARM Annual Report on Form 10-K for the year ended December 31, 2016, have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report thereon, incorporated herein by reference, and have been incorporated in this proxy statement/prospectus in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

The financial statements of GenVec, Inc. as of December 31, 2016 and for the year then ended included in this proxy statement/prospectus have been so included in reliance upon the report of Dixon Hughes Goodman LLP, an independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing. The financial statements of GenVec, Inc. as of December 31, 2015 and for the year then ended included in this proxy statement/prospectus have been so included in reliance upon the report of Stegman & Company, an independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing.

Future shareholder proposals

General

If the merger is completed, GenVec will become a wholly owned subsidiary of Intrexon, it will not hold its 2017 annual meeting of shareholders and there will be no public participation in any future meetings of shareholders of GenVec. If the merger is not completed, GenVec s shareholders will continue to be entitled to attend and participate in GenVec shareholders meetings and GenVec expects to hold a 2017 annual meeting of shareholders at a date to be determined by its board of directors.

Submission of shareholder proposals for inclusion in proxy statement for 2017 annual meeting of shareholders

To be considered for inclusion in the proxy statement for the 2017 annual meeting of shareholders of GenVec, proposals submitted in accordance with the SEC s Rule 14a-8 must be received at GenVec s executive offices, which are located at 910 Clopper Road, Suite 220N, Gaithersburg, Maryland 20878, Attention: Corporate Secretary, not later than May 15, 2017.

Shareholder proposals to be voted upon at annual meetings of the shareholders, pursuant to GenVec s bylaws, generally must be delivered to the Corporate Secretary of GenVec at GenVec s principal executive offices not

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less than 120 days nor more than 150 days prior to the anniversary of the mailing date of GenVec s proxy materials for the preceding annual meeting of shareholders. If GenVec s annual meeting is scheduled more than 30 days from the anniversary of the calendar date of the prior year s annual meeting of shareholders, shareholder proposals must be delivered to GenVec within 10 days of the mailing of notice to the shareholders or of public disclosure regarding the date of the annual meeting. Such proposals must comply with the requirements in GenVec s bylaws, including setting forth with particularity (i) the names and business addresses of the shareholder submitting such proposal and all persons (as such term is defined in Section 3(a)(9) of the Exchange Act) acting in concert with such shareholder, (ii) the names and addresses of such shareholder and the persons identified in clause (i), as they appear on GenVec s books (if they so appear), (iii) the class and number of shares of GenVec beneficially owned by such shareholder and the persons identified in clause (i), (iv) a description of such proposal containing all material information relating thereto, and (v) such other information as the GenVec board of directors reasonably determines is necessary or appropriate to enable the board of directors and shareholders of GenVec to consider such proposal.

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Other matters

As of the date of this proxy statement/prospectus, the GenVec board of directors knows of no matters that will be presented for consideration at the special meeting other than as described in this proxy statement/prospectus. If any other matters properly come before the special meeting or any adjournments or postponements of the meeting and are voted upon, the enclosed proxy will confer discretionary authority on the individuals named as proxy to vote the shares represented by the proxy as to any other matters. The individuals named as proxies intend to vote in accordance with their best judgment as to any other matters.

Where you can find more information

Intrexon and GenVec file annual, quarterly and current reports, proxy statements and other information with the SEC under the Exchange Act. You may read and copy any of this information at the SEC s Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. The SEC also maintains an Internet website that contains reports, proxy and information statements, and other information regarding issuers, including Intrexon and GenVec, who file electronically with the SEC. The address of that site is *www.sec.gov*. Investors may also consult GenVec s and Intrexon s websites for more information concerning the merger described in this proxy statement/prospectus. GenVec s website is *www.genvec.com* and Intrexon s website is *www.dna.com.* Information included on these websites is expressly not incorporated by reference into this proxy statement/prospectus.

Intrexon has filed with the SEC a registration statement of which this proxy statement/prospectus forms a part. The registration statement registers the shares of Intrexon common stock to be issued to GenVec shareholders in connection with the merger. The registration statement, including the attached exhibits and schedules, contains additional relevant information about Intrexon common stock.

Intrexon and GenVec also incorporate by reference the merger agreement attached to this proxy statement/prospectus as Annex A.

The SEC allows Intrexon to incorporate by reference the information Intrexon files with it, which means that Intrexon can disclose important information to you by referring you to other documents filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this proxy statement/prospectus.

The following documents, which have been filed by Intrexon with the SEC, are hereby incorporated by reference into this proxy statement/prospectus:

Definitive Proxy Statement, filed with the SEC on May 1, 2017;

Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on March 1, 2017;

Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2017, filed with the SEC on May 10, 2017;

Current Report on Form 8-K, filed with the SEC on March 10, 2017;

Current Report on Form 8-K, filed with the SEC on March 31, 2017;

Current Report on Form 8-K, filed with the SEC on April 27, 2017; and

The description of Intrexon s common stock contained in its Form 8-A, filed with the SEC on August 5, 2013, and any amendments or reports filed for the purpose of updating such description.

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Any information in any of the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this proxy statement/prospectus or in a later filed document that is incorporated or deemed to be incorporated herein by reference modifies or replaces such information.

Any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) made with the SEC by Intrexon pursuant to sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial registration statement and prior to the effectiveness of the registration statement, and (ii) after the date of this proxy statement/prospectus and prior to the date on which the offering pursuant to this proxy statement/prospectus is terminated shall also be deemed incorporated by reference.

Information in such future filings updates and supplements the information provided in this proxy statement/prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document previously filed with the SEC by Intrexon that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

You can obtain any of the documents incorporated by reference into this proxy statement/prospectus through Intrexon or from the SEC through the SEC s Internet Web site at the address included above.

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

Corporate Secretary

Intrexon Corporation

20374 Seneca Meadows Parkway

Germantown, Maryland 20876

(301) 556-9900

This document is a prospectus of Intrexon and is a proxy statement of GenVec for the special meeting. You should only rely on the information contained or incorporated by reference into this proxy statement/prospectus to vote on the proposals to the GenVec shareholders in connection with the merger. Neither Intrexon nor GenVec has authorized anyone to give any information or make any representation about the merger or Intrexon or GenVec that is different from, or in addition to, that contained in this proxy statement/prospectus or in any of the materials that Intrexon or GenVec has incorporated by reference into this proxy statement/prospectus. Therefore, if anyone does give you information of this sort, you should not rely on it. The information contained in this proxy statement/prospectus speaks only as of the date of this proxy statement/prospectus unless the information specifically indicates that another date applies.

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GENVEC, INC.

CONDENSED BALANCE SHEETS

	March 31, 2017 (Unaudited)	December 31, 2016
	(in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 2,536	$ 3,667
Investments, at fair value	1,749	3,498
Accounts receivable, net	84	22
Prepaid expenses and other	224	271
Total current assets	4,593	7,458
Property and equipment, net	255	191
Other assets	58	58
Total assets	$ 4,906	$ 7,707
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 1,635	$ 957
Accrued expenses and other	560	890
Total current liabilities	2,195	1,847
Warrant liabilities, at fair value	2,034	1,059
Other liabilities	94	96
Total liabilities	4,323	3,002
Stockholders equity:		
Preferred stock, $0.001 par value, 5,000 shares authorized; none issued and outstanding at March 31, 2017 or December 31, 2016		
Common stock, $0.001 par value; 55,000 shares authorized; 2,274 shares issued and outstanding at March 31, 2017 and December 31, 2016, respectively	2	2
Additional paid-in capital	295,482	295,333
Accumulated other comprehensive loss	(1)	(3)
Accumulated deficit	(294,900)	(290,627)
Total stockholders equity	583	4,705

Total liabilities and stockholders equity	$ 4,906	$ 7,707

See accompanying notes to unaudited condensed financial statements.

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GENVEC, INC.

CONDENSED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(Unaudited)

	Three Months Ended March 31,	
	2017	**2016**
	(in thousands, except per share data)	
Revenues	$ 114	$ 290
Operating expenses:		
General and administrative	2,654	1,412
Research and development	767	737
Total operating expenses	3,421	2,149
Operating loss	(3,307)	(1,859)
Other income/(expense):		
Change in fair value of warrant liabilities	(975)	
Interest and other income/(expense), net	9	(1)
Total other expense, net	(966)	(1)
Net loss	$ (4,273)	$ (1,860)
Basic and diluted net loss per share	$ (1.88)	$ (1.08)
Shares used in computation of basic and diluted net loss per share	2,274	1,726
Comprehensive Loss:		
Net loss	$ (4,273)	$ (1,860)
Unrealized holding gain on securities available for sale	2	5
Comprehensive loss	$ (4,271)	$ (1,855)

See accompanying notes to unaudited condensed financial statements.

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GENVEC, INC.

CONDENSED STATEMENTS OF CASH FLOWS

(Unaudited)

	Three Months Ended March 31,	
	2017	**2016**
	(in thousands)	
Cash flows from operating activities:		
Net loss	$ (4,273)	$ (1,860)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	23	26
Non-cash charges for stock-based compensation	149	202
Non-cash consideration for release of security interest		4
Change in fair value of warrant liabilities	975	
Changes in current assets and liabilities, net	331	(138)
Changes in non-current liabilities, net	(2)	(3)
Net cash used in operating activities	(2,797)	(1,769)
Cash flows from investing activities:		
Purchases of property and equipment	(87)	
Proceeds from sale of property and equipment	1	
Proceeds from maturities of investment securities	1,752	1,087
Net cash provided by investing activities	1,666	1,087
Change in cash and cash equivalents	(1,131)	(682)
Beginning balance of cash and cash equivalents	3,667	7,015
Ending balance of cash and cash equivalents	$ 2,536	$ 6,333

See accompanying notes to unaudited condensed financial statements.

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GENVEC, INC.

NOTES TO CONDENSED FINANCIAL STATEMENTS

FOR THE THREE MONTHS ENDED MARCH 31, 2017 AND 2016

(Unaudited)

(1) General

Basis of Presentation

The (a) condensed balance sheet as of December 31, 2016, which has been derived from audited financial statements, and (b) unaudited interim condensed financial statements included herein have been prepared by GenVec, Inc. (GenVec , we , our , us , or the Company) without audit pursuant to the rules and regulations of the Securities and Exchange Commission (the SEC). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP) have been condensed or omitted pursuant to such rules and regulations. We believe the disclosures are adequate to make the information presented not misleading. The condensed financial statements included herein should be read in conjunction with the financial statements and the notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC.

In the opinion of management, the accompanying financial statements contain all adjustments (consisting of only normal recurring accruals) necessary to present fairly the financial position of the Company as of March 31, 2017 and December 31, 2016 and the results of its operations and cash flows for the three-month periods ended March 31, 2017 and March 31, 2016. The results of operations for any interim period are not necessarily indicative of the results of operations for any other interim period or for a full fiscal year.

Business

GenVec is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. We are pioneers in the design, testing and manufacture of adenoviral-based product candidates that can deliver on the promise of gene-based medicine. Our lead product candidate, CGF166, is licensed to Novartis Institutes for BioMedical Research, Inc. (together with Novartis AG and its subsidiary corporations, including Novartis Pharma AG, Novartis) and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to our internal and partnered pipeline, we also focus on opportunities to license our proprietary technology platform, including vectors and production cell lines, to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

A key component of our strategy is to develop and commercialize our product candidates through collaborations. We are working with prominent companies and organizations such as Novartis, Merial (a unit of Boehringer Ingelheim), Washington University in St. Louis, and the U.S. government, as well as promising young companies such as TheraBiologics, to support a portfolio of programs that addresses the prevention and treatment of a number of significant human and animal health concerns. Our combination of internal and partnered development programs address therapeutic areas such as hearing loss and balance disorders, oncology, bleeding disorders, as well as vaccines against infectious diseases, including respiratory syncytial virus (RSV), herpes simplex virus (HSV), malaria, and in the area of animal health, vaccines against foot-and-mouth disease (FMD).

Our AdenoVerse gene delivery technology has the important advantage of localizing protein delivery in the body. This is accomplished by using our adenovector platform to locally deliver genes to cells, which then direct production of the desired protein. This approach reduces side effects typically associated with systemic delivery of proteins. For therapeutics, the goal is for the protein produced to have a meaningful effect in treating the cause, manifestation, or progression of the disease. For vaccines, the goal is to induce an immune response

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against a target protein or antigen. This is accomplished by using an adenovector to deliver a gene that causes production of an antigen, which then stimulates the desired immune reaction by the body.

Our research and development activities yield product candidates that utilize our technology platform and represent potential commercial opportunities. For example, preclinical research in hearing loss and balance disorders indicates that the delivery of the atonal gene using our adenovector technology may have the potential to restore hearing and balance function. We are currently working with Novartis on the development of novel treatments for hearing loss and balance disorders that emerged from these research and development efforts. There are currently no effective therapeutic treatments available for patients who have lost all balance function, and hearing loss remains a major unmet medical problem.

We have multiple vaccine candidates that leverage our core adenovector technology, including our vaccine candidates for the prevention or treatment of RSV and HSV. We also have a program to develop a vaccine for malaria, a program in which we are currently working in collaboration with the Laboratory of Malaria Immunology and Vaccinology (LMIV) of the National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIAID).

Our business strategy is focused on entering into collaborative arrangements with third parties to complete the development and commercialization of our product candidates. In the event that third parties take over the development for one or more of our product candidates, the estimated completion date would largely be under the control of that third party rather than us. We cannot forecast with any degree of certainty which proprietary products or indications, if any, will be subject to future collaborative arrangements, in whole or in part, or how such arrangements would affect our development plan or capital requirements. Our programs may also benefit from subsidies, grants, or government or agency-sponsored studies that could reduce our development costs.

An element of our business strategy is to pursue, as resources permit, the research and development of a range of product candidates for a variety of indications. This is intended to allow us to diversify the risks associated with our research and development expenditures. To the extent we are unable to maintain a broad range of product candidates, our dependence on the success of one or a few product candidates would increase.

PLAN OF MERGER

On January 24, 2017, the Company, Intrexon Corporation, a Virginia corporation (Intrexon), and Intrexon GV Holding, Inc., a Delaware corporation and wholly owned subsidiary of Intrexon (Merger Sub), entered into an Agreement and Plan of Merger (the Merger Agreement), pursuant to which, and on the terms and subject to the conditions set forth in the Merger Agreement, Merger Sub will merge with and into GenVec (the Merger). GenVec will survive the Merger as a wholly owned subsidiary of Intrexon. For more information on the Merger, the Merger Agreement and its terms and conditions, see Note 11, Subsequent Events, of the Notes to Financial Statements included in our Annual Report on Form 10-K for the year ended December 31, 2016.

Except where it is clear from the context, the discussion in this Form 10-Q does not contemplate the consummation of the Merger or the integration of GenVec with Intrexon.

GOING CONCERN

As a result of the uncertainties involved in our business, we are unable to estimate the duration and completion costs of our research and development projects or when, if ever, and to what extent we will receive cash inflows from the commercialization and sale of a product. Our inability to complete our research and development projects in a timely manner or our failure to enter into collaborative agreements, when appropriate, could significantly increase our capital

requirements and could adversely impact our liquidity. These uncertainties could force us to seek additional, external sources of financing from time to time in order to continue with our

business strategy. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business. Our estimated future capital requirements are uncertain and could change materially as a result of many factors, including the progress of our research, development, clinical, manufacturing, and commercialization activities.

Management has determined the Company has suffered recurring losses from operations and has an accumulated deficit that raises substantial doubt about our ability to continue as a going concern for the next twelve months. The report of our independent registered public accounting firm for the year ended December 31, 2016 included an explanatory paragraph that expressed substantial doubt about our ability to continue as a going concern. Our financial statements do not include any adjustments that might result from the outcome of the uncertainty. If the merger with Intrexon is not consummated, our ability to continue as a going concern may depend on our ability to raise additional capital, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. There are no assurances that these future funding and operating efforts will be successful. If management is unsuccessful in these efforts, our current capital is not expected to be sufficient to fund our operations for the next twelve months. Our financial statements as of March 31, 2017 do not include any adjustments that might result from the outcome of this uncertainty.

Use of Estimates

The preparation of financial statements, in conformity with U.S. GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and revenues and expenses during the period. Critical accounting estimates involved in applying our accounting policies are those that require management to make assumptions about matters that are highly uncertain at the time the accounting estimate is made and those for which different estimates reasonably could have been used for the current period. Critical accounting estimates are also those which are reasonably likely to change from period to period, and would have a material impact on the presentation of our financial condition, changes in financial condition, or results of operations. Our most critical accounting estimates relate to accounting policies for strategic collaborations and research contract revenues, research and development activities, stock-based compensation, and warrant liabilities. Management bases its estimates on historical experience and on various other assumptions that it believes are reasonable under the circumstances. Actual results could differ from these estimates.

Fair Value of Financial Instruments

The carrying amounts reported in the accompanying financial statements for cash, cash equivalents, investments, and warrant liabilities, approximate fair value of these financial instruments. The fair value for marketable securities and warrant liabilities is discussed in Notes 2 and 4, respectively.

Revenue Recognition

Revenue is recognized when all four of the following criteria are met: (i) a contract is executed; (ii) the contract price is fixed and determinable; (iii) delivery of the services or products has occurred; and (iv) collectability of the contract amounts is considered probable.

Our collaborative research and development agreements provide for upfront license fees, research payments, and/or substantive milestone payments. Upfront non-refundable fees associated with license and development agreements where we have continuing involvement in the agreement are recorded as deferred revenue and recognized over the estimated service period. If the estimated service period is subsequently modified, the period over which the upfront fee is recognized is modified accordingly on a prospective basis. Upfront non-refundable license and development

fees for which no future performance obligations exist are recognized when collection is assured. Substantive milestone payments are considered performance payments and are recognized upon achievement of the milestone if all of the following criteria are met: (i) achievement of the milestone involves a

degree of risk and was not reasonably assured at the inception of the arrangement; (ii) substantive effort is involved in achieving the milestone; and (iii) the amount of the milestone payment is reasonable in relation to all of the deliverables and payment terms within the arrangement. Determination of whether a milestone meets the aforementioned conditions involves the judgment of management.

Research and development revenue from cost-reimbursement and cost-plus fixed-fee agreements is recognized as earned based on the performance requirements of the contract. Revisions in revenues, cost, and billing factors, such as indirect rate estimates, are accounted for in the period of change. Reimbursable costs under such contracts are subject to audit and retroactive adjustment. Contract revenues and accounts receivable reported in the financial statements are recorded at the amount expected to be received. Contract revenues are adjusted to actual upon final audit and retroactive adjustment. Estimated contractual allowances are provided based on management s evaluation of current contract terms and past experience with disallowed costs and reimbursement levels. Payments received in advance of work performed are recorded as deferred revenue.

Research and development revenue from fixed-price best efforts arrangements is recognized as earned based on the performance requirements of the contract. Revenue under these arrangements is recognized when delivery to and acceptance by the customer has been received. During the period of performance, recoverable contract costs are accumulated on the balance sheet in other current assets, but no revenue or profit is recorded prior to customer acceptance of the contractually stated deliverables. Recoverable contract costs that are accumulated on the balance sheets include all direct costs associated with the arrangement and an allocation of indirect costs. Payments received in advance of customer acceptance are recorded as deferred revenue. Once customer acceptance has been received, revenue and recoverable contract costs are recognized. Over the course of the arrangement, we routinely evaluate whether revenue and profitability should be recognized in the current period. Any known or probable losses on projects are charged to operations in the period in which such losses are determined.

Recent Accounting Pronouncements

In November 2016, the Financial Accounting Standards Board (the FASB) issued Accounting Standards Update (ASU) No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash . This ASU clarifies the presentation requirements of restricted cash within the statement of cash flows. The changes in restricted cash and restricted cash equivalents during the period should be included in the beginning and ending cash and cash equivalents balance reconciliation on the statement of cash flows. When cash, cash equivalents, restricted cash, or restricted cash equivalents are presented in more than one line item within the statement of financial position, an entity shall calculate a total cash amount in a narrative or tabular format that agrees to the amount shown on the statement of cash flows. Details on the nature and amounts of restricted cash should also be disclosed. This standard is effective for annual and interim reporting periods for fiscal years beginning after December 15, 2017. The Company is currently evaluating the impact this standard may have on our financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Clarification of Certain Cash Receipts and Cash Payments. The objective of ASU 2016-15 is to eliminate the diversity in practice related to the classification of certain cash receipts and payments in the statement of cash flows, by adding or clarifying guidance on eight specific cash flow issues. For public business entities, ASU 2016-15 is effective for annual and interim reporting periods beginning after December 15, 2017, with early adoption permitted. ASU 2015-16 provides that the amendments in the update should be applied retrospectively to all periods presented, unless deemed impracticable, in which case, prospective application is permitted. The Company is currently evaluating the impact this standard may have on our financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new standard requires that all lessees recognize the assets and liabilities that arise from leases on the balance sheet and disclose qualitative and quantitative information about their leasing arrangements. The amendments in this ASU are effective for annual and interim periods for fiscal years beginning after December 15, 2018. The adoption of this standard is expected

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to have a material impact on our financial position. The Company is currently evaluating the impact this standard may have on our results of operations.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, which amends the guidance in U.S. GAAP on the classification and measurement of financial instruments. Changes to the current guidance primarily affect the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. In addition, the ASU clarifies guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. The amendments in this ASU are effective for fiscal years and interim periods beginning after December 15, 2017, and are to be adopted by means of a cumulative-effect adjustment to the balance sheet at the beginning of the first reporting period in which the guidance is effective. Early adoption is not permitted except for the provision to record fair value changes for financial liabilities under the fair value option resulting from instrument-specific credit risk in other comprehensive income. The Company is currently evaluating the impact of adopting this standard.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. ASU 2014-09 was originally going to be effective for us on January 1, 2017; however, the FASB issued ASU 2015-14, Revenue from Contracts with Customers (Topic 606) Deferral of the Effective Date, which deferred the effective date of ASU 2014-09 by one year to January 1, 2018. In March 2016, the FASB issued ASU No. 2016-8, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations. The amendments in this ASU do not change the core principle of ASU No. 2014-09 but the amendments clarify the implementation guidance on reporting revenue gross versus net. The effective date for the amendments in this ASU is the same as the effective date of ASU No. 2014-09. In April 2016, the FASB issued ASU No. 2016-10, Revenue from Contracts with Customers (Identifying Performance Obligations and Licensing), to clarify the implementation guidance on identifying performance obligations and licensing. The standard allows for either full retrospective adoption, meaning the standard is applied to all of the periods presented, or modified retrospective adoption, meaning the standard is applied only to the most current period presented in the financial statements. The Company is currently evaluating the impact of adopting these standards. Nothing has come to the Company s attention that would indicate the adoption of these standards will have a material impact on the Company s financial statements. However, the adoption of these standards will have a material impact on the Company s disclosures.

There are no other applicable new accounting pronouncements issued but not effective until after March 31, 2017 that the Company believes could have a significant effect on our financial position or results of operations.

(2) Fair Value Measurements

For assets and liabilities measured at fair value, we utilize FASB Accounting Standards Codification (ASC) Section 820 Fair Value Measurements and Disclosures (ASC 820), which defines fair value and establishes a framework for fair value measurements. This standard establishes a three-level hierarchy for disclosure of fair value measurements. The hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels of inputs used to measure fair value are as follows:

Level 1 Quoted prices in active markets for identical assets or liabilities;

Level 2 Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, and other inputs that are observable (e.g., interest rates, yield curves, volatilities and default rates, among others) or that can be corroborated by observable market data; and

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Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities, including certain pricing models, discounted cash flow methodologies, and similar techniques that use significant unobservable inputs.

The following table presents information about assets and liabilities recorded at fair value on a recurring basis on the Condensed Balance Sheet at March 31, 2017:

	Total Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)		
Assets:				
Corporate bonds	$ 1,749	$	$ 1,749	$
Total assets at fair value	$ 1,749	$	$ 1,749	$
Liabilities:				
Warrant liabilities	$ 2,034	$	$	$ 2,034
Total liabilities at fair value	$ 2,034	$	$	$ 2,034

The following table presents information about assets and liabilities recorded at fair value on a recurring basis on the Condensed Balance Sheet at December 31, 2016:

	Total Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)		
Assets:				
Corporate notes and bonds	$ 3,498	$	$ 3,498	$
Total assets at fair value	$ 3,498	$	$ 3,498	$
Liabilities:				
Warrant liabilities	$ 1,059	$	$	$ 1,059
Total liabilities at fair value	$ 1,059	$	$	$ 1,059

We determine fair value for our investments in marketable securities with Level 1 inputs through quoted market prices and have classified them as available-for- sale. Our Level 2 investments consist of corporate notes and bonds maturing at various times in 2017.

We review all investments for other-than-temporary impairment at least quarterly or as indicators of impairment exist. Indicators of impairment include the duration and severity of the decline in fair value as well as the intent and ability to hold the investment to allow for a recovery in the market value of the investment. In addition, we consider qualitative factors that include, but are not limited to, (i) the financial condition and business plans of the investee, including its future earnings potential, (ii) the investee s credit rating and (iii) the current and expected market and industry conditions in which the investee operates. If a decline in the fair value of an investment is deemed by management to be other-than-temporary, we write down the cost basis of the investment to fair value, and the amount of the write down is included in net earnings. Such a determination is dependent on the facts and circumstances relating to each investment. We have determined there were no such impairments during the first quarter of 2017. During the first quarter of 2016, we determined that our equity security holding had incurred an other-than-temporary impairment as a result of the entity in which we held the equity being acquired by another company at a price lower than our carrying value. The stock of the entity is no longer being publicly traded. As a result of this impairment, we realized a loss of $4,000.

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All unrealized holding gains or losses related to our investments in marketable securities are reflected in accumulated other comprehensive loss in stockholders equity. The changes in accumulated other comprehensive loss were net unrealized gains of $2,000 and $5,000 for the three months ended March 31, 2017 and 2016, respectively.

(3) Stock-Based Compensation Expense

The following table summarizes stock-based compensation expense related to employee stock options for the three-month periods ended March 31, 2017 and March 31, 2016, which was allocated as follows:

	Three Months Ended March 31,	
	2017	2016
	(in thousands)	
General and administrative	$ 97	$ 136
Research and development	52	66
	$ 149	$ 202

We use the Black-Scholes pricing model to value stock options. No stock options were granted in 2017. The estimated fair value of employee stock options granted during the three-month periods ended March 31, 2016 was calculated using the Black-Scholes model with the following weighted-average assumptions:

	For the Three Months Ended March 31, 2016
Risk-free interest rate	1.51%
Expected dividend yield	0.00%
Expected volatility	101.66%
Expected life (years)	6.46
Weighted-average fair value of options granted	$0.46

The risk-free interest rate assumptions are based upon various U.S. Treasury rates as of the date of the grants. The dividend yield is based on the assumption that we do not expect to declare a dividend over the life of the options.

The volatility assumptions are based on the weighted average volatility for the most recent one-year period as well as the volatility over the expected life of 6.46 years. The expected life of employee stock options represents the weighted average of combining the actual life of options that have already been exercised or cancelled with the expected life of all outstanding options. The expected life of outstanding options is calculated assuming the options will be exercised at the midpoint between the applicable vesting date and the full contractual term.

The Company estimates forfeiture rates at the time of grant and revises these estimates, if necessary, in subsequent periods if actual forfeitures differ from the estimates. Forfeitures are estimated based on the demographics of current option holders and standard probabilities of employee turnover.

The weighted-average fair value of the options granted for the three-month periods ended March 31, 2016 is $0.46. We do not record tax-related effects on stock- based compensation given our historical and anticipated operating experience and offsetting changes in our valuation allowance, which fully reserves against potential deferred tax assets.

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Stock Options

The following table summarizes the stock option activity for the three-month period ended March 31, 2017:

	Number of shares	Weighted average exercise price	Weighted average contractual life (years)	Aggregate intrinsic value
	(in thousands, except exercise price and contractual term data)			
Stock options outstanding, January 1, 2017	289	$ 30.95		
Granted				
Expired	(2)	261.00		
Stock options outstanding at March 31, 2017	287	$ 29.50	6.70	$ 55
Vested or expected to vest at March 31, 2017 (a)	275	$ 30.27	6.62	$ 50
Exercisable at March 31, 2017	204	$ 35.81	5.95	$ 8

(a) This represents the number of vested options as of March 31, 2017, plus the number of unvested options as of March 31, 2017 that we expect to vest in the future based on our estimated forfeiture rate.

Unrecognized stock-based compensation related to stock options was approximately $0.8 million as of March 31, 2017. This amount is expected to be expensed over a weighted average period of 1.9 years. There were no options exercised during the three-month periods ended March 31, 2017 or 2016.

The following table summarizes information about our stock options outstanding and exercisable as of March 31, 2017:

	Outstanding			Exercisable	
Range of exercise prices	Number of shares	Weighted average remaining contractual life (in years)	Weighted average exercise price	Number of shares	Weighted average exercise price
	(number of shares in thousands)				
$0.00 $7.00	70	8.97	$ 5.28	17	$ 5.60
$7.01 $100.00	204	6.22	27.32	174	26.82
$100.01 $200.00	5	1.02	171.39	5	171.39

$200.01	$300.00	6	2.29	228.60	6	228.60
$300.01	$410.00	2	0.05	410.00	2	410.00
		287	6.70	$ 29.50	204	$ 35.81

(4) Warrants

On May 10, 2016, in a registered offering pursuant to the 2014 shelf registration statement (as defined in Note 6 below), we sold 547,195 shares of our common stock (the Shares), at a purchase price of $9.1375 per share. In a private placement concurrent with the sale of the Shares, we sold to the investors who purchased the Shares warrants to purchase 410,396.8 shares of common stock (the Warrants). The Shares and the Warrants were sold pursuant to a securities purchase agreement for aggregate gross proceeds of $5.0 million. Subject to certain ownership limitations, the Warrants became exercisable on November 10, 2016 at an exercise price equal to $8.30 per share of common stock, subject to adjustments as provided under the terms of the Warrants. The Warrants are exercisable until November 10, 2022.

In connection with the offering of the Shares and Warrants, we issued to the placement agent and its designees unregistered warrants to purchase an aggregate of 38,303.7 shares of our common stock (the Placement Agent

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Warrants). The Placement Agent Warrants have substantially the same terms as the Warrants, except that the Placement Agent Warrants will expire on May 4, 2021 and have an exercise price equal to $11.422 per share of common stock.

A summary of the allocation of the proceeds of the offering is shown below:

(in thousands)	
Allocated to warrant liabilities	$ 2,511
Allocated to common stock and additonal paid-in capital	2,489
Total allocated gross proceeds	$ 5,000

The closing costs of $699,861 included the 38,303.7 Placement Agent Warrants valued at $202,862, and $496,999 for placement agent and other fees. Based upon the estimated fair value of the Shares and Warrants in units, the Company allocated $250,279 to financing expense and $449,582 as stock issuance costs.

The table below sets forth the Warrants and Placement Agent Warrants as of March 31, 2017:

Offering Date	Outstanding Warrants	Exercise Price	Expiration Date	Status
May 2016	410,396.8	$ 8.30	11/10/2022	Exercisable
May 2016	38,303.7	11.4220	5/4/2021	Exercisable
	448,700.5			

The Warrants contain a provision for liquidated damages in the event that there is a failure to deliver shares of common stock within three days of receiving a notice to exercise. As a result of this liquidated damages provision, the Warrants require liability classification in accordance with ASC 480 and are recorded at fair value. The fair value of the Warrants has been determined under a Black-Scholes pricing model; assuming a weighted average 5.49 year remaining life for the warrants, 1.97% risk-free interest rate, a 104.24% expected volatility and no dividend yield, the weighted average fair value of warrant liability as of March 31, 2017 is $4.54. Changes in fair value are recorded against operations in the reporting period in which they occur; increases or decreases in fair value are recorded to other income/(expense) as a change in fair value of warrant liabilities.

(5) Net Loss per Share

Basic earnings per share is computed based upon the net loss available to common stock stockholders divided by the weighted average number of common stock shares outstanding during the period. The dilutive effect of common stock equivalents is included in the calculation of diluted earnings per share only when the effect of the inclusion would be dilutive. For the three-month periods ended March 31, 2017 and 2016 all common stock equivalent shares associated with our stock option plans and stock equivalent shares associated with our warrants were excluded from the denominator in the diluted loss per share calculation as their inclusion would have been antidilutive.

(6) Stockholders Equity

On December 1, 2016, the Company effected a 1 for 10 reverse stock split of the Company s outstanding stock. All share and per share amounts in the unaudited condensed financial statements and accompanying notes have been retroactively restated to reflect the split.

On January 23, 2014, we filed a $75.0 million shelf registration statement on Form S-3 (the 2014 shelf registration statement), with the SEC which was declared effective February 11, 2014 and allowed us to obtain financing through the issuance of any combination of common stock, preferred stock or warrants. Due to its expiration, the 2014 shelf registration statement is no longer available for use for primary offerings by the Company.

On February 11, 2014, we entered into an Equity Distribution Agreement (the EDA) with Roth Capital Partners, LLC (Roth Capital Partners), pursuant to which we could sell from time to time up to $10.0 million of shares of our common stock, par value $0.001 per share, through Roth Capital Partners. Sales of shares pursuant to the EDA, if any, could be made by any method permitted by law deemed to be an at the market offering as defined in Rule 415 of the Securities Act of 1933, as amended, including without limitation directly on the NASDAQ Capital Market, or any other existing trading market for the shares or through a market maker, or, if agreed by us and Roth Capital Partners, by any other method permitted by law, including but not limited to in negotiated transactions. Sales under the EDA were made pursuant to the 2014 shelf registration statement. As of March 31, 2014, we had sold 72,168 shares pursuant to the EDA for gross proceeds of approximately $2.6 million. We have not sold any shares under the EDA since that date, and we would not be able to do so until a new registration statement is filed pursuant to which sales under the EDA may be made.

On March 18, 2014, we sold 287,000 shares of our common stock, par value $0.001, in a registered direct offering pursuant to the 2014 shelf registration statement (the 2014 RDO), at a price of $31.50 per share, resulting in gross proceeds of approximately $9.0 million.

On May 10, 2016, in a registered offering pursuant to the 2014 shelf registration statement, we sold the Shares, as defined in Note 4 above, at a purchase price of $9.1375 per share (together with the 2014 RDO, the Registered Direct Offerings). In a private placement concurrent with the sale of the Shares, we sold the Warrants to the investors who purchased the Shares. The Shares and Warrants, as defined in Note 4 above, were sold pursuant to a securities purchase agreement for aggregate gross proceeds of $5.0 million. Subject to certain ownership limitations, the Warrants became exercisable on November 10, 2016 at an exercise price equal to $8.30 per share of common stock, subject to adjustments as provided under the terms of the Warrants. The Warrants are exercisable until November 10, 2022.

In connection with the offering of the Shares and Warrants, we issued to the placement agent and its designees unregistered warrants to purchase the Placement Agent Warrants, as defined in Note 4 above. The Placement Agent Warrants have substantially the same terms as the Warrants, except that the Placement Agent Warrants will expire on May 4, 2021 and have an exercise price equal to $11.422 per share of common stock.

The net proceeds from the sale of the Shares and the Warrants are $4.5 million after deducting certain fees due to the placement agent and our estimated transaction expenses.

As of March 31, 2017, pursuant to the EDA and the Registered Direct Offerings, we have sold 906,363 shares of our common stock since the 2014 shelf registration statement became effective on February 11, 2014, for gross proceeds of $16.6 million. These sales resulted in proceeds, net of issuance costs of approximately $15.1 million. The 2014 shelf registration statement expired on February 11, 2017.

On February 24, 2016, we received notification from NASDAQ that the minimum bid price of our common stock had remained below $1.00 per share for 30 consecutive business days, and we therefore were not in compliance with the minimum bid price requirement for continued listing set forth in Marketplace Rule 5550(a)(2). The notification letter stated that we would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with the minimum bid price requirement. On August 23, 2016, we received notification from NASDAQ that we had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance, the closing bid price of our common stock must have met or exceeded $1.00 per share for at least ten consecutive business days. NASDAQ may, in its discretion, require our common stock to maintain a bid price of at least $1.00 per share for a period in excess of ten consecutive business days, but generally no more than 20 consecutive business days, before determining we demonstrated an ability to maintain long-term compliance.

On December 15, 2016, we received a notice from NASDAQ stating that the Company regained compliance with the $1.00 minimum bid price requirement for continued listing set forth in Marketplace Rule 5450(a)(1) because the

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closing bid price of the Company s common stock met or exceeded $1.00 per share for at least 10 consecutive business days. The notice further stated that the NASDAQ matter relating to the Company s non-compliance with the minimum bid price requirement, which the Company initially disclosed under Item 3.01 of its Current Report on Form 8-K filed with the Securities and Exchange Commission on February 26, 2016, is now closed.

Effective September 7, 2011, we entered into a stockholder rights agreement (the Stockholder Rights Agreement) between the Company and American Stock Transfer & Trust Company, LLC, as rights agent. The Stockholder Rights Agreement was not adopted in response to any specific effort to acquire control of the Company. In connection with the adoption of the Stockholder Rights Agreement, the Company s board of directors declared a dividend of one preferred stock purchase right (a Right) for each outstanding share of common stock to stockholders of record as of the close of business on September 7, 2011. Initially, the Rights will be represented by the Company s common stock certificates or book entry notations, will not be traded separately from the common stock, and will not be exercisable. In the event that any person acquires beneficial ownership of 20% or more of the outstanding shares of the Company s common stock, or upon the occurrence of certain other events, each holder of a Right, other than the acquirer, would be entitled to receive, upon payment of the purchase price, which is initially set at $32 per Right, a number of shares of GenVec common stock having a value equal to two times such purchase price. The Company s board of directors is entitled to redeem the Rights at $0.001 per Right at any time before a person or group has acquired 20% or more of the Company s common stock. The Rights will expire on September 7, 2021, subject to the Company s right to extend such date, unless earlier redeemed or exchanged by the Company or terminated. The Rights will at no time have any voting rights. The Company has authorized 30,000 shares of Series B Junior Participating Preferred Stock in connection with the adoption of the Stockholder Rights Agreement. There was no Series B Junior Participating Preferred Stock issued or outstanding as of March 31, 2017.

In connection with the execution of the Merger Agreement with Intrexon, we amended the Stockholder Rights Agreement to provide that none of Intrexon, Merger Sub or any of their respective associates or affiliates shall become an Acquiring Person under the Stockholder Rights Agreement and to otherwise exempt the Merger from triggering provisions or rights under the Stockholder Rights Agreement.

(7) Collaborative Agreements

In January 2010, we entered into a research collaboration and license agreement with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Under the terms of the agreement, we licensed the world-wide rights to our preclinical hearing loss and balance disorders program to Novartis. We received a $5.0 million upfront payment and Novartis purchased $2.0 million of our common stock.

We were eligible, from the inception of the agreement, to receive up to an additional $206.6 million in milestone payments if certain clinical, regulatory, and sales milestones were met, including: up to $0.6 million for the achievement of preclinical development activities; up to $26.0 million for the achievement of clinical milestones (including non-rejection of an IND with respect to a covered product, the first patient visit in Phase I, Phase IIb and Phase III clinical trials); up to $45.0 million for the receipt of regulatory approvals; and up to $135.0 million for sales-based milestones.

From September 2010 through October 2014, we achieved four milestones resulting in aggregate payments from Novartis of $5.6 million. We have not achieved any milestones since October 2014.

The achieved milestones are as follows:

	Milestone Event	Date	Amount
(1)	Successful completion of certain preclinical development activities	September 2010	$ 300,000
(2)	Successful completion of certain preclinical development activities	December 2011	300,000
(3)	Non-rejection by the FDA of the IND filed by Novartis for CGF166	February 2014	2,000,000
(4)	First patient treated in a Phase I clinical trial with CGF166	October 2014	3,000,000

As of April 30, 2017, milestones remaining available under the agreement included $21.0 million of additional clinical milestones, $45.0 million in regulatory milestones, and $135.0 million of sales-based milestones.

Additionally, if a product is commercialized we are also entitled to tiered royalties on the annual net sales of licensed products, on a product-by-product and country-by-country basis, at percentage rates that range based on annual net sales from the mid-single digits to the low double digits until the earlier of (a) the expiration of the last valid claim with respect to applicable patent rights and (b) January 1 following a year in which annual net sales of the product declined by a specified percentage of the highest level of prior annual net sales where the decline is reasonably attributable in part to the marketing or sale of a competing product in the country. For the five years thereafter, in the applicable country we are entitled to tiered royalties of below 1% on annual net sales. The collaboration and license agreement is terminable for convenience upon notice by either party or for uncured material breach.

In addition, the agreement allows us to receive funding from Novartis for a research program focused on developing additional adenovectors for hearing loss. During each of the three-month periods ended March 31, 2017 and 2016, we recognized $0.1 million for work performed under the agreement.

In January 2016, we were notified by Novartis that enrollment was paused in the clinical study for CGF166. This pause was based on a review of data by the trial s Data Safety Monitoring Board (the DSMB) in accordance with criteria in the trial protocol. On April 28, 2016, we were notified by Novartis, based on a review of safety and efficacy data from the nine patients currently enrolled in the study, that the DSMB recommended that the trial continue, subject to approval by the FDA. On July 25, 2016, we announced we were notified by Novartis, that the FDA had lifted the clinical hold on the trial. In February 2017, we were notified that the first patient in the fourth cohort of the trial had been dosed.

In August 2010, we signed an agreement for the supply of services relating to development materials with Novartis, related to our collaboration in hearing loss and balance disorders. Under this agreement, valued at $14.9 million, we agreed to manufacture clinical trial material for up to two lead product candidates. During each of the three-month periods ended March 31, 2017 and 2016, we recognized $30,000 for services performed under this agreement.

In March 2015, we announced a collaboration with TheraBiologics, Inc. to develop cancer therapeutics leveraging both our proprietary gene delivery platform and TheraBiologics proprietary neural stem cell technology. Depending on the manner of commercialization, we will be entitled to profit sharing and/or royalty and milestone payments for the products being developed under the collaboration. We will contribute technology, know-how, vector construction, and technical and regulatory support to the program, and TheraBiologics will be responsible for all other development costs. We anticipate TheraBiologics will advance a second generation neural stem cell-based cancer treatment utilizing our technology into the clinic by the first half of 2018.

In April 2015, we announced a Research Collaboration Agreement with the LMIV under which we will build new vaccine candidates based on our proprietary adenovectors isolated from gorillas and designed to deliver novel antigens discovered at the LMIV.

In June 2015, we announced a multi-faceted collaboration agreement with the School of Medicine at Washington University at St. Louis (WUSTL) under which we and WUSTL will create modified versions of our gorilla adenovectors that incorporate specialized targeting antibodies on the surface of the vectors. These antibodies are produced only by camels, alpacas and other camelids and are smaller and more stable in intracellular environments than their mouse or human counterparts. The ultimate goal of this collaboration is to create highly targeted therapeutics and vaccines.

In December 2016, we entered into an exclusive option agreement with Washington University in St. Louis to license intellectual property and technology related to gene editing and pulmonary endothelial cell targeting. If

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the option is exercised, the license will allow broad utilization of technology. The Company plans to initially focus on research utilizing the technology to develop treatments for hemophilia. Under the terms of the agreement we agreed to pay $0.3 million over the two year term of the agreement, this agreement may be terminated by either party upon written notice.

In September 2016, we entered into a second amendment to our previously disclosed license agreement with Merial. Under the terms of the amendment we will provide Merial with certain biological materials and grant Merial the right to use the underlying GenVec technology to further develop and advance FMD vaccine product candidates.

(8) Litigation

On March 28, 2017 and April 6, 2017, putative stockholder class actions were filed in the United States District Court for the District of Delaware styled, respectively, *Parshall v. GenVec, Inc., et. al.*, Case No. 1:17-cv-00338 (D.Del.) and *Mussman v. GenVec, Inc., et al.*, Case No. 1:99-mc-09999 (D.Del.). Additionally, on April 10, 2017 and April 25, 2017, actions were filed in the United States District Court for the District of Maryland styled, respectively *Hoose v. GenVec, Inc. et al.*, Case No. 8:17-cv-00987, and *Pillai v. GenVec, Inc. et al.*, Case No. 8:17-cv-01143 (together with the *Parshall* and *Mussman* actions, the Stockholder Actions). The Stockholder Actions assert claims against GenVec and members of GenVec s board of directors (the Individual Defendants). The *Parshall* action also named, and the *Hoose* action purports to name, Intrexon and Merger Sub as defendants. The complaints in the Stockholder Actions allege that GenVec and the Individual Defendants violated Section 14(a) of the Exchange Act, and Rule 14a-9 promulgated thereunder, by failing to disclose in the draft proxy statement included in the Registration Statement on Form S-4 filed by Intrexon on March 17, 2017 in connection with the Merger certain information regarding alleged potential conflicts of interest, events leading up to the signing of the merger agreement with Intrexon and Merger Sub, certain financial data regarding GenVec, and certain inputs regarding Roth Capital Partners fairness opinion. The complaints in the Stockholder Actions also allege the Individual Defendants violated Section 20(a) of the Securities Exchange Act of 1934, as amended, as control persons who had the ability to prevent the Registration Statement from being false and misleading. The *Parshall* and *Hoose* actions also allege that Intrexon and Merger Sub violated Section 20(a) of the Exchange Act. The actions seek, among other things, an injunction preventing consummation of the merger with Merger Sub, an award of damages, and an award of costs and expenses, including attorneys fees.

On April 19, 2017, the plaintiffs in the *Parshall* and *Mussman* actions voluntarily dismissed their claims. On April 25, 2017, the plaintiff in the *Hoose* action filed a pre-motion letter advising the court of his intention to file a motion for preliminary injunctive relief (the April 25 Letter). On May 4, 2017, the *Hoose* and *Pillai* actions were consolidated for all purposes.

On May 2, 2017, the parties to the Stockholder Actions entered into a Memorandum of Understanding (MOU) that calls for, among other things: (1) certain additional disclosures to be included in the proxy statement mailed to GenVec stockholders; (2) the withdrawal of the April 25 Letter in the *Hoose* action; and (3) dismissal of the *Hoose* and *Pillai* actions immediately following the vote by GenVec stockholders on the Merger. On May 4, 2017, in accordance with the MOU, the plaintiffs in the *Hoose* and *Pilla*i actions advised the Court of the MOU, filed stipulations seeking to stay those actions and withdrew the April 25 Letter. GenVec and the Individual Defendants believe the *Hoose* and *Pillai* actions are without merit and, if those actions are not voluntarily dismissed pursuant to the MOU, intend to vigorously defend them. GenVec and the Individual Defendants agreed to make the additional disclosures that are the subject of the MOU to avoid the expense and inconvenience of further litigation.

(9) Reclassifications

On December 1, 2016, the Company effected a 1 for 10 reverse stock split of the Company s outstanding stock. All share and per share amounts in the unaudited condensed financial statements and accompanying notes have been retroactively restated to reflect the split.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders

of GenVec, Inc.

We have audited the accompanying balance sheet of GenVec, Inc. (the Company) as of December 31, 2016, and the related statements of operations and comprehensive loss, changes in stockholders equity, and cash flows for the year then ended. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of GenVec, Inc. as of December 31, 2016, and the results of its operations and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming the Company will continue as a going concern. As discussed in Note 1, to the financial statements, the Company has suffered recurring losses from operations and has an accumulated deficit that raises substantial doubt about its ability to continue as a going concern. Management s plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Dixon Hughes Goodman LLP

Baltimore, Maryland
March 6, 2017

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders

of GenVec, Inc.

We have audited the accompanying balance sheet of GenVec, Inc. (the Company) as of December 31, 2015, and the related statements of operations and comprehensive loss, changes in stockholders equity, and cash flows for the year then ended. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of GenVec, Inc. as of December 31, 2015, and the results of its operations and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

/s/ Stegman & Company

Baltimore, Maryland
March 9, 2016

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GENVEC, INC.

BALANCE SHEETS

	As of December 31,	
	2016	**2015**
	(in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 3,667	$ 7,015
Investments, at fair value	3,498	1,661
Accounts receivable, net	22	166
Prepaid expenses and other	271	245
Total current assets	7,458	9,087
Property and equipment, net	191	279
Other assets	58	97
Total assets	$ 7,707	$ 9,463
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 957	$ 1,096
Accrued expenses and other	890	598
Total current liabilities	1,847	1,694
Warrant liabilities, at fair value	1,059	
Other liabilities	96	89
Total liabilities	3,002	1,783
Commitments and Contingencies		
Stockholders equity:		
Preferred stock, $0.001 par value, 5,000 shares authorized; none issued and outstanding at December 31, 2016 or 2015		
Common stock, $0.001 par value; 55,000 shares authorized; 2,274 and 1,726 shares issued and outstanding at December 31, 2016 and 2015, respectively	2	2
Additional paid-in capital	295,333	292,523
Accumulated other comprehensive loss	(3)	(5)
Accumulated deficit	(290,627)	(284,840)
Total stockholders equity	4,705	7,680

Total liabilities and stockholders equity	$ 7,707	$ 9,463

See accompanying notes to financial statements.

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GENVEC, INC.

STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

	Years ended December 31,	
	2016	**2015**
	(in thousands, except per share data)	
Revenues	$ 511	$ 885
Operating expenses:		
General and administrative	5,227	4,901
Research and development	2,499	2,551
Total operating expenses	7,726	7,452
Operating loss	(7,215)	(6,567)
Other income/(expense):		
Change in fair value of warrant liabilities	1,655	
Financing expense	(250)	
Interest and other income, net	23	22
Total other income, net	1,428	22
Net loss	$ (5,787)	$ (6,545)
Basic and diluted net loss per share	$ (2.78)	$ (3.90)
Shares used in computation of basic and diluted net loss per share	2,080	1,678
Comprehensive Loss:		
Net loss	$ (5,787)	$ (6,545)
Unrealized holding gain on securities	2	28
Comprehensive loss	$ (5,785)	$ (6,517)

See accompanying notes to financial statements.

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GENVEC, INC.

STATEMENTS OF CHANGES IN STOCKHOLDERS EQUITY

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
	Shares	Amount				
			(in thousands)			
Balance, January 1, 2015	1,727	$ 2	$ 291,624	$ (33)	$ (278,295)	$ 13,298
Net loss					(6,545)	(6,545)
Unrealized change in investments, net				28		28
Common stock issued under shelf registration, net of issuance costs	(1)		(24)			(24)
Stock-based compensation			923			923
Balance, December 31, 2015	1,726	$ 2	$ 292,523	$ (5)	$ (284,840)	$ 7,680
Net loss					(5,787)	(5,787)
Unrealized change in investments, net				2		2
Common stock issued under shelf registration, net of issuance costs	548		2,029			2,029
Stock-based compensation			781			781
Balance, December 31, 2016	2,274	$ 2	$ 295,333	$ (3)	$ (290,627)	$ 4,705

See accompanying notes to financial statements.

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GENVEC, INC.

STATEMENTS OF CASH FLOWS

	Years ended December 31,	
	2016	**2015**
	(in thousands)	
Cash flows from operating activities:		
Net loss	$ (5,787)	$ (6,545)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	90	97
Non-cash adjustments for financing expense	250	
Bad debt expense		24
Non-cash charges for stock-based compensation	781	923
Non-cash consideration for release of security interest	4	
Change in fair value of warrant liabilities	(1,655)	
Impairment of long lived assets	16	
Gain on sale of long lived assets		(18)
Changes in current assets and liabilities, net	311	(509)
Changes in non-current assets, net	7	89
Net cash used in operating activities	(5,983)	(5,939)
Cash flows provided by investing activities:		
Purchases of property and equipment	(19)	(100)
Proceeds from sale of property and equipment		18
Purchases of investment securities	(3,483)	
Proceeds from sale or maturity of investment securities	1,644	5,092
Net cash provided by/(used in) investing activities	(1,858)	5,010
Cash flows from financing activities:		
Proceeds/(costs) from issuance of common stock and warrants	4,493	(24)
Net cash provided by/(used in) financing activities	4,493	(24)
Change in cash and cash equivalents	(3,348)	(953)
Beginning balance of cash and cash equivalents	7,015	7,968
Ending balance of cash and cash equivalents	$ 3,667	$ 7,015

See accompanying notes to financial statements.

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GENVEC, INC.

NOTES TO FINANCIAL STATEMENTS

(1) ORGANIZATION, BUSINESS DESCRIPTION AND LIQUIDITY

GenVec, Inc. (GenVec or the Company) is a clinical-stage biopharmaceutical company with an entrepreneurial focus on leveraging its proprietary AdenoVerse gene delivery platform to develop a pipeline of cutting-edge therapeutics and vaccines. GenVec is a pioneer in the design, testing and manufacture of adenoviral-based product candidates that can deliver on the promise of gene-based medicine. The Company s lead product candidate, CGF166, is licensed to Novartis Institutes for BioMedical Research, Inc. (together with Novartis AG and its subsidiary corporations, including Novartis Pharma AG, Novartis) and is currently in a Phase 1/2 clinical study for the treatment of hearing loss and balance disorders. In addition to GenVec s internal and partnered pipeline, GenVec also focuses on opportunities to license its proprietary technology platform, including vectors and production cell lines to potential collaborators in the biopharmaceutical industry for the development and manufacture of therapeutics and vaccines.

A key component of the Company s strategy is to develop and commercialize its product candidates through collaborations. The Company is working with prominent companies and organizations such as Novartis, Merial (a unit of Boehringer Ingelheim), Washington University in St. Louis, and the U.S. government, as well as promising young companies such as TheraBiologics, to support a portfolio of programs that address the prevention and treatment of a number of significant human and animal health concerns. The Company s combination of internal and partnered development programs addresses therapeutic areas such as hearing loss and balance disorders, oncology, bleeding disorders, as well as vaccines against infectious diseases including respiratory syncytial virus (RSV), herpes simplex virus (HSV), malaria; and in the area of animal health are developing vaccines against foot-and-mouth disease (FMD).

The Company s AdenoVerse gene delivery technology has the important advantage of localizing protein delivery in the body. This is accomplished by using GenVec s adenovector platform to locally deliver genes to cells, which then direct production of the desired protein. This approach reduces side effects typically associated with systemic delivery of proteins. For therapeutics, the goal is for the protein produced to have meaningful effect in treating the cause, manifestation, or progression of the disease. For vaccines, the goal is to induce an immune response against a target protein or antigen. This is accomplished by using an adenovector to deliver a gene that causes production of an antigen, which then stimulates the desired immune reaction by the body.

The Company s research and development activities yield product candidates that utilize GenVec s technology platform and represent potential commercial opportunities. For example, preclinical research in hearing loss and balance disorders indicates that the delivery of the atonal gene using the Company s adenovector technology may have the potential to restore hearing and balance function. GenVec is currently working with Novartis on the development of novel treatments for hearing loss and balance disorders that emerged from these research and development efforts. There are currently no effective therapeutic treatments available for patients who have lost all balance function, and hearing loss remains a major unmet medical problem.

GenVec has multiple vaccine candidates that leverage its core adenovector technology including its preclinical vaccine candidates for the prevention or treatment of RSV and HSV. GenVec also has a program to develop a vaccine for malaria, a program in which GenVec is currently working in collaboration with the Laboratory of Malaria Immunology and Vaccinology (LMIV) of the National Institute of Allergy and Infectious Diseases, National Institutes of Health (the NIAID).

GenVec s business strategy is focused on entering into collaborative arrangements with third parties to complete the development and commercialization of GenVec s product candidates. In the event that third parties take over the development for one or more of GenVec s product candidates, the estimated completion date would largely

be under the control of that third party rather than us. GenVec cannot forecast with any degree of certainty which proprietary products or indications, if any, will be subject to future collaborative arrangements, in whole or in part, or how such arrangements would affect GenVec s development plan or capital requirements. GenVec s programs may also benefit from subsidies, grants or government or agency-sponsored studies that could reduce GenVec s development costs.

An element of GenVec s business strategy is to pursue, as resources permit, the research and development of a range of product candidates for a variety of indications. This is intended to allow GenVec to diversify the risks associated with GenVec s research and development expenditures. To the extent GenVec is unable to maintain a broad range of product candidates, GenVec s dependence on the success of one or a few product candidates would increase.

On February 24, 2016, the Company received notification that it would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with NASDAQ s minimum bid price requirement, referred to herein as the Bid Price Requirement. To regain compliance with the Bid Price Requirement, the closing bid price of the Company s common stock was required to meet or exceed $1.00 per share for at least 10 consecutive business days. On August 23, 2016, the Company received notice that it had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. NASDAQ s determination in the August 23, 2016 notice was based on the Company meeting the continued listing requirement for market value of publicly held shares and all other applicable requirements for initial listing on The NASDAQ Capital Market with the exception of the minimum bid price requirement, and the Company s written notice to NASDAQ of its intention to cure the minimum bid price deficiency, including by effecting a reverse stock split, if necessary.

On October 20, 2016, the Company s shareholders approved an amendment to the Company s Amended and Restated Certificate of Incorporation to effect a reverse stock split of the Company s common stock at a ratio within the range of one-for-three to one-for-ten, as determined by the Company s board of directors. On December 1, 2016, the Company effected the reverse stock split at a ratio of one-for-ten, whereby each 10 shares of common stock were combined into one share of common stock. The reverse stock split was intended to enable the Company to regain compliance with the Bid Price Requirement. On December 15, 2016, the Company received a notice from NASDAQ stating that it had regained compliance.

On January 24, 2017, the Company, Intrexon Corporation, a Virginia corporation (Intrexon), and Intrexon GV Holding, Inc., a Delaware corporation and wholly owned subsidiary of Intrexon (Merger Sub), entered into an Agreement and Plan of Merger (the Merger Agreement), pursuant to which, and on the terms and conditions set forth in the Merger Agreement, Merger Sub will merge with and into the Company (the Merger). The Company will survive the Merger as a wholly owned subsidiary of Intrexon. See Note 11, Subsequent Events , for more information about the Merger.

As a result of the uncertainties involved in GenVec s business, GenVec is unable to estimate the duration and completion costs of its research and development projects or when, if ever, and to what extent it will receive cash inflows from the commercialization and sale of a product. GenVec s inability to complete its research and development projects in a timely manner or its failure to enter into collaborative agreements, when appropriate, could significantly increase its capital requirements and could adversely impact its liquidity. These uncertainties could force GenVec to seek additional, external sources of financing from time to time in order to continue with GenVec s business strategy. GenVec s inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of GenVec s business. GenVec s estimated future capital requirements are uncertain and could change materially as a result of many factors, including the progress of its research, development, clinical, manufacturing, and commercialization activities.

Management has determined the Company has suffered recurring losses from operations and has an accumulated deficit that raises substantial doubt about GenVec s ability to continue as a going concern for the next twelve months. The report of GenVec s independent registered public accounting firm for the year ended December 31,

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2016 includes an explanatory paragraph, which expresses substantial doubt about GenVec s ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of the uncertainty. If the merger with Intrexon is not consummated, GenVec s ability to continue as a going concern may depend on GenVec s ability to raise additional capital, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. There are no assurances that these future funding and operating efforts will be successful. If management is unsuccessful in these efforts, GenVec s current capital is not expected to be sufficient to fund GenVec s operations for the next twelve months. GenVec s financial statements as of December 31, 2016 do not include any adjustments that might result from the outcome of this uncertainty.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) USE OF ESTIMATES

The preparation of financial statements, in conformity with accounting principles generally accepted in the United States of America, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and revenues and expenses during the period. Critical accounting policies involved in applying GenVec s accounting policies are those that require management to make assumptions about matters that are highly uncertain at the time the accounting estimate was made and those for which different estimates reasonably could have been used for the current period. Critical accounting estimates are also those which are reasonably likely to change from period to period, and would have a material impact on the presentation of GenVec s financial condition, changes in financial condition or results of operations. GenVec s most critical accounting estimates relate to accounting policies for strategic collaborations and research contract revenues, research and development activities, and stock-based compensation. Management bases its estimates on historical experience and on various other assumptions that it believes are reasonable under the circumstances. Actual results could differ from these estimates.

(b) CASH AND CASH EQUIVALENTS

Cash equivalents consist of highly liquid debt instruments, time deposits, and money market funds with original maturities of three months or less.

(c) INVESTMENTS

GenVec s investments consist primarily of corporate stock and bonds, government agency bonds, and commercial paper. These investments are classified as available-for-sale securities, which are carried at fair value, with the unrealized holding gains and losses reported as a separate component of accumulated other comprehensive income (loss) until realized. Realized gains and losses from the sale of available-for-sale securities are determined on a specific-identification basis.

A decline in the market value of any available-for-sale security below cost that is deemed to be other-than-temporary results in a reduction in carrying amount to fair value. The impairment is charged to earnings and a new cost basis for the security is established. To determine whether impairment is other-than-temporary, GenVec considers whether GenVec has the ability and intent to hold the investment until a market price recovery and consider whether evidence indicating the cost of the investment is recoverable outweighs evidence to the contrary. Evidence considered in this assessment includes the reasons for the impairment, the severity and duration of the impairment, changes in value subsequent to year-end, forecasted performance of the investee, and the general market condition in the geographic area or industry the investee operates. Premiums and discounts are amortized or accreted over the life of the related security as an adjustment to yield using the effective interest method. Dividend and interest income are recognized

when earned.

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(d) FAIR VALUE OF FINANCIAL INSTRUMENTS

The carrying amounts of GenVec s financial instruments, as reflected in the accompanying balance sheets, approximate fair value except as noted on the face of the statements. Financial instruments consist of cash and cash equivalents, investments, accounts receivable, and accounts payable.

(e) PROPERTY AND EQUIPMENT

Property and equipment are stated at cost and depreciated on a straight-line basis over the estimated useful lives of assets, which are generally three to five years for equipment and seven years for furniture and fixtures. Leased property meeting certain criteria is capitalized at the lower of the present value of the future minimum lease payments or fair value at the inception of the lease. Amortization of capitalized leased assets is computed on a straight-line basis over the shorter of the lease term or estimated useful life of the asset. GenVec incurs maintenance costs with respect to some of GenVec s major equipment. Repair and maintenance costs are expensed as incurred.

(f) REVENUE RECOGNITION

Revenue is recognized when all four of the following criteria are met (i) a contract is executed, (ii) the contract price is fixed and determinable, (iii) delivery of the services or products has occurred, and (iv) collectability of the contract amounts is considered probable.

GenVec s collaborative research and development agreements provide for upfront license fees, research payments, and/or substantive milestone payments. Upfront non-refundable fees associated with license and development agreements where GenVec has continuing involvement in the agreement are recorded as deferred revenue and recognized over the estimated service period. If the estimated service period is subsequently modified, the period over which the upfront fee is recognized is modified accordingly on a prospective basis. Upfront non-refundable license and development fees for which no future performance obligations exist are recognized when collection is assured. Substantive milestone payments are considered performance payments and are recognized upon achievement of the milestone if all of the following criteria are met: (i) achievement of the milestone involves a degree of risk and was not reasonably assured at the inception of the arrangement; (ii) substantive effort is involved in achieving the milestone; and (iii) the amount of the milestone payment is reasonable in relation to all of the deliverables and payment terms within the arrangement. Determination of whether a milestone meets the aforementioned conditions involves the judgment of management.

Research and development revenue from cost-reimbursement and cost-plus fixed-fee agreements is recognized as earned based on the performance requirements of the contract. Revisions in revenues, cost, and billing factors, such as indirect rate estimates, are accounted for in the period of change. Reimbursable costs under such contracts are subject to audit and retroactive adjustment. Contract revenues and accounts receivable reported in the financial statements are recorded at the amount expected to be received. Contract revenues are adjusted to actual upon final audit and retroactive adjustment. Estimated contractual allowances are provided based on management s evaluation of current contract terms and past experience with disallowed costs and reimbursement levels. Payments received in advance of work performed are recorded as deferred revenue.

Research and development revenue from fixed-price best efforts arrangements is recognized as earned based on the performance requirements of the contract. Revenue under these arrangements is recognized when delivery to and acceptance by the customer has been received. During the period of performance, recoverable contract costs are accumulated on the balance sheet in other current assets, but no revenue or profit is recorded prior to customer acceptance of the contractually stated deliverables. Recoverable contract costs that are accumulated on the balance

sheet include all direct costs associated with the arrangement and an allocation of indirect costs. Payments received in advance of customer acceptance are recorded as deferred revenue. Once customer acceptance has been received, revenue and recoverable contract costs are recognized. Over the course of the

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arrangement, GenVec routinely evaluates whether revenue and profitability should be recognized in the current period. Any known or probable losses on projects are charged to operations in the period in which such losses are determined.

(g) RESEARCH AND DEVELOPMENT

Research and development costs are charged to operations as incurred. Advance payments to acquire goods or pay for services that will be consumed or performed in a future period in conducting research and development activities are recorded as an asset when the advance payments are made. Capitalized amounts are recognized as expense when the research and development activities are performed; that is, when the goods without alternative future use are acquired or the service is rendered.

Research and development costs include internal research and development expenditures (such as salaries and benefits, raw materials, supplies, and allocated facility expenses), contracted services (such as sponsored research, consulting, manufacture of drug supply, and testing services of proprietary research), and development activities and similar expenses associated with collaborative research agreements. These costs are expensed as incurred.

(h) INCOME TAXES

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. GenVec recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50 percent likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. GenVec includes any interest or penalties incurred in connection with income taxes as part of other expense.

GenVec has significant net operating loss carryforwards to potentially reduce future federal and state taxable income, and research and experimentation tax credit carryforwards available to potentially offset future federal income taxes. Due to the Company s prior equity transactions, the Company s net operating loss and research and experimentation credit carryforwards may expire unutilized due to changes in GenVec s ownership as defined within Section 382 of the Internal Revenue Code.

The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making that assessment. GenVec recorded a full valuation allowance against all estimated net deferred tax assets at December 31, 2016 and 2015.

(i) NET LOSS PER SHARE

Basic earnings per share is computed based upon the net loss available to common stock stockholders divided by the weighted average number of common stock shares outstanding during the period. The dilutive effect of common stock equivalents is included in the calculation of diluted earnings per share only when the effect of the inclusion would be dilutive. For the years ended December 31, 2016 and 2015 all common stock equivalent shares associated with

GenVec s stock option plans, unvested restricted shares, and stock equivalent shares associated with GenVec s warrants were excluded from the denominator in the diluted loss per share calculation as their inclusion would have been antidilutive.

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(j) COMPREHENSIVE INCOME (LOSS)

Comprehensive income (loss) consists of net loss and unrealized holding gains and losses from available-for-sale securities.

(k) STOCK-BASED COMPENSATION

GenVec measures stock-based compensation expense based on the grant date fair value of the awards which is then recognized over the period during which service is required to be provided. GenVec estimates grant date fair value using the Black-Scholes option-pricing model. Stock-based compensation cost amounted to $0.8 million and $0.9 million for the years ended December 31, 2016 and 2015, respectively.

(l) LONG-LIVED ASSETS

Long-lived assets, such as property and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset be tested for possible impairment, GenVec first compares undiscounted cash flows expected to be generated by an asset to the carrying value of the asset. If the carrying value of the long-lived asset is not recoverable on an undiscounted cash flow basis, impairment is recognized to the extent that the carrying value exceeds its fair value. Fair value is determined through various valuation techniques including discounted cash flow models, quoted market values, and third party independent appraisals, as necessary.

(m) COMMITMENTS AND CONTINGENCIES

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties, and other sources are recorded when it is probable that a liability has been incurred and the amount of the assessment and/or remediation can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

(n) RECENT ACCOUNTING PRONOUNCEMENTS

Recently Adopted Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board (the FASB), issued ASU No. 2016-09, Compensation Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, which changes the accounting for certain aspects of share-based payments to employees. The amendments in this ASU require the recognition of the income tax effects of awards in the income statement when the awards vest or are settled, thus eliminating additional paid-in capital pools. The standard also allows the employer to repurchase more of an employee s shares for tax withholding purposes without triggering liability accounting. In addition, the standard allows for a policy election to account for tax forfeitures as they occur rather than on an estimated basis. The amendments in this ASU are effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company adopted this standard as of December 31, 2016. Based upon GenVec s evaluation, the adoption of this ASU did not have a material effect on GenVec s financial statements.

In November 2015, the FASB issued ASU No. 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes, which simplifies the presentation of deferred income taxes by requiring that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. This ASU is effective for financial statements issued for annual periods beginning after December 16, 2016, and interim periods within those annual periods. The Company adopted this standard as of December 31, 2016 and the adoption of this standard did not have

any impact on the Company s financial position, results of operations, or disclosures.

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In April 2015, the FASB issued ASU No. 2015-03, Interest \ Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs. To simplify the presentation of debt issuance costs, the amendments in this ASU require that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The recognition and measurement guidance for debt issuance costs are not affected by the amendments in this ASU. The amendments in this ASU are effective for financial statements issued for fiscal years beginning after December 15, 2015 and interim periods within fiscal years beginning after December 15, 2016. Early adoption of the amendments in this ASU is permitted for financial statements that have not been previously issued. The Company adopted this standard as of December 31, 2016 and the adoption of this standard did not have any impact on the Company s financial position, results of operations, or disclosures.

In August 2014, the FASB issued ASU No. 2014-15, Presentation of Financial Statements Going Concern (Topic 205), which requires management to assess an entity s ability to continue as a going concern and to provide related disclosures in certain circumstances. Under the new standard, disclosures are required when conditions or events give rise to substantial doubt about an entity s ability to continue as a going concern within one year from the financial statement issuance date. The new standard is effective for annual periods ending after December 15, 2016, and all annual and interim periods thereafter. Early application is permitted. The Company adopted this standard as of December 31, 2016 and the adoption of this standard resulted to additional disclosures in GenVec s financial statements.

Recently Issued Accounting Pronouncements

In November 2016, the FASB issued Accounting Standards Update (ASU) No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash . This ASU clarifies the presentation requirements of restricted cash within the statement of cash flows. The changes in restricted cash and restricted cash equivalents during the period should be included in the beginning and ending cash and cash equivalents balance reconciliation on the statement of cash flows. When cash, cash equivalents, restricted cash or restricted cash equivalents are presented in more than one line item within the statement of financial position, an entity shall calculate a total cash amount in a narrative or tabular format that agrees to the amount shown on the statement of cash flows. Details on the nature and amounts of restricted cash should also be disclosed. This standard is effective for fiscal years beginning after December 15, 2017, including interim periods within that reporting period. The Company is currently evaluating the impact this standard may have on GenVec s financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Clarification of Certain Cash Receipts and Cash Payments. The objective of ASU 2016-15 is to eliminate the diversity in practice related to the classification of certain cash receipts and payments in the statement of cash flows, by adding or clarifying guidance on eight specific cash flow issues. For public business entities, ASU 2016-15 is effective for annual and interim reporting periods beginning after December 15, 2017, with early adoption permitted. ASU 2015-16 provides that the amendments in the update should be applied retrospectively to all periods presented, unless deemed impracticable, in which case, prospective application is permitted. The Company is currently evaluating the impact this standard may have on GenVec s financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new standard requires that all lessees recognize the assets and liabilities that arise from leases on the balance sheet and disclose qualitative and quantitative information about their leasing arrangements. The amendments in this ASU are effective for annual periods beginning after December 15, 2018, and interim periods within those annual periods. The adoption of this standard is expected to have a material impact on GenVec s financial position. The Company is currently evaluating the impact this standard may have on GenVec s results of operations.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, which amends the guidance in accounting principles generally accepted in the United States of America on the classification and measurement

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of financial instruments. Changes to the current guidance primarily affect the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. In addition, the ASU clarifies guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. The amendments in this ASU are effective for fiscal years and interim periods beginning after December 15, 2017, and are to be adopted by means of a cumulative-effect adjustment to the balance sheet at the beginning of the first reporting period in which the guidance is effective. Early adoption is not permitted except for the provision to record fair value changes for financial liabilities under the fair value option resulting from instrument-specific credit risk in other comprehensive income. The Company is currently evaluating the impact of adopting this standard.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. ASU 2014-09 was originally going to be effective for GenVec on January 1, 2017; however, the FASB issued ASU 2015-14, Revenue from Contracts with Customers (Topic 606) Deferral of the Effective Date, which deferred the effective date of ASU 2014-09 by one year to January 1, 2018. In March 2016, the FASB issued ASU No. 2016-8, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations. The amendments in this ASU do not change the core principle of ASU No. 2014-09 but the amendments clarify the implementation guidance on reporting revenue gross versus net. The effective date for the amendments in this ASU is the same as the effective date of ASU No. 2014-09. In April 2016, the FASB issued ASU No. 2016-10, Revenue from Contracts with Customers (Identifying Performance Obligations and Licensing), to clarify the implementation guidance on identifying performance obligations and licensing. The standard allows for either full retrospective adoption, meaning the standard is applied to all of the periods presented, or modified retrospective adoption, meaning the standard is applied only to the most current period presented in the financial statements. The Company is currently evaluating the impact of adopting these standards and at this point, nothing has come to the Company s attention that would indicate the adoption of these standards will have a material impact on the Company s financial statements, however the adoption of these standards will have a material impact on the Company s disclosures.

There are no other applicable new accounting pronouncements issued by but not effective until after December 31, 2016 that the Company believes could have a significant effect on GenVec s financial position or results of operations.

(o) RECLASSIFICATIONS

On February 24, 2016, GenVec received notification that GenVec would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with NASDAQ s minimum bid price requirement (the Bid Price Requirement), and on August 23, 2016, GenVec received notice that GenVec had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance with the Bid Price Requirement, the closing bid price of GenVec s common stock was required to meet or exceed $1.00 per share for at least 10 consecutive business days. On December 1, 2016, GenVec effected a reverse stock split, referred to herein as the reverse stock split, of its outstanding common stock at a ratio of one-for-ten, whereby each 10 shares of common stock were combined into one share of common stock. The reverse stock split was intended to enable GenVec to regain compliance with the Bid Price Requirement. On December 15, 2016, GenVec received a notice from NASDAQ stating that GenVec had regained compliance.

Certain prior year share and per share information have been reclassified to conform to the current year presentation.

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(3) FAIR VALUE MEASUREMENTS

For assets and liabilities measured at fair value GenVec utilizes FASB Accounting Standards Codification (ASC) Section 820 Fair Value Measurements and Disclosures (ASC 820), which defines fair value and establishes a framework for fair value measurements. This standard establishes a three-level hierarchy for disclosure of fair value measurements. The hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels of inputs used to measure fair value are as follows:

Level 1 Quoted prices in active markets for identical assets or liabilities;

Level 2 Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active and other inputs that are observable (e.g., interest rates, yield curves, volatilities and default rates, among others) or that can be corroborated by observable market data; and

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities, including certain pricing models, discounted cash flow methodologies, and similar techniques that use significant unobservable inputs.

The following table presents information about assets and liabilities recorded at fair value on a recurring basis on the balance sheet at December 31, 2016:

	Total Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)		
Assets:				
Corporate notes and bonds	$ 3,498	$	$ 3,498	$
Total assets at fair value	$ 3,498	$	$ 3,498	$
Liabilities:				
Warrant liabilities	$ 1,059	$	$	$ 1,059
Total liabilities at fair value	$ 1,059	$	$	$ 1,059

The following table presents information about assets and liabilities recorded at fair value on a recurring basis on the balance sheet at December 31, 2015:

	Total Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
		(in thousands)	
Assets:			
Corporate notes and bonds	$ 1,593	$	$ 1,593
Equity securities	68	68	
Total assets at fair value	$ 1,661	$ 68	$ 1,593

GenVec determines fair value for GenVec s investments with Level 1 inputs through quoted market prices and have classified them as available-for-sale. GenVec s Level 2 investments consist of corporate notes and bonds maturing at various times in 2017.

GenVec reviews all investments for other-than-temporary impairment at least quarterly or as indicators of impairment exist. Indicators of impairment include the duration and severity of the decline in fair value as well as

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the intent and ability to hold the investment to allow for a recovery in the market value of the investment. In addition, GenVec considers qualitative factors that include, but are not limited to: (i) the financial condition and business plans of the investee, including its future earnings potential, (ii) the investee s credit rating and (iii) the current and expected market and industry conditions in which the investee operates. If a decline in the fair value of an investment is deemed by management to be other-than-temporary, GenVec writes down the cost basis of the investment to fair value, and the amount of the write down is included in net earnings. Such a determination is dependent on the facts and circumstances relating to each investment. During the first quarter of 2016, GenVec determined that GenVec s equity security holding had incurred an other-than-temporary impairment as a result of the entity in which GenVec held the equity being acquired by another company at a price lower than GenVec s carrying value. The stock of the entity is no longer being publicly traded. As a result of this impairment, GenVec realized a loss of $4,000. GenVec has determined there were no such impairments during 2015.

All unrealized holding gains or losses related to GenVec s investments in marketable securities are reflected in accumulated other comprehensive loss in stockholders equity. The change in accumulated other comprehensive loss were net unrealized gains of $2,000 and $28,000 for the years ended December 31, 2016 and 2015, respectively.

A summary of investments is shown below:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
December 31, 2016				
Investments				
Corporate and agency notes	$ 3,496	$ 2	$	$ 3,498
Total investments	$ 3,496	$ 2	$	$ 3,498
December 31, 2015				
Investments				
Corporate and agency notes and equity securities	$ 1,666	$	$ (5)	$ 1,661
Total investments	$ 1,666	$	$ (5)	$ 1,661

As of December 31, 2016, the Company also had a Level 3 liability associated with the warrants issued in connection with the Company s May 2016 registered offering, described in Note 8 below. The warrants are considered a liability and are valued using the Black-Scholes option-pricing model, the inputs for which include the following: a weighted average 5.73 year remaining life for the warrants, 2.00% risk-free interest rate, a 113.14% expected volatility and no dividend yield. Changes in fair value are recorded against operations in the reporting period in which they occur; increases and decreases in fair value are recorded in other income/(expense) as a change in fair value. The change in fair value was a gain of $1.7 million for the year ended December 31, 2016.

The following table sets for the a reconciliation of changes in the year ended December 31, 2016 in the fair value of the liabilities classified as Level 3 in the fair value hierarchy:

	Warrant Liabilities *(in thousands)*
Balance at January 1, 2016	$
Warrant issuances	2,714
Change in fair value	(1,655)
Balance at December 31, 2016	$ 1,059

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(4) PROPERTY AND EQUIPMENT

Property and equipment consists of the following at December 31:

	2016	2015
	(in thousands)	
Equipment	$ 863	$ 881
Leasehold improvements	80	66
Furniture and fixtures	111	105
	1,054	1,052
Less accumulated depreciation and amortization	(863)	(773)
	$ 191	$ 279

Depreciation and amortization expense related to property and equipment was $0.1 million for each of the years ended December 31, 2016 and 2015, respectively. In the fourth quarter of 2016, GenVec determined a piece of laboratory equipment had been impaired and recognized a loss of $16,000. The Company determined the fair value based on a quoted market price. In the fourth quarter of 2015, GenVec sold laboratory equipment and recognized a gain on the sales of $18,000.

(5) ACCRUED EXPENSES AND OTHER

Accrued expenses and other consist of the following at December 31:

	2016	2015
	(in thousands)	
Payroll, compensation, and benefits	$ 684	$ 450
Professional fees	190	131
Other	16	17
Total accrued expenses	$ 890	$ 598

(6) STRATEGIC COLLABORATIONS AND RESEARCH CONTRACTS

GenVec has established collaborations and research contracts with pharmaceutical and biotechnology companies and governmental agencies to enhance GenVec s ability to discover, evaluate, develop, and commercialize multiple product opportunities as well as other licensing arrangements. Revenue earned under these contracts is summarized as follows:

	2016	2015
	(in thousands)	

Hearing Program	$ 175	$ 424
Foot and Mouth Disease Program	100	180
Malaria Program	236	131
Other strategic collaborations and research grants		150
	$ 511	$ 885

(a) NOVARTIS

In January 2010, GenVec entered into a research collaboration and license agreement with Novartis to discover and develop novel treatments for hearing loss and balance disorders. Under the terms of the agreement, GenVec licensed the world-wide rights to GenVec s preclinical hearing loss and balance disorders program to Novartis. GenVec received a $5.0 million upfront payment and Novartis purchased $2.0 million of GenVec s common stock.

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GenVec was eligible, from the inception of the agreement, to receive up to an additional $206.6 million in milestone payments if certain clinical, regulatory, and sales milestones were met, including: up to $0.6 million for the achievement of preclinical development activities; up to $26.0 million for the achievement of clinical milestones (including non-rejection of an IND with respect to a covered product, the first patient visit in Phase I, Phase IIb and Phase III clinical trials); up to $45.0 million for the receipt of regulatory approvals; and up to $135.0 million for sales-based milestones.

From September 2010 through October 2014, GenVec achieved four milestones resulting in aggregate payments from Novartis of $5.6 million. There were no milestones achieved in 2015 or 2016.

The achieved milestones are as follows:

Milestone Event	Date	Amount
(1) Successful completion of certain preclinical development activities	September 2010	$ 300,000
(2) Successful completion of certain preclinical development activities	December 2011	300,000
(3) Non-rejection by the FDA of the IND filed by Novartis for CGF166	February 2014	2,000,000
(4) First patient treated in a clinical trial with CGF166	October 2014	3,000,000

As of February 28, 2017, milestones remaining available under the agreement include $21.0 million of additional clinical milestones, $45.0 million in regulatory milestones, and $135.0 million of sales-based milestones.

Additionally, if a product is commercialized GenVec is also entitled to tiered royalties on the annual net sales of licensed products, on a product-by-product and country-by-country basis, at percentage rates that range based on annual net sales from the mid-single digits to the low double digits until the earlier of (a) the expiration of the last valid claim with respect to applicable patent rights and (b) January 1 following a year in which annual net sales of the product declined by a specified percentage of the highest level of prior annual net sales where the decline is reasonably attributable in part to the marketing or sale of a competing product in the country. For the five years thereafter, in the applicable country GenVec is entitled to tiered royalties of below 1% on annual net sales. The collaboration and license agreement is terminable for convenience upon notice by either party or for uncured material breach.

In addition, the agreement allows GenVec to receive funding from Novartis for a research program focused on developing additional adenovectors for hearing loss. For the years ended December 31, 2016 and 2015 GenVec recognized $0.1 million and $0.2 million, respectively, for work performed under the Agreement.

In January 2016, GenVec was notified by Novartis that enrollment was paused in the clinical study for CGF166. This pause was based on a review of data by the trial s Data Safety Monitoring Board (DSMB) in accordance with criteria in the trial protocol. On April 28, 2016, GenVec was notified by Novartis, based on a review of safety and efficacy data from the nine patients currently enrolled in the study, that the DSMB recommended that the trial continue, subject to approval by the FDA. On July 25, 2016, GenVec announced GenVec was notified by Novartis, that the FDA had lifted the clinical hold on the trial. In February 2017, GenVec was notified that the first patient in the fourth cohort of the trial had been dosed.

In August 2010, GenVec signed an agreement for the supply of services relating to development materials with Novartis, related to GenVec s collaboration in hearing loss and balance disorders. Under this agreement, valued at $14.9 million, GenVec agreed to manufacture clinical trial material for up to two lead product candidates. During the years ended December 31, 2016 and 2015 GenVec recognized $0.1 million and $0.2 million, respectively, for services

performed under this agreement.

(b) U.S. DEPARTMENT OF HOMELAND SECURITY (DHS)

In February 2010, the Company signed a contract with the DHS to continue the development of adenovector-based vaccines against FMD. Under this contract, the Company was to receive $3.8 million in program funding the first year and an additional $2.1 million if DHS exercises its renewal options under the contract. Under this

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contract, GenVec was to use its adenovector technology to develop additional FMD-serotype candidate vaccines and also explore methods to increase the potency and simplify the production process of adenovector-based FMD vaccines. For the year ended December 31, 2015, GenVec recognized $0.2 million for services performed under this agreement. As of December 31, 2015, $5.8 million in revenue has been recognized under this contract since inception. Work under this agreement was completed in February 2015.

(c) VACCINE RESEARCH CENTER

In March 2012, GenVec received a grant from the NIAID, valued at approximately $600,000 to identify novel highly protective antigens for malaria vaccine development. GenVec recognized $0.2 million and $0.1 million, respectively, in revenue for the years ended December 31, 2016 and 2015. Work under this agreement was completed in March 2016.

(d) OTHER STRATEGIC COLLABORATIONS

In September 2016, GenVec entered into a second amendment to GenVec s previously disclosed license agreement with Merial. Under the terms of the amendment GenVec provided Merial with certain biological materials and granted Merial the right to use the underlying GenVec technology to further develop and advance FMD vaccine product candidates. GenVec recognized $0.1 million in revenue for the year ended December 31, 2016. GenVec has entered into other research grants with the government and recognized revenue derived from other collaborations. Revenue recognized under these collaborations and other licensing arrangements totaled $0.2 million for the year ended December 31, 2015.

(7) COMMITMENTS AND CONTINGENCIES

(a) LEASE AGREEMENTS

GenVec has a non-cancelable operating lease for its facility in Gaithersburg, MD through June 30, 2021. Rent expense under all operating leases was approximately $0.2 million for each of the years ended December 31, 2016 and 2015.

Future minimum lease payments as of December 31, 2016 under GenVec s non-cancelable operating leases are as follows (in thousands):

2017	$ 390
2018	$ 380
2019	$ 387
2020	$ 395
2021	$ 200

(b) LICENSE AGREEMENT

In November 2001, GenVec entered into an exclusive, worldwide license agreement with Baylor College of Medicine for the rights related to the Atoh1 gene. Under the terms of the license agreement, GenVec agreed to pay a non-refundable initial license fee of $50,000 at the time of execution of the license agreement and GenVec also agreed to pay a minimum annual license maintenance fee, non-reducible product royalties based on net sales, which percentage is in the low single digits, and tiered milestone payments based on GenVec s achievement of certain clinical and regulatory related milestones for these rights. GenVec s ability to meet the milestones is dependent on a

number of factors including final approvals by regulatory agencies and the continued enforceability of patent claims.

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(c) WASHINGTON UNIVERSITY AGREEMENT

In December 2016, GenVec entered into an exclusive option agreement with Washington University in St. Louis to license intellectual property and technology related to gene editing and pulmonary endothelial cell targeting. If the option is exercised, the license will allow broad utilization of technology. The Company plans to initially focus on research utilizing the technology to develop treatments for hemophilia. Under the terms of the agreement GenVec agreed to pay $0.3 million over the two year term of the agreement, this agreement may be terminated by either party upon written notice.

(8) STOCKHOLDERS EQUITY

(a) CAPITAL STOCK

On December 1, 2016, the Company effected a 1 for 10 reverse stock split of the Company s outstanding stock. All share and per share amounts herein have been retroactively restated to reflect the split.

On January 23, 2014, GenVec filed a $75.0 million shelf registration statement on Form S-3 (the 2014 shelf registration statement), with the Securities and Exchange Commission which was declared effective February 11, 2014 and allowed GenVec to obtain financing through the issuance of any combination of common stock, preferred stock or warrants.

On February 11, 2014, GenVec entered into an Equity Distribution Agreement (the EDA) with Roth Capital Partners, LLC (Roth Capital Partners), pursuant to which GenVec may sell from time to time up to $10.0 million of shares of GenVec s common stock, par value $0.001 per share, through Roth Capital Partners. Sales of shares pursuant to the EDA, if any, may be made by any method permitted by law deemed to be an at the market offering as defined in Rule 415 of the Securities Act of 1933, as amended, including without limitation directly on the NASDAQ Capital Market, or any other existing trading market for the shares or through a market maker, or, if agreed by GenVec and Roth Capital Partners, by any other method permitted by law, including but not limited to in negotiated transactions. Sales under the EDA were made pursuant to the 2014 shelf registration statement. As of March 31, 2014, GenVec had sold 72,168 shares pursuant to the EDA for gross proceeds of approximately $2.6 million. GenVec has not sold any shares under the EDA since that date.

On March 18, 2014, GenVec sold 287,000 shares of its common stock, par value $0.001, in a registered direct offering pursuant to the 2014 shelf registration statement (the 2014 RDO), at a price of $31.50 per share, resulting in gross proceeds of approximately $9.0 million.

On May 10, 2016, in a registered offering pursuant to the 2014 shelf registration statement, GenVec sold 547,195 shares of GenVec s common stock (the Shares), at a purchase price of $9.1375 per share (together with the 2014 RDO, the Registered Direct Offerings). In a private placement concurrent with the sale of the Shares, GenVec sold to the investors who purchased the Shares warrants to purchase 410,396.8 shares of GenVec s common stock (the Warrants). The Shares and Warrants were sold pursuant to a securities purchase agreement for aggregate gross proceeds of $5.0 million. Subject to certain ownership limitations, the Warrants became exercisable on November 10, 2016 at an exercise price equal to $8.30 per share of common stock, subject to adjustments as provided under the terms of the Warrants. The Warrants are exercisable until November 10, 2022.

In connection with the offering of the Shares and Warrants, GenVec issued to the placement agent and its designees unregistered warrants to purchase an aggregate of 38,303.7 shares of GenVec s common (the Placement Agent Warrants). The Placement Agent Warrants have substantially the same terms as the Warrants, except that the

Placement Agent Warrants will expire on May 4, 2021 and have an exercise price equal to $11.422 per share of common stock.

The net proceeds from the sale of the Shares and the Warrants are $4.5 million after deducting certain fees due to the placement agent and GenVec s estimated transaction expenses.

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As of December 31, 2016, pursuant to the EDA and the Registered Direct Offerings, GenVec has sold 906,363 shares of GenVec s common stock since the 2014 shelf registration statement became effective on February 11, 2014, for gross proceeds of $16.6 million. These sales resulted in proceeds, net of issuance costs of approximately $15.1 million. The shelf registration statement expired on February 11, 2017.

On February 24, 2016, GenVec received notification from NASDAQ that the minimum bid price of GenVec s common stock had remained below $1.00 per share for 30 consecutive business days, and GenVec therefore are not in compliance with the minimum bid price requirement for continued listing set forth in Marketplace Rule 5550(a)(2). The notification letter stated that GenVec would be afforded 180 calendar days, or until August 22, 2016, to regain compliance with the minimum bid price requirement. On August 23, 2016, GenVec received notification from NASDAQ that GenVec had been afforded a second 180 calendar day grace period, or until February 21, 2017, to regain compliance. To regain compliance, the closing bid price of GenVec s common stock must meet or exceed $1.00 per share for at least ten consecutive business days. NASDAQ may, in its discretion, require GenVec s common stock to maintain a bid price of at least $1.00 per share for a period in excess of ten consecutive business days, but generally no more than 20 consecutive business days, before determining GenVec has demonstrated an ability to maintain long-term compliance. If GenVec did not regain compliance by February 21, 2017, the Listing Qualifications Department of NASDAQ indicated it would provide written notification to GenVec that its common stock would be delisted. At that time, GenVec could appeal the delisting determination to a NASDAQ Hearings Panel (the Panel). GenVec s common stock would remain listed pending the Panel s decision.

On December 15, 2016, GenVec received a notice from NASDAQ stating that the Company has regained compliance with the $1.00 minimum bid price requirement for continued listing set forth in Marketplace Rule 5450(a)(1) because the closing bid price of the Company s common stock met or exceeded $1.00 per share for at least 10 consecutive business days. The notice further stated that the NASDAQ matter relating to the Company s non-compliance with the minimum bid price requirement, which the Company initially disclosed under Item 3.01 of its Current Report on Form 8-K filed with the Securities and Exchange Commission on February 26, 2016, is now closed.

Effective September 7, 2011, GenVec entered into a Stockholder Rights Agreement between the Company and American Stock Transfer & Trust Company, LLC, as rights agent. The Stockholder Rights Agreement was not adopted in response to any specific effort to acquire control of the Company. In connection with the adoption of the Stockholder Rights Agreement, the Company s Board of Directors declared a dividend of one preferred stock purchase right, or Right, for each outstanding share of common stock to stockholders of record as of the close of business on September 7, 2011. Initially, the Rights will be represented by the Company s common stock certificates or book entry notations, will not be traded separately from the common stock, and will not be exercisable. In the event that any person acquires beneficial ownership of 20% or more of the outstanding shares of the Company s common stock, or upon the occurrence of certain other events, each holder of a Right, other than the acquirer, would be entitled to receive, upon payment of the purchase price, which is initially set at $32 per Right, a number of shares of GenVec common stock having a value equal to two times such purchase price. The Company s Board of Directors is entitled to redeem the Rights at $0.001 per right at any time before a person or group has acquired 20% or more of the Company s common stock. The Rights will expire on September 7, 2021, subject to the Company s right to extend such date, unless earlier redeemed or exchanged by the Company or terminated. The Rights will at no time have any voting rights. The Company has authorized 30,000 shares of Series B Junior Participating Preferred Stock in connection with the adoption of the Stockholder Rights Agreement. There was no Series B Junior Participating Preferred Stock issued or outstanding as of December 31, 2016.

In connection with the execution of GenVec s merger agreement with Intrexon Corporation (Intrexon), GenVec amended the rights plan to provide that none of Intrexon, its merger subsidiary or any of their respective associates or affiliates shall become an Acquiring Person under the rights plan and to otherwise exempt the merger from triggering

provisions or rights under the rights plan.

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In addition to the common stock reflected on GenVec s balance sheets, the following items are reflected in the capital accounts as of December 31, 2016 and 2015:

5,000,000 shares of $0.001 par value preferred stock have been authorized; none are issued or outstanding.

(b) STOCK-BASED COMPENSATION

Stock Incentive Plans

GenVec s stockholders approved the 2015 Omnibus Incentive Plan (the 2015 Plan) in November 2015. The 2015 Plan increased the number of shares of common stock that are available to be issued through grants or awards made thereunder or through the exercise of options granted by 150,000 shares. At December 31, 2016, there were 99,379 shares available for future issuance and 289,193 outstanding options under the 2015 Plan, the 2011 Omnibus Incentive Plan (the 2011 Plan), the CEO Incentive Plan, and the 2002 Stock Incentive Plan (the 2002 Plan).

Stock options granted under the 2015 Plan generally have a contractual term of 10 years and vest ratably over a four-year service period, when the option is fully exercisable. The Compensation Committee administers the 2015 Plan, approves the individuals to whom options, restricted stock, or other awards will be granted, and determines the terms of the awards, including the number of shares granted and exercise price of each option.

The 2015 Plan amends and restates the 2011 Plan, which was approved in June 2011 as the replacement to the 2002 Plan, which was approved in June 2002. There were 80,500 outstanding options and no outstanding restricted stock awards under the 2015 Plan at December 31, 2016. There were 171,033 outstanding options and no outstanding restricted stock awards under the 2011 Plan at December 31, 2016. There were 29,327 outstanding options and no outstanding restricted stock awards under the 2002 Plan at December 31, 2016. Options outstanding under the 2015 Plan at December 31, 2016 expire through 2026. Options outstanding under the 2011 Plan at December 31, 2016 expire through 2025. Options outstanding under the 2002 Plan at December 31, 2016 expire through 2021.

As of December 31, 2016 there are no unvested restricted stock awards under the 2015 Plan, the 2011 Plan or the 2002 Plan.

In May 2012, the Company granted an Inducement Award to purchase shares of common stock to GenVec s then President and Chief Executive Officer pursuant to a CEO inducement award agreement. The Inducement Award allowed for the purchase of up to 25,000 shares of common stock at an exercise price per share equal to $25.40. The option has a ten-year term and vested ratably over a four-year service period, when the option was to be fully exercisable. When the former CEO departed the Company, she forfeited her unvested shares as of September 3, 2013. There are 8,333 outstanding options awards under the CEO inducement plan at December 31, 2016.

Stock-Based Compensation Expense

The following table summarizes stock-based compensation expense related to employee stock options for the years ended December 31, 2016 and 2015, which was allocated as follows:

	Years ended December 31,

	2016	2015
	(in thousands)	
General and administrative	$ 520	$ 554
Research and development	261	369
	$ 781	$ 923

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GenVec uses the Black-Scholes option pricing model to value stock options. The estimated fair value of employee stock options granted during the 12 months ended December 31, 2016 and 2015 was calculated using the Black-Scholes model with the following weighted-average assumptions:

	2016		2015	
Range of risk-free interest rate	1.41%	1.51%	1.42%	1.87%
Expected dividend yield		0.00%		0.00%
Range of expected volatility	101.66%	114.88%	103.44%	103.64
Expected life (years)		6.48		6.30

The risk-free interest rate assumptions are based upon various U.S. Treasury rates as of the date of the grants. The dividend yield is based on the assumption that GenVec does not expect to declare a dividend over the life of the options.

The volatility assumptions for 2016 and 2015 are based on the volatility for the most recent one-year period as well as an estimate of the volatility over the expected life of 6.48 years and 6.30 years, respectively. The expected life of employee stock options represents the weighted average combining the actual life of options that have already been exercised or cancelled with the expected life of all outstanding options. The expected life of outstanding options is calculated assuming the options will be exercised at the midpoint between the applicable vesting date and the full contractual term.

The Company estimates forfeiture rates at the time of grant and revises these estimates, if necessary, in subsequent periods if actual forfeitures differ from the estimates. Forfeitures are estimated based on the demographics of current option holders and standard probabilities of employee turnover. The Company used 14.9% and 18.3% forfeiture rates for the options granted in 2016 and 2015, respectively.

The weighted-average fair value of the options granted for the years ended December 31, 2016 and 2015 are $4.32 and $22.75, respectively. GenVec does not record tax-related effects on stock-based compensation given GenVec s historical and anticipated operating experience and offsetting changes in GenVec s valuation allowance which fully reserves against potential deferred tax assets.

Stock Options

The activity of the plans from January 1, 2015 to December 31, 2016 is as follows:

	Number of Shares Under Option	Weighted Average Exercise Price	Weighted Average Contractual Life (years)	Aggregate Intrinsic Value
	(in thousands, except per share data)			
Outstanding at January 1, 2015	167	47.43		
Granted	57	27.92		
Cancelled	(1)	182.75		

Outstanding at December 31, 2015	223	41.49		
Granted	71	5.28		
Cancelled	(5)	136.34		
Stock options outstanding at December 31, 2016	289	$ 30.95	6.9	$
Vested or expected to vest at December 31, 2016	274	$ 31.95	6.8	$
Exercisable at December 31, 2016	184	$ 40.98	5.8	$

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Unrecognized stock-based compensation expense related to stock options was approximately $0.1 million as of December 31, 2016. This amount is expected to be expensed over a weighted average period of 2.1 years. There were no stock options exercised during the years ended December 31, 2016 or 2015.

The following table summarizes information about GenVec s stock options outstanding at December 31, 2016:

	Outstanding			Exercisable	
Range of exercise prices	**Number of shares**	**Weighted average remaining contractual life**	**Weighted average exercise price**	**Number of shares**	**Weighted average exercise price**
	(number of shares in thousands)				
$0.00 $100.00	274	7.2	$ 21.65	169	$ 26.72
$100.01 $200.00	5	1.3	171.39	5	171.39
$200.01 $300.00	8	2.0	235.74	8	235.74
$300.01 $410.00	2	0.3	410.00	2	410.00
	289	6.9 years	$ 30.95	184	$ 40.98

As of December 31, 2016 options covering 183,647 shares were exercisable at $3.80 to $410.00 per share (average $40.98 per share) and there were 99,379 shares available for future issuance under the 2015 Plan.

(c) WARRANTS

On May 10, 2016, in a registered offering pursuant to the 2014 shelf registration statement (as defined in Note 6 below), GenVec sold 547,195 shares of GenVec s common stock (the Shares), at a purchase price of $9.1375 per share. In a private placement concurrent with the sale of the Shares, GenVec sold to the investors who purchased the Shares warrants to purchase 410,396.8 shares of common stock (the Warrants). The Shares and the Warrants were sold pursuant to a securities purchase agreement for aggregate gross proceeds of $5.0 million. Subject to certain ownership limitations, the Warrants became exercisable on November 10, 2016 at an exercise price equal to $8.30 per share of common stock, subject to adjustments as provided under the terms of the Warrants. The Warrants are exercisable until November 10, 2022.

In connection with the offering of the Shares and Warrants, GenVec issued to the placement agent and its designees unregistered warrants to purchase an aggregate of 38,303.7 shares of GenVec s common stock (the Placement Agent Warrants). The Placement Agent Warrants have substantially the same terms as the Warrants, except that the Placement Agent Warrants will expire on May 4, 2021 and have an exercise price equal to $11.422 per share of common stock.

A summary of the allocation of the proceeds of the offering is shown below:

	(in thousands)
Allocated to warrant liabilities	$ 2,511

Allocated to common stock and additional paid-in capital		2,489
Total allocated gross proceeds	$	5,000

The closing costs of $699,861 included the 38,303.7 Placement Agent Warrants valued at $202,862, and $496,999 for placement agent and other fees. Based upon the estimated fair value of the Shares and Warrants in units, the Company allocated $250,279 to financing expense and $449,582 as stock issuance costs.

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The table below sets forth the Warrants and Placement Agent Warrants as of December 31, 2016:

Offering Date	Outstanding Warrants	Exercise Price	Expiration Date	Status
May 2016	410,396.8	$ 8.30	11/10/2022	Exercisable
May 2016	38,303.7	$ 11.4220	5/4/2021	Exercisable
	448,700.5			

The Warrants contain a provision for liquidated damages in the event that there is a failure to deliver shares of common stock within three days of receiving a notice to exercise. As a result of this liquidated damages provision, the Warrants require liability classification in accordance with ASC 480 and are recorded at fair value. The fair value of the Warrants has been determined under a Black-Scholes pricing model; assuming a weighted average 5.73 year remaining life for the warrants, 2.00% risk-free interest rate, a 113.14% expected volatility and no dividend yield, the weighted average fair value of warrant liability as of December 31, 2016 is $6.56. Changes in fair value are recorded against operations in the reporting period in which they occur; increases or decreases in fair value are recorded to other income/(expense) as a change in fair value of warrant liabilities.

On February 1, 2015, 42,000 warrants with an exercise price of $275.00 issued in February 2009 expired. There were no warrants exercised during the years ended December 31, 2016 or 2015, respectively.

(9) INCOME TAXES

For the years ended December 31, 2016 and 2015 there is no provision for income taxes included in the statements of operations. GenVec has incurred operating losses, but have not recorded an income tax benefit for 2016 and 2015 as GenVec has recorded a valuation allowance against GenVec s net operating losses and other net deferred tax assets due to uncertainties related to the ability to realize these tax assets. A reconciliation of tax credits computed at the statutory federal tax rate (34%) on operating loss before income taxes to the actual income tax expense is as follows:

	2016	2015
	(in thousands)	
Tax provision computed at the statutory rate	$ (1,968)	$ (2,225)
State income taxes, net of federal income tax provision	(315)	(356)
Book (income) / expenses not taxable or deductible	(548)	3
Nondeductible compensation expense	153	151
Credits and Other	11	(386)
Change in valuation allowance for deferred tax assets	2,667	2,813
Income tax expense	$	$

The Company provides for the recognition of deferred tax assets if realization of such assets is more likely than not. Based upon the weight of available evidence, which includes GenVec s historical operating performance and the reported accumulated net losses to date, GenVec has provided a full valuation allowance against GenVec s deferred tax assets.

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Deferred income taxes reflect the net effects of net operating loss carryforwards and the temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of GenVec s deferred tax assets are as follows:

	2016	2015
	(in thousands)	
Net operating loss carryforwards	$ 104,742	$ 102,229
Research and experimentation tax credit	14,568	14,568
Property and equipment, principally due to differences in depreciation	(73)	(78)
Deferred compensation expense	1,218	1,063
Other	157	153
Total deferred tax assets	120,612	117,935
Valuation allowance	(120,612)	(117,935)
Net deferred tax assets	$	$

The difference reflected in the change in the valuation allowance as it appears in the analysis of deferred tax assets in comparison to the reconciliation of income tax expense is the result of the tax impact of other comprehensive income.

At December 31, 2016, GenVec has net operating loss carryforwards of approximately $266 million for federal income tax purposes, which expire beginning on 2018 through 2036. GenVec has research and experimentation tax credit carryforwards of $14.6 million at December 31, 2016 which will expire beginning in 2018 through 2030.

GenVec s NOL and tax credit carryforwards may be significantly limited under Section 382 of the Internal Revenue Code (the IRC). NOL and tax credit carryforwards are limited under Section 382 when there is a significant ownership change as defined in the IRC. The amount of U.S. loss carryforward that can be used by the Company each year is limited due to changes in the Company s ownership that occurred in 2003. Thus a portion of the Company s loss carryforward may expire unused.

The limitation imposed by Section 382 would place an annual limitation on the amount of NOL and tax credit carryforwards that can be utilized. When GenVec completes the necessary studies, the amount of NOL carryforwards available may be reduced significantly. However, since the valuation allowance fully reserves for all available carryforwards, the effect of the reduction would be offset by a reduction in the valuation allowance. Thus, the resolution of this matter would have no effect on the reported assets, liabilities, revenues, and expenses for the periods presented.

As discussed in Note 2, GenVec recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. At December 31, 2016 and 2015, GenVec had no gross unrecognized tax benefits. GenVec does not expect any significant changes in unrecognized tax benefits over the next 12 months. In addition, GenVec did not recognize any interest or penalties related to uncertain tax positions at December 31, 2016 and 2015.

GenVec files U.S. and state income tax returns in jurisdictions with varying statutes of limitations. The 2013 through 2016 tax years generally remain subject to examination by federal and most state tax authorities. In addition, GenVec would remain open to examination for earlier years if GenVec were to utilize net operating losses or tax credit carryforwards that originated prior to 2013.

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(10) QUARTERLY RESULTS (UNAUDITED)

GenVec s unaudited quarterly information is as follows:

2016 (unaudited)	Q1	Q2	Q3	Q4
	(in thousands, except per share data)			
Revenue	$ 290	$ 26	$ 173	$ 22
Operating loss	$ (1,859)	$ (1,714)	$ (1,530)	$ (2,111)
Net loss	$ (1,860)	$ (1,195)	$ (1,207)	$ (1,525)
Basic and diluted net loss per share	$ (1.08)	$ (0.59)	$ (0.53)	$ (0.67)

2015 (unaudited)	Q1	Q2	Q3	Q4
	(in thousands, except per share data)			
Revenue	$ 405	$ 127	$ 193	$ 160
Operating loss	$ (1,536)	$ (1,875)	$ (1,511)	$ (1,645)
Net loss	$ (1,529)	$ (1,869)	$ (1,505)	$ (1,642)
Basic and diluted net loss per share	$ (0.90)	$ (1.10)	$ (0.90)	$ (1.00)

The net income/(loss) per share was calculated for each three-month period on a stand-alone basis. As a result, the sum of the net income/ (loss) per share for the four quarters may not equal the loss per share for the respective 12-month period.

Included in the fourth quarter of 2016 is an increase to GenVec s 2016 incentive compensation expense of approximately $341,000.

(11) SUBSEQUENT EVENTS

On January 24, 2017, the Company, Intrexon and Merger Sub entered into the Merger Agreement, pursuant to which, and on the terms and subject to the conditions set forth in the Merger Agreement, Merger Sub will merge with and into the Company. The Company will survive the Merger as a wholly owned subsidiary of Intrexon.

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger (the Effective Time), each share of GenVec s common stock (the GenVec Shares) issued and outstanding immediately prior to the Effective Time (other than shares held directly by Intrexon or Merger Sub and shares owned by GenVec s stockholders who have properly exercised their appraisal rights under Delaware law) will be converted into the right to receive merger consideration consisting of (i) 0.297 validly issued, fully paid and non-assessable shares of Intrexon s common stock (and, if applicable, cash in lieu of fractional shares of Intrexon common stock), *plus* (ii) one contingent payment right, in each case, subject to any withholding of taxes required by applicable law (the Merger Consideration). Each contingent payment right will represent the right to receive an amount equal to (a) fifty percent (50%) of (x) all milestone payments, if any, actually received by GenVec or GenVec s successor or any of GenVec s or GenVec s successor s affiliates (including Intrexon) from Novartis for any milestones that are achieved or occur during the period ending 36 months after the closing date and (y) all royalty payments, if any, actually received by GenVec or GenVec s successor or any of GenVec s or GenVec s successor s affiliates (including Intrexon) from Novartis during the period ending 36 months after the closing date, in each case, under the Research Collaboration and License Agreement, dated January 13, 2010, as amended, between Novartis and GenVec *divided by* (b) all then-outstanding contingent payment rights (which may include contingent payment rights issued upon exercise of certain warrants),

subject to any withholding of taxes required by applicable law. Immediately prior to the public announcement of the Merger, the exchange ratio for the stock portion of the Merger Consideration represented an implied value of $7.00 per GenVec Share based on Intrexon s five-day volume weighted average price as of January 23, 2017.

The Merger Agreement may be terminated by mutual written consent of Intrexon and us, and by either party if (i) the requisite stockholder approval has not been obtained at the meeting of GenVec s stockholders, (ii) any

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governmental order permanently restraining, enjoining or prohibiting the Merger becomes final and non-appealable, or any law is in effect that prevents or makes illegal the Merger, (iii) the Merger is not consummated by July 24, 2017 (the Outside Date), or (iv) the other party breaches any of its representations, warranties, covenants or agreements in the Merger Agreement such that conditions to close the Merger that relate to compliance with representations and warranties and other obligations under the Merger Agreement are not reasonably capable of being satisfied while the breach is continuing and the breach is not cured (or is not capable of cure) within certain time frames specified in the Merger Agreement (a Specified Breach). In addition, Intrexon may terminate the Merger Agreement if GenVec s board of directors effects a change in its recommendation with respect to the Merger (a Change of Board Recommendation), and GenVec may terminate the Merger Agreement if GenVec s board of directors effects a Change of Board Recommendation in order to accept a superior proposal and substantially concurrently with termination GenVec enters into a letter of intent or agreement with respect to such superior proposal.

If the Merger Agreement is terminated by either party as a result of a Change of Board Recommendation, then GenVec must pay Intrexon a termination fee equal to $550,000 (the Termination Fee). The Termination Fee is also payable if the Merger Agreement is terminated by (i) either party as a result of the Merger not being consummated by the Outside Date or (ii) Intrexon based solely on a Specified Breach by GenVec of any covenant or agreement in the Merger Agreement and, in either case, an acquisition proposal has been announced publicly or made to GenVec after the date of the Merger Agreement but prior to the termination thereof, and GenVec enters into a letter of intent or agreement in respect of, or consummate, an acquisition proposal within 12 months of termination of the Merger Agreement. GenVec will also be obligated to pay Intrexon an expense reimbursement of up to $400,000 (the Expense Reimbursement) if the Merger Agreement is terminated by Intrexon because of a Specified Breach by GenVec of any covenant or agreement in the Merger Agreement and within six (6) months after the date of such termination GenVec enters into a definitive agreement with a third party in respect of any acquisition proposal. In addition, if GenVec willfully breaches GenVec s non-solicitation covenants, then in circumstances in which an Expense Reimbursement is paid, GenVec will also be obligated to pay Intrexon an additional $200,000 (the Additional Expense Amount). If GenVec pays Intrexon the Expense Reimbursement, including the Additional Expense Amount to the extent applicable, and the Termination Fee thereafter becomes payable, then the Termination Fee will be reduced by the amount of the previously paid Expense Reimbursement and the Additional Expense Amount, as applicable.

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Annex A

AGREEMENT AND PLAN OF MERGER

by and among

INTREXON CORPORATION,

INTREXON GV HOLDING, INC.

and

GENVEC, INC.

Dated as of January 24, 2017

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AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER, dated as of January 24, 2017 (this Agreement), is made by and among Intrexon Corporation, a Virginia corporation (Parent), Intrexon GV Holding, Inc., a Delaware corporation and a wholly-owned subsidiary of Parent (Merger Sub), and GenVec, Inc., a Delaware corporation (the Company). All capitalized terms used in this Agreement shall have the meanings assigned to such terms in Section 8.4 or as otherwise defined elsewhere in this Agreement unless the context clearly indicates otherwise.

RECITALS

A. The Company, Parent and Merger Sub desire to effect the merger of Merger Sub with and into the Company, with the Company continuing as the surviving corporation (the Merger) on the terms and subject to the conditions set forth in this Agreement and in accordance with the General Corporation Law of the State of Delaware, as amended (the DGCL).

B. The Board of Directors of Merger Sub has, upon the terms and subject to the conditions set forth herein, approved and declared it advisable for Merger Sub to enter into this Agreement and consummate the transactions contemplated hereby, including the Merger.

C. The Board of Directors of Parent has, upon the terms and subject to the conditions set forth herein, approved this Agreement and the transactions contemplated hereby, including the Merger, and Parent, as the sole stockholder of Merger Sub, has duly executed and delivered to Merger Sub and the Company a written consent, to be effective by its terms immediately following execution of this Agreement, adopting this Agreement.

D. The Board of Directors of the Company (the Company Board) has, upon the terms and subject to the conditions set forth herein, (i) approved and declared advisable this Agreement and the transactions contemplated hereby, including the Merger, (ii) determined that the terms of this Agreement and the Merger are fair to, and in the best interests of, the Company and its stockholders, (iii) directed that this Agreement be submitted to the stockholders of the Company at the Company Meeting, and (iv) recommended that the Company s stockholders adopt this Agreement.

E. For federal income tax purposes, Parent, Merger Sub and the Company intend, by executing this Agreement, to adopt a plan of reorganization and to cause the Merger to qualify as a reorganization within the meaning of Section 368 of the Code, and the Treasury Regulations promulgated thereunder.

F. Parent, Merger Sub and the Company desire to make certain representations, warranties, covenants and agreements in connection with the Merger and also to prescribe various conditions to the Merger.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing, and the covenants, premises, representations and warranties and agreements contained in this Agreement and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, the parties to this Agreement agree as follows:

ARTICLE 1

THE MERGER

1.1 The Merger.

(a) Upon the terms and subject to the conditions set forth in this Agreement, and in accordance with the DGCL, at the Effective Time, Merger Subshall be merged with and into the Company. As a result of the Merger,

the separate corporate existence of Merger Subshall cease, and the Company shall continue as the surviving corporation of the Merger (the Surviving Corporation). The Merger shall be effected pursuant to the DGCL and shall have the effects set forth in this Agreement and the applicable provisions of the DGCL. Without limiting the generality of the foregoing, at the Effective Time, all of the property, rights, privileges, immunities, powers and franchises of the Company and Merger Subshall vest in the Surviving Corporation, and all of the debts, liabilities and duties of the Company and Merger Subshall become the debts, liabilities and duties of the Surviving Corporation. The Merger and other transactions contemplated by this Agreement are referred to herein as the Transactions .

(b) At the Effective Time, by virtue of the Merger and without the necessity of further action by the Company or any other Person, the certificate of incorporation of the Company shall be amended so as to read in its entirety in the form set forth as Exhibit A hereto, and as so amended shall be the certificate of incorporation of the Surviving Corporation until thereafter changed or amended as provided therein or by applicable Law. In addition, the Company shall take all necessary action such that, at the Effective Time, the bylaws of the Company shall be amended so as to read in its entirety in the form set forth as Exhibit B hereto, and as so amended shall be the bylaws of the Surviving Corporation until thereafter changed or amended as provided therein or by applicable Law.

(c) At the Effective Time, by virtue of the Merger and without the necessity of further action by the Company or any other person, the directors of Merger Sub immediately prior to the Effective Time or such other individuals designated by Parent as of the Effective Time shall become the directors of the Surviving Corporation, each to hold office, from and after the Effective Time, in accordance with the certificate of incorporation and bylaws of the Surviving Corporation until their respective successors shall have been duly elected, designated or qualified, or until their earlier death, resignation or removal in accordance with the certificate of incorporation and bylaws of the Surviving Corporation. The officers of Merger Sub immediately prior to the Effective Time or such other individuals designated by Parent as of the Effective Time shall become the officers of the Surviving Corporation, each to hold office in accordance with the certificate of incorporation and bylaws of the Surviving Corporation until their respective successors shall have been duly elected, designated or qualified, or until their earlier death, resignation or removal in accordance with the certificate of incorporation and bylaws of the Surviving Corporation.

(d) If, at any time after the Effective Time, the Surviving Corporation shall determine, in its sole discretion, or shall be advised, that any deeds, bills of sale, instruments of conveyance, assignments, assurances or any other actions or things are necessary or desirable to vest, perfect or confirm of record or otherwise in the Surviving Corporation its right, title or interest in, to or under any of the rights, properties or assets of either of the Company or Merger Subacquired or to be acquired by the Surviving Corporation as a result of, or in connection with, the Merger or otherwise to carry out this Agreement, then the officers and directors of the Surviving Corporation shall be authorized to execute and deliver, in the name and on behalf of either the Company or Merger Sub, all such deeds, bills of sale, instruments of conveyance, assignments and assurances and to take and do, in the name and on behalf of each of such corporations or otherwise, all such other actions and things as may be necessary or desirable to vest, perfect or confirm any and all right, title or interest in, to and under such rights, properties or assets in the Surviving Corporation or otherwise to carry out this Agreement.

1.2 Closing and Effective Time of the Merger. The closing of the Merger (the Closing) will take place at 8:00 a.m., local time, on the third Business Day after satisfaction or waiver of all of the conditions set forth in Article 6 (other than those conditions that by their nature are to be satisfied at the Closing, but subject to the fulfillment or waiver of those conditions at the Closing), at the offices of Thompson Hine LLP located at Two Alliance Center, 3560 Lenox Road, Suite 1600, Atlanta, Georgia, unless another time, date or place is agreed to in writing by the parties hereto. The date on which the Closing occurs pursuant to this Section 1.2 is referred to as the Closing Date . On the Closing Date, or on such other date as Parent and the Company may agree to, the Company shall cause a certificate of merger (the Certificate of Merger) to be executed and filed with the Secretary of State of the State of Delaware in accordance with

the relevant provisions of the DGCL and shall

make all other filings required under the DGCL. The Merger shall become effective at the time the Certificate of Merger shall have been duly filed with the Secretary of State of the State of Delaware, or such later date and/or time as is agreed upon by the parties and specified in the Certificate of Merger (such date and time hereinafter referred to as the Effective Time).

ARTICLE 2

CONVERSION OF SECURITIES IN THE MERGER

2.1 Conversion of Securities. At the Effective Time, by virtue of the Merger and without any action on the part of Parent, Merger Sub, the Company or the holders of any of the following securities:

(a) Conversion of Company Shares. Each share of common stock, par value $0.001 per share, of the Company (each, a Company Share and collectively, the Company Shares) issued and outstanding immediately prior to the Effective Time, other than Company Shares to be cancelled or converted pursuant to Sections 2.1(b) or 2.1(c) or Dissenting Shares, shall be automatically converted into and thereafter represent the right to receive (i) 0.297 (as may be adjusted pursuant to Section 2.7, the Exchange Ratio) validly issued, fully paid and non-assessable shares of Parent common stock, no par value per share (Parent Common Stock), and cash in lieu of fractional shares of Parent Common Stock as contemplated by Section 2.8 (the Stock Consideration) *plus* (ii) one Contingent Payment Right (a CPR), which shall represent the right to receive the CPR Payment Amount (as such term is defined in the Contingent Payment Rights Agreement), if any, at the times provided for in the Contingent Payment Rights Agreement, without interest (the Stock Consideration plus one CPR is collectively referred to herein as the Merger Consideration), subject to any withholding of Taxes required by applicable Law, upon surrender of the Certificates or Book-Entry Company Shares in accordance with Section 2.2. As of the Effective Time, all such Company Shares shall no longer be outstanding and shall automatically be cancelled and retired and shall cease to exist, and shall thereafter represent only the right to receive the Merger Consideration to be paid in accordance with Section 2.2.

(b) Cancellation of Treasury Shares and Parent-Owned Shares. Each Company Share held by the Company as treasury stock or held directly by Parent or Merger Sub, in each case, immediately prior to the Effective Time, shall automatically be cancelled and retired and shall cease to exist, and no consideration or payment shall be delivered in exchange therefor or in respect thereof.

(c) Merger Sub Equity Interests. All outstanding Equity Interests of Merger Sub held immediately prior to the Effective Time shall be converted into and become (in the aggregate) 100 shares of newly and validly issued, fully paid and non-assessable shares of common stock of the Surviving Corporation.

2.2 Payment for Securities; Surrender of Certificates.

(a) Exchange Agent. At or prior to the Effective Time, Parent shall designate a reputable bank or trust company to act as the paying and exchange agent (the identity and terms of designation and appointment of which shall be reasonably acceptable to the Company) for purposes of delivering or causing to be delivered to each holder of Company Shares the Stock Consideration that such holder shall become entitled to receive with respect to such holder s Company Shares pursuant to the Merger (the Exchange Agent). Parent shall pay, or cause to be paid, the fees and expenses of the Exchange Agent. At or prior to the Effective Time, Parent shall deposit, or cause to be deposited, with the Exchange Agent (i) evidence of a number of shares of Parent Common Stock in book-entry form equal to the Stock Consideration and (ii) cash sufficient to make payments in lieu of any fractional shares of Parent Common Stock pursuant to Section 2.8 (such evidence of book-entry shares of Parent Common Stock and cash deposited with the Exchange Agent, collectively, the Exchange Fund), to which holders of Company Shares shall be entitled at the

Effective Time pursuant to this Agreement. In the event the cash portion of the Exchange Fund shall be insufficient to make cash payments in lieu of any fractional shares of Parent Common Stock, Parent shall promptly deposit, or cause to be deposited, with the Exchange

Agent such additional funds to ensure that the Exchange Agent has sufficient funds to make such payments. In addition, Parent shall deposit or cause to be deposited with the Exchange Agent, as necessary from time to time after the Effective Time, any dividends or other distributions, if any, to which the holders of Company Shares may be entitled pursuant to Section 2.9, with both a record and payment date after the Effective Time and prior to the surrender of the Company Shares in exchange for such Parent Common Stock. If requested by Parent, the cash portion of the Exchange Fund shall be invested by the Exchange Agent as directed by Parent, pending payment thereof by the Exchange Agent to the holders of the Company Shares; provided, however, that any such investments shall be in obligations of, or guaranteed by, the United States government or rated A-1 or P-1 or better by Moody s Investor Service, Inc. or Standard & Poor s Corporation, respectively. Earnings from such investments shall be the sole and exclusive property of the Surviving Corporation, and no part of such earnings shall accrue to the benefit of holders of Company Shares. Any losses with respect to such investments shall have no effect upon amounts payable or other consideration due to holders of Company Shares or any other Person hereunder.

(b) Procedures for Surrender.

(i) *Certificates*. As soon as practicable after the Effective Time (and in no event later than three (3) Business Days after the Effective Time), the Surviving Corporation shall cause the Exchange Agent to mail to each Person that was, immediately prior to the Effective Time, a holder of record of Company Shares represented by certificates (the Certificates), which Company Shares were converted into the right to receive the Merger Consideration at the Effective Time pursuant to this Agreement: (A) a letter of transmittal, which shall specify that delivery shall be effected, and risk of loss and title to the Certificates shall pass, only upon delivery of the Certificates to the Exchange Agent, shall include any certifications Parent may reasonably request relating to any withholding obligations of Parent under the Code or other applicable Tax law, and shall otherwise be in such form as Parent and the Exchange Agent shall reasonably agree; and (B) instructions for effecting the surrender of the Certificates (or affidavits of loss in lieu of the Certificates as provided in Section 2.2(e)) in exchange for payment of the Merger Consideration. Upon surrender of a Certificate (or affidavit of loss in lieu of the Certificate as provided in Section 2.2(e)) to the Exchange Agent or to such other agent or agents as may be appointed by Parent, together with delivery of a letter of transmittal, duly executed and in proper form, with respect to such Certificates, and such other documents as may be reasonably required pursuant to such instructions, the holder of such Certificates shall be entitled to receive the Merger Consideration for each Company Share formerly represented by such Certificates (without interest and after giving effect to any required Tax withholdings as provided in Section 2.6), and any Certificate so surrendered shall forthwith be cancelled. The Parent Common Stock constituting part of the Merger Consideration to be delivered in respect of Company Shares formerly represented by such Certificates shall be in uncertificated book-entry form, unless a physical certificate is requested by a holder of such Company Shares formerly represented by such Certificates or is otherwise required under applicable Law. If payment of the Merger Consideration is to be made to a Person other than the Person in whose name any surrendered Certificate is registered, it shall be a condition precedent of payment that the Certificate so surrendered shall be properly endorsed or shall be otherwise in proper form for transfer, and the Person requesting such payment shall have paid any transfer and other similar Taxes required by reason of the payment of the Merger Consideration to a Person other than the registered holder of the Certificate so surrendered and shall have established to the satisfaction of the Surviving Corporation that such Taxes either have been paid or are not required to be paid. No interest will be paid or accrued on any amount payable upon due surrender of the Certificates. Until surrendered as contemplated hereby, each Certificate shall be deemed at any time after the Effective Time to represent only the right to receive the Merger Consideration as contemplated by this Agreement, except for Certificates representing Company Shares that are Dissenting Shares, which shall be deemed to represent the right to receive payment of the fair value of such Company Shares in accordance with and to the extent provided by Section 262 of the DGCL. Parent shall, at or prior to the Effective Time, duly authorize, execute, and the deliver the Contingent Payment Rights Agreement.

(ii) *Book-Entry Company Shares*. Notwithstanding anything to the contrary contained in this Agreement, no holder of non-certificated Company Shares represented by book-entry (Book-Entry Company

Shares) shall be required to deliver a Certificate or, in the case of holders of Book-Entry Company Shares held through The Depository Trust Company, an executed letter of transmittal to the Exchange Agent to receive the Merger Consideration that such holder is entitled to receive pursuant to Section 2.1(a). In lieu thereof, each holder of record of one or more Book-Entry Company Shares held through The Depository Trust Company whose Company Shares were converted into the right to receive the Merger Consideration at the Effective Time pursuant to this Agreement shall, upon receipt of an agent s message by the Exchange Agent (or such other evidence of transfer or surrender as the Exchange Agent may reasonably request), be entitled to receive, and Parent shall cause the Exchange Agent to pay and deliver to The Depository Trust Company or its nominee as promptly as practicable after the Effective Time, the Merger Consideration in respect of each such Book-Entry Company Share pursuant to the provisions of this Article 2 (after giving effect to any required Tax withholdings as provided in Section 2.6), and such Book-Entry Company Shares of such holder shall be cancelled. As soon as practicable after the Effective Time (and in no event later than three (3) Business Days after the Effective Time), the Surviving Corporation shall cause the Exchange Agent to mail to each Person that was, immediately prior to the Effective Time, a holder of record of Book-Entry Company Shares not held through The Depository Trust Company: (A) a letter of transmittal, which shall include any certifications Parent may reasonably request relating to any withholding obligations of Parent under the Code or other applicable Tax law and be in such form as Parent and the Exchange Agent shall reasonably agree; and (B) instructions for returning such letter of transmittal in exchange for the Merger Consideration. Upon delivery of such letter of transmittal, in accordance with the terms of such letter of transmittal, duly executed, the holder of such Book-Entry Company Shares shall be entitled to receive in exchange therefor the Merger Consideration in respect of each such Book-Entry Company Share pursuant to the provisions of this Article 2 (without interest and after giving effect to any required Tax withholdings as provided in Section 2.6), and such Book-Entry Company Shares shall at the Effective Time be cancelled. The Parent Common Stock constituting part of the Merger Consideration to be delivered in respect of any Book-Entry Company Shares shall be in uncertificated book-entry form, unless a physical certificate is requested by a holder of Book-Entry Company Shares or is otherwise required under applicable Law. Payment and delivery of the Merger Consideration with respect to Book-Entry Company Shares shall only be made to the Person in whose name such Book-Entry Company Shares are registered. No interest will be paid or accrued on any amount payable upon due surrender of Book-Entry Company Shares. Until paid or surrendered as contemplated hereby, each Book-Entry Company Share shall be deemed at any time after the Effective Time to represent only the right to receive the Merger Consideration as contemplated by this Agreement, except for Book-Entry Company Shares representing Company Shares that are Dissenting Shares, which shall be deemed to represent the right to receive payment of the fair value of such Company Shares in accordance with and to the extent provided by Section 262 of the DGCL.

(c) Transfer Books; No Further Ownership Rights in Shares. At the Effective Time, the stock transfer books of the Company shall be closed and thereafter there shall be no further registration of transfers of Company Shares on the records of the Company. From and after the Effective Time, the holders of Certificates and Book-Entry Company Shares that represented ownership of Company Shares outstanding immediately prior to the Effective Time shall cease to have any rights with respect to such Company Shares except as otherwise provided for herein or by applicable Law. If, after the Effective Time, Certificates are presented to the Surviving Corporation for any reason, they shall be cancelled and exchanged as provided in this Agreement.

(d) Termination of Fund; Abandoned Property; No Liability. Any portion of the funds in Exchange Fund (including any interest received with respect thereto) made available to the Exchange Agent that remains unclaimed by the holders of Certificates or Book-Entry Company Shares on the six (6) month anniversary of the Effective Time will be returned to the Surviving Corporation or an affiliate thereof designated by the Surviving Corporation, upon demand, and any such holder who has not tendered its Certificates or Book-Entry Company Shares for the Merger Consideration in accordance with Section 2.2(b) prior to such time shall thereafter look only to the Surviving Corporation (subject to abandoned property, escheat or other similar Laws) for delivery of the Merger Consideration, without interest and subject to any withholding of Taxes required by applicable Law, in respect of such holder s

surrender of their Certificates or Book-Entry Company Shares and compliance with the procedures in Section 2.2(b). Any Merger Consideration remaining unclaimed by the holders of Certificates

or Book-Entry Company Shares immediately prior to such time as such amounts would otherwise escheat to, or become property of, any Governmental Entity will, to the extent permitted by applicable Law, become the property of the Surviving Corporation or an affiliate thereof designated by the Surviving Corporation, free and clear of any claim or interest of any Person previously entitled thereto. Notwithstanding the foregoing, none of Parent, Merger Sub, the Surviving Corporation, the Exchange Agent or their respective affiliates will be liable to any holder of a Certificate or Book-Entry Company Shares for Merger Consideration delivered to a public official pursuant to any applicable abandoned property, escheat or similar Law. Any portion of the Merger Consideration made available to the Exchange Agent pursuant to Section 2.2(a), to pay for Company Shares for which appraisal rights have been perfected shall be returned to the Surviving Corporation, upon demand.

(e) Lost, Stolen or Destroyed Certificates. In the event that any Certificates shall have been lost, stolen or destroyed, the Exchange Agent shall issue in exchange for such lost, stolen or destroyed Certificates, upon the making of an affidavit of that fact by the person claiming such Certificates to be lost, stolen or destroyed, the Merger Consideration payable in respect thereof pursuant to Section 2.1(a). Parent may, in its reasonable discretion and as a condition precedent to the payment of such Merger Consideration, require the owners of such lost, stolen or destroyed Certificates to deliver a bond in a reasonable sum as it may reasonably direct as indemnity against any claim that may be made against Parent, Merger Sub, the Surviving Corporation or the Exchange Agent with respect to the Certificates alleged to have been lost, stolen or destroyed.

2.3 Dissenting Shares. Notwithstanding anything in this Agreement to the contrary (but subject to the provisions of this Section 2.3), Company Shares outstanding immediately prior to the Effective Time and held by a holder who did not vote in favor of the adoption of this Agreement, and who is entitled to demand and has properly demanded appraisal for such Company Shares in accordance with, and who complies in all respects with, Section 262 of the DGCL (such Company Shares, the Dissenting Shares) shall not be converted into the right to receive the Merger Consideration. At the Effective Time, all Dissenting Shares shall no longer be outstanding and shall automatically be cancelled and cease to exist, and the holders of Dissenting Shares shall cease to have any rights with respect thereto, except the rights granted to them under Section 262 of the DGCL. If any such holder fails to perfect or otherwise waives, withdraws or loses his right to appraisal under Section 262 of the DGCL or other applicable Law, then the right of such holder to be paid the fair value of such Dissenting Shares shall cease and such Dissenting Shares shall thereupon be deemed to have been converted, as of the Effective Time, into and shall be exchangeable solely for the right to receive the Merger Consideration, without interest and subject to any withholding of Taxes required by applicable Law in accordance with this Article 2 and shall not thereafter be deemed to be Dissenting Shares. The Company shall give Parent prompt notice of any demands received by the Company for appraisal of Company Shares and any other instruments served pursuant to the DGCL and received by the Company relating to rights to be paid the fair value of Dissenting Shares, and Parent shall have the right to participate in and control all negotiations and proceedings with respect to such demands. Prior to the Effective Time, the Company shall not, except with the prior written consent of Parent, make any payment with respect to, or settle or compromise, any such demands, or approve any withdrawal of any such demands, or agree to do any of the foregoing, except to the extent required by applicable Law.

2.4 Treatment of Options.

(a) Treatment of Options. Prior to the Effective Time, contingent on, and subject to the Closing, each option to purchase Company Shares (each a Company Option) shall fully vest and become immediately exercisable for a period of fifteen (15) days prior to the Effective Time (the Exercise Window), and each holder of such Company Options shall be permitted to exercise such Company Options during the Exercise Window, including exercise on a cashless basis (meaning that the Company shall withhold the lowest number of Company Shares issuable upon exercise of the Company Option sufficient to cover the applicable exercise price and any Taxes required to be withheld, with the

Company providing a cash payment in lieu of any excess fractional shares that would not be issued as a result of such withholding). Each Company Share resulting from exercise of a Company Option during the Exercise Window shall be treated as a Company Share issued and

outstanding immediately prior to the Effective Time and shall be eligible to receive the Merger Consideration, payable in accordance with Section 2.1 and Section 2.2. At the Effective Time, each then-outstanding, unexercised Company Option shall automatically and without any required action on the part of the holder thereof, be cancelled for no consideration.

(b) Termination of Company Equity Plans. As of the Effective Time, the GenVec, Inc. 2002 Stock Incentive Plan, the GenVec, Inc. 2011 Omnibus Incentive Plan, and the GenVec, Inc. 2015 Omnibus Incentive Plan (each, a Company Equity Plan and, collectively, the Company Equity Plans) shall be terminated and no further Company Shares, Company Options, Equity Interests or other rights with respect to Company Shares shall be granted thereunder.

(c) Board Actions. Prior to the Effective Time, the Company Board (or, if appropriate, any committee thereof) shall adopt appropriate resolutions and take such other actions as are reasonably necessary and appropriate (including using reasonable best efforts to obtain any required consents) to effect the transactions described in this Section 2.4.

2.5 Conversion of Company Warrants. At the Effective Time, each outstanding, unexpired and unexercised warrant to purchase Company Shares (each, a Company Warrant), whether or not then vested, shall be assumed by Parent and converted into a warrant to purchase upon exercise thereof (i) the number of shares of Parent Common Stock equal to the product of (x) the Exchange Ratio (as adjusted pursuant to Section 2.7) multiplied by (y) the number of Company Shares underlying such Company Warrant (with the product rounded up to the nearest whole share) *plus* (ii) one CPR for each Company Share underlying such Company Warrant. The exercise price for each such Company Warrant shall be adjusted to reflect an exercise price per share (rounded up to the nearest cent) equal to the exercise price for each Company Share subject to such Company Warrant as of immediately prior to the Effective Time divided by the Exchange Ratio. All references to the Company in such Company Warrant shall be deemed to refer to Parent, where appropriate. The other pre-existing terms of such Company Warrants shall continue to apply in accordance with their terms. Each Company Warrant assumed and converted pursuant to the terms of this Section 2.5 shall be referred to as a Parent Exchange Warrant. At or prior to the Effective Time, Parent shall reserve for future issuance a number of shares of Parent Common Stock that will be subject to Parent Exchange Warrants as a result of the actions contemplated by this Section 2.5.

2.6 Withholding Rights. The Company, Parent, Merger Sub, the Surviving Corporation and the Exchange Agent, as the case may be, shall be entitled to deduct and withhold from any amounts otherwise payable pursuant to this Agreement, such amounts as are required to be deducted and withheld with respect to the making of such payment under the Code, the Treasury Regulations or any other provision of applicable Law. Any amounts deducted or withheld from any such payment shall be remitted to the applicable Tax Authority and, when so remitted, shall be treated for all purposes of this Agreement as having been paid to the Person in respect of which such deduction or withholding was made.

2.7 Certain Adjustments. In the event that, between the date of this Agreement and the Effective Time, (i) any change in the outstanding Company Shares shall occur as a result of any stock split, reverse stock split, stock dividend (including any dividend or distribution of Equity Interests convertible into or exchangeable for Company Shares), recapitalization, reclassification, combination, exchange of shares or other similar event, or (ii) any reduction in the assets or property of (including Equity Interests held by) Parent or any of its Subsidiaries shall occur as a result of any direct or indirect distribution of such assets or property to the shareholders of Parent (including any spinoff of any Subsidiary of Parent), then, in each case (i) and (ii), the Exchange Ratio and the Merger Consideration shall be equitably adjusted to reflect such event and to provide to holders of Company Shares the same economic effect as contemplated by this Agreement prior to such event; provided that nothing in this Section 2.7 shall be deemed to permit or authorize the Company to take any such action or effect any such change that it is not otherwise authorized or permitted to take pursuant to this Agreement (including Section 5.1).

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2.8 Fractional Shares. No certificates or scrip representing fractional shares of Parent Common Stock shall be issued upon the conversion of Company Shares pursuant to Section 2.1(a) or Section 2.4(a), no dividend or distribution with respect to Parent Common Stock shall be payable on or with respect to any fractional share and such fractional share interests will not entitle the owner thereof to any rights of a stockholder of Parent. Notwithstanding any other provision of this Agreement, each holder of Company Shares that are converted pursuant to the Merger who would otherwise have been entitled to receive a fractional share of Parent Common Stock (after taking into account all Company Shares exchanged by such holder) shall receive, in lieu thereof, cash (without interest) in an amount equal to such fractional amount multiplied by the last reported sale price of Parent Common Stock on NYSE (as reported in The Wall Street Journal or, if not reported therein, in another authoritative source mutually selected by the Company and Parent) on the last complete trading day prior to the date of the Effective Time. The parties acknowledge that payment of cash in lieu of issuing fractional shares is solely for the purpose of avoiding the expense and inconvenience to Parent of issuing fractional shares and does not represent separately bargained-for consideration

2.9 Distributions with respect to Unsurrendered Shares. All shares of Parent Common Stock to be issued pursuant to the Merger shall be deemed issued and outstanding as of the Effective Time and whenever a dividend or other distribution is declared by Parent in respect of the Parent Common Stock, the record date for which is after the Effective Time, that declaration shall include dividends or other distributions in respect of all shares issuable pursuant to this Agreement. No dividends or other distributions in respect of the Parent Common Stock shall be paid to any holder of any unsurrendered Company Share until the Certificate (or affidavit of loss in lieu of the Certificate as provided in Section 2.2(e)) or Book-Entry Company Share is surrendered for exchange in accordance with Section 2.2. Subject to the effect of applicable Laws, following such surrender, there shall be issued or paid to the holder of record of the whole shares of Parent Common Stock issued in exchange for Company Shares in accordance with this Section 2.2, without interest: (a) at the time of such surrender, the dividends or other distributions with a record date after the Effective Time theretofore payable with respect to such whole shares of Parent Common Stock and not paid; and (b) at the appropriate payment date, the dividends or other distributions payable with respect to such whole shares of Parent Common Stock with a record date after the Effective Time but with a payment date subsequent to surrender.

ARTICLE 3

REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Except (a) as set forth in the disclosure schedule delivered by the Company to Parent and Merger Sub (the Company Disclosure Schedule) prior to the execution of this Agreement (with specific reference to the representations and warranties in this Article 3 to which the information in such schedule relates; provided, that, disclosure in the Company Disclosure Schedule as to a specific representation or warranty shall qualify any other sections of this Agreement to the extent (notwithstanding the absence of a specific cross reference) it is reasonably apparent on its face that such disclosure relates to such other sections), and (b) as disclosed in the Company SEC Documents filed since January 1, 2016 and publicly available at least 24 hours prior to the execution and delivery of this Agreement (other than any disclosures contained in the Forward Looking Statements or Risk Factors sections of such Company SEC Documents, and any other disclosures contained in such Company SEC Documents to the extent that such other disclosures are predictive, cautionary or forward-looking in nature); provided that, the foregoing clause (b) shall not be applicable to Section 3.2 or Section 3.4, the Company hereby represents and warrants to Parent and Merger Sub as follows:

3.1 Corporate Organization. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has the requisite corporate power and authority to own or lease all of its properties and assets and to carry on its business as it is now being conducted. The Company is duly licensed or

qualified to do business in each jurisdiction in which the nature of the business conducted by it or the character or location of the properties and assets owned or leased by it makes such licensing or qualification necessary, except where the failure to be so licensed or qualified, has not had and would not

reasonably be expected to have a Company Material Adverse Effect. The copies of the Amended and Restated Certificate of Incorporation, as amended (the Company Charter) and Amended and Restated Bylaws (the Company Bylaws) of the Company, as most recently filed with the Company SEC Documents, are true, complete and correct copies of such documents as in effect as of the date of this Agreement. The Company is not in violation of any of the provisions of the Company Charter or the Company Bylaws.

3.2 Capitalization.

(a) The authorized capital stock of the Company consists of 55,000,000 Company Shares and 5,000,000 shares of preferred stock, $0.001 par value per share (the Preferred Stock), of which 30,000 are designated as Series B Junior Participating Preferred Stock pursuant to the terms of the Rights Agreement. As of January 22, 2017, (i) 2,273,632 Company Shares (other than treasury shares) were issued and outstanding, all of which were validly issued and fully paid, nonassessable and free of preemptive rights, (ii) no Company Shares were held in the treasury of the Company , (iii) 388,572 Company Shares are available for issuance under the Company Equity Plans, of which 287,283 are subject to Company Options and outstanding as of such date, and (iv) no shares of Preferred Stock are issued and outstanding as of such date. Except for Company Options and Company Warrants, there are no options, warrants or other rights, agreements, arrangements or commitments of any character to which the Company is a party or by which the Company is bound relating to the issued or unissued capital stock or other Equity Interests of the Company, or securities convertible into or exchangeable for such capital stock or other Equity Interests, or obligating the Company to issue or sell any shares of its capital stock or other Equity Interests, or securities convertible into or exchangeable for such capital stock of, or other Equity Interests in, the Company. Since December 31, 2016 and through the date of this Agreement, except for the issuance of Company Shares upon the exercise of Company Options or Company Warrants in accordance with the terms of such Company Options or Company Warrants, the Company has not issued any shares of its capital stock or other Equity Interests, or securities convertible into or exchangeable for such capital stock or other Equity Interests. Section 3.2(a) of the Company Disclosure Schedule sets forth, as of the date hereof, a list of the holders of Company Options outstanding as of the date hereof, including, on a holder by holder and grant by grant basis, the date on which each such Company Option was granted, the type and the number of Company Options granted, the Company Equity Plan pursuant to which such Company Option was granted, the expiration date of such Company Option, the price at which such Company Option may be exercised, and the vesting schedule and status of each such Company Option. All Company Shares subject to issuance under the Company Equity Plans have been duly reserved for issuance by the Company, and upon issuance prior to the Effective Time on the terms and conditions specified in the instruments pursuant to which they are issuable, will be duly authorized, validly issued, fully paid, nonassessable and free of preemptive rights.

(b) Each Company Option (x) has been granted or issued under terms intended not to constitute nonqualified deferred compensation within the meaning of Section 409A of the Code, and (y) has been granted or issued in all material respects in accordance with the terms of the applicable Company Equity Plan and all applicable Laws.

(c) There are no outstanding contractual obligations or other commitments, agreements or arrangements of the Company (i) restricting the transfer of, (ii) relating to affecting the voting rights of, (iii) requiring the repurchase, redemption, acquisition or disposition of, or containing any right of first refusal with respect to, (iv) requiring the registration for sale of, or (v) granting any preemptive or antidilutive right with respect to, in each case, any Company Shares or any capital stock of, or other Equity Interests in, the Company. There are no outstanding bonds, debentures, notes or other indebtedness of the Company having the right to vote (or convertible into or exchangeable for Equity Interests in the Company having the right to vote) on any matters on which the Company s stockholders may vote.

(d) The Company does not hold or have the right or obligation to acquire an Equity Interest in any other Person.

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3.3 Authority; Execution and Delivery; Enforceability.

(a) The Company has all necessary power and authority to execute and deliver this Agreement, to perform and comply with each of its obligations under this Agreement and, subject to the receipt of the Company Stockholder Approval, to consummate the Transactions. The execution and delivery by the Company of this Agreement, the performance and compliance by the Company with each of its obligations herein, and the consummation by it of the Transactions have been duly authorized by all necessary corporate action on the part of the Company, subject to receipt of the Company Stockholder Approval, and no other corporate proceedings on the part of the Company and no other stockholder votes are necessary to authorize this Agreement or the consummation by the Company of the Transactions. The Company has duly and validly executed and delivered this Agreement and, assuming the due authorization, execution and delivery by Parent and Merger Sub of this Agreement, this Agreement constitutes a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as may be limited by Laws affecting the enforcement of creditors rights generally and by general equitable principles (whether considered in a Proceeding at law or in equity).

(b) The Company Board, at a meeting duly called and held, at which all of the directors were present, unanimously adopted resolutions (i) approving and declaring advisable this Agreement and the consummation of the Transactions, (ii) determining that the terms of the Agreement and the Merger are fair to, and in the best interests of, the Company and its stockholders, (iii) directing that this Agreement be submitted to the stockholders of the Company at the Company Meeting and (iv) recommending that its stockholders adopt this Agreement (the Company Board Recommendation), which resolutions have not been subsequently withdrawn, amended or modified as of the date of this Agreement.

(c) The Company Board has taken all necessary actions so that the restrictions on business combinations set forth in Section 203 of the DGCL and any other similar Law are not and will not be applicable to this Agreement and the transactions contemplated hereby, including the Merger or the other Transactions. Assuming the accuracy of the representations and warranties of Parent and Merger Sub set forth in Section 4.8, no other takeover, anti-takeover, business combination, moratorium, fair price, control share acquisition or similar Law applies to the Merger or the other Transactions. The Company Board has also taken all necessary actions so that the Rights Agreement does not apply to this Agreement and the transactions contemplated hereby, including the Merger or the other Transactions. The only vote of holders of any class or series of Company Shares or other Equity Interests of the Company necessary to adopt this Agreement and approve the Merger is the adoption of this Agreement by the affirmative vote of holders of a majority of the Company Shares outstanding and entitled to vote thereon at the Company Meeting (the Company Stockholder Approval). No other vote of the holders of Company Shares or any other Equity Interests of the Company is necessary to consummate the Transactions.

3.4 No Conflicts.

(a) The execution and delivery of this Agreement does not , and the consummation by the Company of the Transactions and compliance by the Company with any of the terms or provisions hereof will not, (i) assuming the Company Stockholder Approval is obtained, conflict with or violate any provision of the Company Charter or the Company Bylaws, (ii) assuming that all consents, approvals, authorizations and permits described in Section 3.4(b) have been obtained and all filings and notifications described in Section 3.4(b) have been made and any waiting periods thereunder have terminated or expired, conflict with or violate any Law applicable to the Company or by which any property or asset of the Company is bound or affected or (iii) require any consent or approval under, result in any breach or violation of or any loss of any benefit under, constitute a change of control or default (or an event which with notice or lapse of time or both would become a default) under or give to others any right of termination, vesting, amendment, acceleration or cancellation of, or result in the creation of a Lien on any property or asset of the

Company pursuant to, any Contract or Permit to which the Company is party, except, with respect to clauses (ii) and (iii), for any such conflicts, violations, breaches, defaults or other occurrences which would not reasonably be expected to have a Company Material Adverse Effect.

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(b) The execution and delivery of this Agreement by the Company does not, and the consummation by the Company of the Transactions and compliance by the Company with any of the terms or provisions hereof will not, require any consent, approval, authorization or permit of, or filing with or notification to, any Governmental Entity, except (i) the filing with the SEC of (A) a proxy statement, in preliminary and definitive form, relating to the Company Meeting (as amended or supplemented from time to time, the Proxy Statement), and (B) a registration statement on Form S-4 pursuant to which the offer and sale of shares of Parent Common Stock in the Merger will be registered pursuant to the Securities Act and in which the Proxy Statement will be included (together with any amendments or supplements thereto, the Form S-4), (ii) other filings required under, and compliance with other applicable requirements of, the Exchange Act and the rules and regulations of the NASDAQ, (iii) the filing and recordation of the Certificate of Merger as required by the DGCL and (iv) where failure to obtain such consents, approvals, authorizations or permits, or to make such filings, registrations or notifications, would not reasonably be expected to have a Company Material Adverse Effect.

3.5 SEC Documents; Financial Statements; Undisclosed Liabilities.

(a) The Company has timely filed or furnished all reports, schedules, forms, statements, registration statements, prospectuses and other documents required to be filed or furnished by the Company with the SEC under the Securities Act or the Exchange Act since January 1, 2014 (the Company SEC Documents).

(b) As of its respective filing date, and, if amended, as of the date of the last amendment prior to the date of this Agreement, each Company SEC Document complied in all material respects with the requirements of the Exchange Act, the Securities Act and the Sarbanes-Oxley Act of 2002 and the related rules and regulations promulgated thereunder or under the Exchange Act (the Sarbanes-Oxley Act), as the case may be, and the rules and regulations of the SEC promulgated thereunder applicable to such Company SEC Document and did not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The Company has made available to Parent true and complete copies of all material correspondence between the SEC, on the one hand, and the Company, on the other hand, occurring since January 1, 2014 and prior to the date hereof. As of the date hereof, there are no outstanding or unresolved comments in comment letters from the SEC staff with respect to any of the Company SEC Documents. To the Knowledge of the Company, as of the date hereof, none of the Company SEC Documents is the subject of ongoing SEC review, outstanding SEC comment or outstanding SEC investigation.

(c) The financial statements of the Company included in the Company SEC Documents (including, in each case, any notes or schedules thereto) (the Company SEC Financial Statements) fairly present, in all material respects, the financial condition and the results of operations, cash flows and changes in stockholders equity of the Company as of the respective dates of and for the periods referred to in the Company SEC Financial Statements, and were prepared in accordance with GAAP applied on a consistent basis during the periods involved (except as may be indicated in the notes thereto), subject, in the case of interim Company SEC Financial Statements, to normal year-end adjustments (none of which are material individually or in the aggregate) and the absence of notes (none of which, if presented, would materially differ from those in the year-end Company SEC Financial Statements). The Company SEC Financial Statements were prepared from, and in accordance with, the books and records of the Company in all material respects, and complied as to form in all material respects with all applicable accounting requirements and with the published rules and regulations of the SEC with respect thereto.

(d) The Company has established and maintains disclosure controls and procedures and internal control over financial reporting (as such terms are defined in paragraphs (e) and (f), respectively, of Rule 13a-15 and paragraph (e) of Rule 15d-15 under the Exchange Act) as required by Rules 13a-15 and 15d-15 under the Exchange Act. The Company s disclosure controls and procedures are designed to ensure that all information (both financial and

non-financial) required to be disclosed by the Company in the reports that it files or furnishes under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the

rules and forms of the SEC, and that all such information is accumulated and communicated to the Company s management as appropriate to allow timely decisions regarding required disclosure and to make the certifications required pursuant to Sections 302 and 906 of the Sarbanes-Oxley Act. The Company s management has completed an assessment of the effectiveness of the Company s disclosure controls and procedures and, to the extent required by applicable Law, presented in any applicable Company SEC Document that is a report on Form 10-K or Form 10-Q, or any amendment thereto, its conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by such report or amendment based on such evaluation. Based on the Company s management s most recently completed evaluation of the Company s internal control over financial reporting, (i) the Company had no significant deficiencies or material weaknesses in the design or operation of its internal control over financial reporting that would reasonably be expected to adversely affect the Company s ability to record, process, summarize and report financial information and (ii) the Company does not have Knowledge of any fraud, whether or not material, that involves management or other employees who have a significant role in the Company s internal control over financial reporting. Since January 1, 2014, the Company s principal executive officer and its principal financial officer have disclosed to the Company s auditors and the audit committee of the Company Board (i) all significant deficiencies and material weaknesses in the design or operation of the Company s internal control over financial reporting that would reasonably be expected to adversely affect the Company s ability to record, process, summarize and report financial information and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company s internal control over financial reporting, and the Company has made available to Parent true and complete copies of any material written materials provided to the Company s auditors or the audit committee of the Company Board relating to each of the foregoing. The Company has not made any prohibited loans or extensions of credit (within the meaning of Section 402 of the Sarbanes-Oxley Act) to any executive officer (as defined in Rule 3b-7 under the Exchange Act) or director of the Company.

(e) The Company does not have any liabilities or obligations of any nature (whether absolute or contingent, asserted or unasserted, known or unknown, primary or secondary, direct or indirect, and whether or not accrued), required by GAAP to be reflected or reserved on a balance sheet of the Company (or the notes thereto) except (i) as reflected or reserved against in the most recent audited balance sheet included in the Company SEC Financial Statements or the notes thereto, (ii) for liabilities and obligations incurred in the ordinary course of business since the date of the most recent audited balance sheet included in the Company SEC Financial Statements , (iii) for liabilities and obligations arising out of or in connection with this Agreement, the Merger or the Transactions and (iv) for liabilities and obligations that have not had, and would not reasonably be expected to have, a Company Material Adverse Effect.

3.6 Absence of Certain Changes or Events. Since January 1, 2016 through the date of this Agreement, (a) the Company has conducted its business in all material respects only in the ordinary course and in a manner consistent with past practice and (b) there has not been any change, event, development, condition or occurrence that has had or would reasonably be expected to have a Company Material Adverse Effect. Since January 1, 2016 through the date of this Agreement, the Company has not taken any action that would have constituted a breach of, or required Parent s consent pursuant to, Sections 5.1(d), (e), (f), (g), (h), (k) or (p) had the covenants therein applied since January 1, 2016.

3.7 Information Supplied. None of the information supplied or to be supplied by the Company for inclusion or incorporation by reference in (a) the Proxy Statement will, at the date that the Proxy Statement or any amendment or supplement thereto is mailed to holders of Company Shares and at the time of the Company Meeting, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading and (b) the Form S-4 will, at the time the Form S-4 is filed with the SEC, and at any time it is amended or supplemented or at the time it becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading

(except that no representation or warranty is made by the Company to such portions of the Proxy Statement and the Form S-4, as applicable, that relate to Parent and

its Subsidiaries, including Merger Sub, or to statements made therein based on information supplied by or on behalf of Parent for inclusion or incorporation by reference therein). The Proxy Statement will comply as to form in all material respects with the requirements of the Exchange Act.

3.8 Legal Proceedings. There are no material Proceedings pending, or to the Knowledge of the Company, threatened against the Company or any of its assets or properties or, to the Knowledge of the Company, any of the officers or directors of the Company. Neither the Company nor any of its assets or properties is subject to any material Order.

3.9 Compliance with Laws and Orders. The Company is, and since January 1, 2014 has been, in compliance in all material respects with all Laws, Orders and NASDAQ rules and regulations applicable to the Company or any assets owned or used by it. The Company has not received any written communication since January 1, 2014 from a Governmental Entity that alleges that the Company is in material violation of any such Law or Order. During the past five (5) years, neither the Company, nor, to the Knowledge of the Company, any director, officer, agent, employee or other Person acting on behalf of the Company, has, in the course of its actions for, or on behalf of, any of them, (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated any provision of any applicable Anti-corruption Laws; or (iv) made any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment to any foreign or domestic government official or employee. During the past five (5) years, the Company has not received any written communication from a Governmental Entity (x) related to any investigation or inquiry with respect to a potential violation by the Company or any Representative thereof of any Anti-corruption Laws, or (y) that alleges that the Company or any Representative thereof is in violation of any Anti-corruption Laws. During the past five (5) years, the Company has not had a customer or supplier or other business relationship with, is a party to any Contract with, or has engaged in any transaction with, any Person (i) that is located, organized or domiciled in or that is a citizen of Cuba, Iran, North Korea, Sudan, Syria or the Crimea Region of Ukraine (including any Governmental Entity within such country or territory) or (ii) that is the target of any international economic or trade sanction administered or enforced by the Office of Foreign Assets Control of the United States Department of the Treasury (OFAC), the United Nations Security Council, the European Union, Her Majesty s Treasury, the United Kingdom Export Control Organization or other relevant sanctions authority (including but not limited to being listed on the Specially Designated Nationals and Blocked Persons List administered by OFAC).

3.10 Permits. The Company has all governmental licenses, permits, certificates, certifications, approvals, clearances, consents, franchises, registrations, exemptions and authorizations (Permits) necessary for the conduct of its business and the use of its properties and assets, as presently conducted and used, and each of the Permits is valid, subsisting and in full force and effect, except where the failure to have or maintain such Permit has not had and would not reasonably be expected to have, a Company Material Adverse Effect. The operation of the Company as currently conducted is not, and has not been since January 1, 2014, in violation of, nor is the Company in default or violation under, any Permit, and, to the Knowledge of the Company, no event has occurred which, with notice or the lapse of time or both, would reasonably be expected to constitute a default or violation of any term, condition or provision of any Permit, except where such default or violation of such Permit has not had and would not reasonably be expected to have, a Company Material Adverse Effect. There are no actions pending or, to the Knowledge of the Company, threatened, that seek the revocation, cancellation or modification of any Permit, except where such revocation, cancellation or modification has not had and would not reasonably be expected to have, a Company Material Adverse Effect. Notwithstanding the foregoing, nothing in this Section 3.10 addresses Regulatory Permits, which are instead addressed by Section 3.18.

3.11 Employee Benefit Plans.

(a) Section 3.11(a) of the Company Disclosure Schedule sets forth a true, correct and complete list of each (i) employee benefit plan as defined in Section 3(3) of ERISA, whether or not subject to ERISA,

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(ii) employment, consulting, end of service or severance, termination protection, change in control, transaction bonus, retention or similar plan, agreement, arrangement, program or policy; or (iii) other benefit or compensation plan, contract, policy or arrangement providing for pension, retirement, profit-sharing, deferred compensation, stock option, equity or equity-linked compensation, stock purchase, employee stock ownership, tax gross-up, vacation, holiday pay or other paid time off, bonus or other incentive plans, medical, retiree medical, vision, dental or other health plans, life insurance plans, and other employee benefit plans, welfare plans or fringe benefit plans, in each case whether or not written, that is sponsored, maintained, administered, contributed to or entered into by the Company, with respect to any current or former director, officer, employee or individual independent contractor of the Company (each, a Service Provider), or for which the Company has any direct or indirect liability (whether actual or contingent) (each a Company Benefit Plan). The term Company Benefit Plan does not, however, include plans or arrangements administered by a Governmental Entity or to which the Company contributes pursuant to applicable Law or that are Multiemployer Plans (as defined below). Neither the Company, nor to the Knowledge of the Company, any other Person, has any express or implied commitment, whether legally enforceable or not, to (i) modify, change or terminate any Company Benefit Plan, other than with respect to a modification, change or termination required by ERISA or the Code or (ii) create any additional Company Benefit Plans from the prior three (3) years.

(b) The Company has made available to Parent a true, correct and complete copy of each Company Benefit Plan and the following related documents, to the extent applicable: (i) the most recent copy of any summary plan description and all written amendments, modifications or supplements applicable to any such Company Benefit Plan (and a summary of any such amendment, modification or supplement that is not in writing), (ii) the most recent annual report (Form 5500) filed with the U.S. Department of Labor, (iii) the most recently received IRS determination or opinion letter, (iv) each trust, insurance or administrative agreement relating to any such Company Benefit Plan, (v) the most recent actuarial report with respect to any such Company Benefit Plan, and (vi) all filings, records and notices concerning audits or investigations by any Governmental Entity.

(c) Each Company Benefit Plan has been established, operated and administered in all material respects in accordance with its terms and all applicable Laws, including ERISA and the Code, all contributions required to be made for any period in the prior three (3) years through the date hereof to any Company Benefit Plan by applicable Law, or under the terms of any Company Benefit Plan or under the terms of any other contractual undertaking have been timely made or, if not yet due, have been properly reflected on the most recent balance sheet filed or incorporated by reference in the Company SEC Documents prior to the date of this Agreement; and all material premiums due or payable for any period in the prior three (3) years through the date hereof with respect to insurance policies funding any Company Benefit Plan have been timely paid or, if not yet due, have been properly reflected on the most recent balance sheet filed or incorporated by reference in the Company SEC Documents prior to the date of this Agreement. With respect to the Company Benefit Plans, (i) no event has occurred and, to the Knowledge of the Company, there exists no condition or set of circumstances which would reasonably be expected to result in material liability to the Company and (ii) the Company has not, within the prior three (3) years, taken corrective action or made a filing under any voluntary correction program of the IRS, the U.S. Department of Labor, or any other Governmental Entity with respect to any Company Benefit Plan that has not been resolved prior to the date hereof and, to the Company s Knowledge, no Company Benefit Plan defect exists as of the date hereof that would qualify for correction under any such program.

(d) Each Company Benefit Plan which is intended to qualify under Section 401(a) of the Code has either received a favorable determination letter from the IRS as to its qualified status which letter has not been revoked (nor has revocation been threatened in writing) or may rely upon a favorable opinion letter from the IRS, and each trust established in connection with any Company Benefit Plan which is intended to be exempt from federal income taxation under Section 501(a) of the Code is so exempt, and to the Company s Knowledge no fact or event has occurred that would reasonably be expected to adversely affect the qualified status of any such Company Benefit Plan

or the exempt status of any such trust. No trust funding any Company Benefit Plan is intended to meet the requirements of Section 501(c)(9) of the Code.

(e) Neither the Company, nor any of its ERISA Affiliates, nor, to the Company s Knowledge, any fiduciary whom the Company has an obligation to indemnify has engaged in any prohibited transaction (within the meaning of Section 406 of ERISA or Section 4975 of the Code and other than a transaction that is exempt under a statutory or administrative exemption) which would reasonably be expected to subject any of the Company Benefit Plans or their related trusts, the Company, any of its ERISA Affiliates or any Person that the Company has an obligation to indemnify, to a material liability. No material Proceeding (including any audit or inquiry by the IRS or U.S. Department of Labor (other than routine benefits claims)) is pending, or to the Company s Knowledge is threatened, against or with respect to any Company Benefit Plan, any fiduciary of a Company Benefit Plan with respect to such fiduciary s duties to the Company Benefit Plan for whom the Company has an obligation to indemnify, or the assets of any trust under any of the Company Benefit Plans. All tax, annual reporting and other governmental filings required by ERISA and the Code have been timely filed with the appropriate Governmental Entity and all notices and disclosures have been timely provided to participants, except where the failure to do so has not had and would not reasonably be expected to have a Company Material Adverse Effect.

(f) No Company Benefit Plan is a multiemployer pension plan (as defined in Section 3(37) of ERISA) (Multiemployer Plan) or other pension plan subject to Title IV of ERISA (Title IV Plan), and neither the Company, nor any of its ERISA Affiliates sponsors, maintains, participates in, contributes to, or has any obligation (contingent or otherwise) with respect to, or has sponsored, maintained, participated in, contributed to, or had any obligation (contingent or otherwise) with respect to a Multiemployer Plan or other pension plan subject to Title IV of ERISA. No material liability under Title IV of ERISA has been incurred by the Company or any of its ERISA Affiliates that has not been satisfied in full, and no condition exists that presents a material risk to the Company or any of its ERISA Affiliates of incurring or being subject (whether primarily, jointly or secondarily) to a material liability thereunder. The Company has not incurred any material withdrawal liability under Section 4201 of ERISA.

(g) No Company Benefit Plan is, and neither the Company nor any of its ERISA Affiliates sponsors, maintains, participates in, contributes to, or has any obligation (contingent or otherwise) with respect to, or has sponsored, maintained, participated in, contributed to, or had any obligation (contingent or otherwise), with respect to any multiple employer plan (within the meaning of Section 413(c) of the Code), or multiple employer welfare arrangement (within the meaning of Section 3(40) of ERISA).

(h) Each Company Benefit Plan that is a nonqualified deferred compensation plan (as defined in Section 409A(d)(1) of the Code) and any award thereunder, in each case, that is subject to Section 409A of the Code, has been maintained and operated in documentary and operational compliance with Section 409A of the Code except as could not reasonably be expected to result in, either individually or in the aggregate, any material liability to the Company or any Service Provider.

(i) Except as set forth on Section 3.11(i) of the Company Disclosure Schedule, no amount that has been or could be received (whether in cash or property or the vesting of property), as a result of the consummation of the Transactions (alone or in conjunction with any other event, including any termination of employment), by any Service Provider of the Company who is a disqualified individual (as such term is defined in Treasury Regulation Section 1.280G-1) could be characterized as an excess parachute payment (as defined in Section 280G(b)(1) of the Code). No Company Benefit Plan provides for the gross-up or reimbursement of Taxes under Sections 409A or 4999 of the Code.

(j) Except as set forth on Section 3.11(j) of the Company Disclosure Schedule, neither the execution of this Agreement nor the consummation of the Transactions (alone or in conjunction with any other event, including any termination of employment) will (i) entitle any current or former Service Provider to any additional compensation or benefit (including any increased bonus, retention or severance pay), (ii) accelerate the time of payment or vesting or result in any payment or funding (through a grantor trust or otherwise) of compensation or benefits, increase the

amount payable or result in any other material obligation to, any Service Provider under a

Company Benefit Plan, or (iii) limit or restrict the right of the Company or, after the consummation of the Merger or the Transactions, the Surviving Corporation or any of its affiliates, to merge, amend or terminate any Company Benefit Plan.

(k) Except as set forth on Section 3.11(k) of the Company Disclosure Schedule, no Company Benefit Plan provides post-employment, medical, disability or life insurance benefits to any former employee or their dependents, except as required by Section 4980B of the Code, similar state coverage, or coverage through the end of the calendar month in which a termination of employment occurs.

3.12 Employee and Labor Matters.

(a) Section 3.12(a) of the Company Disclosure Schedule sets forth a true, correct and complete list as of the date hereof of the name of each current Service Provider and each such Service Provider s (i) position or title, (ii) date of hire, (iii) location of employment or services, (iv) if the Service Provider is full-time or part-time, (v) if such Service Provider is on a leave of absence, (vi) if such Service Provider is identified as a exempt or non-exempt under the Fair Labor Standards Act (FLSA) or similar state laws , (vii) such Service Provider s base salary or hourly wage or compensation rate (as applicable), and (viii) current commission or incentive eligibility.

(b) The Company is not a party to, or bound by, any collective bargaining agreement, agreement with any works council, or labor contract, and the Company is not currently engaged in any negotiation with any labor union, labor organization, works council or other employee organization. To the Knowledge of the Company, no labor union, labor organization, works council, or group of employees of the Company has made a pending demand for recognition or certification. To the Knowledge of the Company, there are no representation or certification proceedings or petitions seeking a representation proceeding presently pending or threatened in writing to be brought or filed with the National Labor Relations Board or any other labor relations tribunal or authority. To the Knowledge of the Company, there is no material unfair labor practice complaint or material grievance or other material administrative or judicial complaint, action or investigation pending or threatened in writing against the Company by the National Labor Relations Board or any other Governmental Entity with respect to the Company s Service Providers. There is no labor strike, dispute, lockout, slowdown or stoppage pending or, to the Company s Knowledge, threatened against or affecting the Company, and no such strike, dispute, lockout, slowdown or stoppage has occurred within the past three (3) years, in any event which could reasonably be expected to materially interfere with the business activities of the Company.

(c) The Company has been in material compliance with all applicable Laws respecting employment and employment practices including, without limitation, all Laws respecting terms and conditions of employment, health and safety, wage payment, wages and hours, child labor, immigration and work authorizations, employment discrimination, disability rights or benefits, equal opportunity, plant closures and layoffs, affirmative action, and labor relations. Notwithstanding the generality of the foregoing, the Company has properly classified each of its employees under the FLSA and independent contractors under applicable Laws.

(d) To the Company s Knowledge, no Service Provider is in any respect in violation of any term of any employment agreement, nondisclosure agreement, common law nondisclosure obligation, fiduciary duty, noncompetition agreement, restrictive covenant or other obligation to a former employer of any such employee relating (i) to the right of any such Service Provider to be employed by the Company or (ii) to the knowledge or use of trade secrets or proprietary information, in each case except as would not reasonably be expected to be material to the Company.

3.13 Environmental Matters.

(a) The Company (i) is and for the past three years has been in compliance in all material respects with all Environmental Laws, (ii) has and holds, or has applied for, all material Environmental Permits necessary for

the conduct of its business and the use of its properties and assets, as currently conducted and used, and (iii) is and for the past three years has been in compliance in all material respects with its Environmental Permits.

(b) There are no material Environmental Claims pending nor, to the Knowledge of the Company, threatened against the Company, and the Company has not received any written notification of any allegation of actual or potential responsibility for any material violation of, or material liability under, Environmental Laws relating to any Release or threatened Release of any Hazardous Materials.

(c) The Company has not (i) disposed of, arranged for the disposal of, Released, exposed any Person to or manufactured, sold, or distributed products containing, any Hazardous Materials, in each case as would give rise to material liability under Environmental Laws, (ii) entered into or agreed to any consent decree or consent order or is otherwise subject to any judgment, decree, or judicial or administrative order relating to compliance with Environmental Laws, Environmental Permits or to the investigation, sampling, monitoring, treatment, remediation, response, removal or cleanup of Hazardous Materials and no Proceeding is pending or, to the Knowledge of the Company, threatened with respect thereto, or (iii) become an indemnitor by contract or otherwise in connection with Environmental Claim threatened or asserted by any third-party.

3.14 Real Property; Title to Assets.

(a) Section 3.14(a) of the Company Disclosure Schedule sets forth a true and complete list of all real property owned in fee simple by the Company (collectively, the Company Owned Real Property) and the address for each Company Owned Real Property. The Company holds good and valid indefeasible fee simple title to the Company Owned Real Property, free and clear of all Liens, except for Permitted Liens. The Company has not leased or otherwise granted to any Person the right to use or occupy such Company Owned Real Property or any portion thereof. Other than the rights of Parent pursuant to this Agreement, there are no outstanding options, rights of first offer or rights of first refusal to purchase such Company Owned Real Property or any portion thereof or interest therein Except as has not had and would not reasonably be expected to have a Company Material Adverse Effect, to the Knowledge of the Company, all buildings, structures, improvements and fixtures located on the Company Owned Real Property are in a state of good operating condition, subject to reasonable wear and tear. The Company is not a party to any agreement or option to purchase any real property or interest therein.

(b) Section 3.14(b) of the Company Disclosure Schedule sets forth (i) a true and complete list of all real property leased, licensed subleased or otherwise occupied by the Company (collectively, the Company Leased Real Property), (ii) the address for each parcel of Company Leased Real Property, and (iii) a description of the applicable lease, sublease or other agreement therefore and any and all amendments and modifications relating thereto (the Company Lease Agreements). No Company Lease Agreement is subject to any Lien, including any right to the use or occupancy of any Company Leased Real Property, other than Permitted Liens and Liens encumbering the respective landlord s fee interest. The Company has delivered to Parent a true and complete copy of each such Company Lease Agreement, and in the case of any oral Company Lease Agreement, a written summary of the material terms of such Company Lease Agreement. With respect to each of the Company Lease Agreements: (i) the Company s possession and quiet enjoyment of the Company Leased Real Property under such Company Lease Agreement has not been disturbed, and to the Knowledge of the Company, there are no material disputes with respect to such Company Lease Agreement; (ii) the Company has not subleased, licensed or otherwise granted any Person the right to use or occupy such Company Leased Real Property or any portion thereof; and (iii) the Company has not collaterally assigned or granted any other security interest in such Company Lease Agreement or any interest therein.

(c) The Company Owned Real Property and the Company Leased Real Property are referred to collectively herein as the Company Real Property . The Company Real Property comprises all of the real property used or intended to be

used in, or otherwise related to, the business of the Company. Except as has not had and would not reasonably be expected to have a Company Material Adverse Effect, (i) each parcel of

Company Real Property is in compliance with all existing Laws applicable to such Company Real Property, and (ii) the Company has not received written notice of any Proceedings in eminent domain, condemnation or other similar Proceedings that are pending, and to the Company s Knowledge there are no such Proceedings threatened, affecting any portion of the Company Real Property.

(d) The Company has good and marketable title to, or a valid and binding leasehold or other interest in, all tangible personal property necessary for the conduct of the business of the Company as currently conducted, free and clear of all Liens (except for Permitted Liens) except as has not had and would not reasonably be expected to have a Company Material Adverse Effect.

3.15 Tax Matters. Except as has not had or would not reasonably be expected to have a Company Material Adverse Effect:

(a) all Tax Returns that are required to be filed by or with respect to the Company have been timely filed with the appropriate Tax Authority (taking into account any extension of time within which to file), and all such Tax Returns are true, complete, and accurate in all respects;

(b) the Company has timely paid all Taxes due and owing by it (whether or not shown on any Tax Return), including any Taxes required to be withheld from amounts owing to, or collected from, any employee, creditor, or other third party, other than Taxes for which adequate reserves have been established in accordance with GAAP on the financial statements of the Company;

(c) no deficiencies for Taxes have been claimed, proposed or assessed by any Tax Authority against the Company except for deficiencies which have been fully satisfied by payment, settled or withdrawn;

(d) there is no ongoing, pending or, to the Knowledge of the Company, threatened audit, examination, investigation or other proceeding with respect to any Taxes of the Company;

(e) the Company has not waived or extended any statute of limitations with respect to Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency, nor has any request been made for any such extension or waiver;

(f) the Company has not constituted a distributing corporation or a controlled corporation (within the meaning of Section 355(a)(1)(A) of the Code) in a distribution of stock intended to qualify for tax-free treatment under Section 355(a) of the Code (or any similar provision of state, local, or non-U.S. Law) in the two years prior to the date of this Agreement;

(g) the Company is not, nor has it been, a party to or bound by any Tax allocation, sharing, indemnity, or reimbursement agreement or similar arrangement;

(h) the Company has not been a member of an affiliated group (within the meaning of Section 1504(a) of the Code) filing a federal income Tax Return or any similar group for federal, state, local or foreign Tax purposes, other than a group of which the Company has been the common parent, and the Company does not have any liability for Taxes of any other person (other than Taxes of the Company) under Treasury Regulations Section 1.1502-6 (or any similar provision of foreign, state or local Law), as a transferee or successor, by contract or otherwise;

(i) the Company is not, nor has it been, a United States real property holding corporation within the meaning of Code Section 897(c)(2) of the Code within the past five (5) years;

(j) there are no Liens for Taxes upon any property or assets of the Company, except for Permitted Liens;

(k) the Company is not, nor has it been, a party to a transaction that is or is substantially similar to any reportable transaction within the meaning of U.S. Treasury Regulation Section 1.6011-4(b) (or any similar provision of state, local or non-U.S. Law); and

(l) no claim has been made by any Tax Authority in a jurisdiction where the Company does not file Tax Returns that the Company is or may be subject to taxation by that jurisdiction, other than any such claims that have been resolved.

3.16 Material Contracts.

(a) All Contracts required to be filed as exhibits to the Company SEC Documents have been so filed in a timely manner. Section 3.16(a) of the Company Disclosure Schedule sets forth a true and complete list, as of the date hereof, of each of the following Contracts to which the Company is a party or by which the Company or any of its assets are bound (and any material amendments, supplements and modifications thereto):

(i) any Contract that is a material contract (as such term is defined in Item 601(b)(10) of Regulation S-K of the Exchange Act);

(ii) any Contract (other than a Company Benefit Plan) under which the Company is required to make payments of, or deliver goods or services having a value of more than $50,000;

(iii) any Contract that materially limits the ability of the Company to compete or provide services in any line of business or with any Person or in any geographic area;

(iv) any Contract required to be disclosed pursuant to Item 404 of Regulation S-K of the Exchange Act;

(v) any Contract that permits any Person other than the Company to manufacture, market, offer, distribute, or sell any products of the Company, including distribution, sales representative, and similar agreements;

(vi) any Contract or series of related Contracts (A) relating to indebtedness of the Company for borrowed money or (B) constituting a guarantee by the Company of the obligations of any other Person for borrowed money;

(vii) any Contract providing for the acquisition, transfer, use, development, sharing or license or grant of any right in or to any Intellectual Property, with the exception of shrink-wrap, click-wrap, and off-the-shelf software licenses, and any other licenses of un-customized software that is commercially available to the public generally, in each case with one-time or annual license, maintenance, support and other fees of $50,000 or less;

(viii) any Contract that provides for any material most favored nation provision to which the Company is subject;

(ix) any Contract with the Company s top ten (10) suppliers (measured by dollar volume of purchases of the Company during the twelve (12) months ended December 31, 2016);

(x) any Contract with the Company s the top four (4) customers (measured by volume of spending by the customer during the twelve (12) months ended December 31, 2016);

(xi) any Contract between the Company, on the one hand, and any Governmental Entity, on the other hand, involving the purchase or sale of goods or the provision of services for the benefit of, or by, any Governmental Entity;

(xii) any purchase, sale or supply contract that contains minimum volume requirements or commitments, exclusive or preferred purchasing arrangements or promotional requirements;

(xiii) any Company Lease Agreements;

(xiv) any acquisition or divestiture agreement (A) entered into since January 1, 2013 or (B) that contains any earn-out provision or other contingent payment obligation, or any continuing indemnification provision, in each case, that has not been satisfied in full or otherwise expired by its terms;

(xv) any Contract for any joint venture, partnership or similar arrangement;

(xvi) any single source supply contract pursuant to which goods or materials that are material to the Company are supplied to the Company from an exclusive source;

(xvii) any Contract that contains a standstill or similar agreement pursuant to which the Company has agreed not to acquire assets or securities of any other party to such Contract or any of its affiliates; or

(xviii) any Contract that grants any rights of first refusal or rights of first offer or similar rights with respect to, or that limits or purports to limit the ability of the Company to own, operate, sell, transfer, pledge or otherwise dispose of, any material amount of the Company s assets or any material portion of the Company s business.

(b) Except as has not had and would not reasonably be expected to have a Company Material Adverse Effect, (i) each Contract set forth or required to be set forth in Section 3.16(a) of the Company Disclosure Schedule or filed or required to be filed as an exhibit to the Company SEC Documents (the Company Material Contracts) is valid and binding on the Company and, to the Knowledge of the Company, each other party thereto, and is and in full force and effect and enforceable by the Company in accordance with its terms, except as limited by Laws affecting the enforcement of creditors rights generally or by general equitable principles (whether considered in a Proceeding at law or in equity), (ii) the Company has performed all obligations required to be performed by it under each Company Material Contract, and it is not (with or without notice or lapse of time, or both) in breach or default thereunder and, to the Knowledge of the Company, no other party to any Company Material Contract is (with or without notice or lapse of time, or both) in breach or default thereunder and, to the Knowledge of the Company, no event has occurred or circumstance exists which (with or without notice or lapse of time, or both) would constitute a breach or default thereunder, and (iii) since January 1, 2015, the Company has not received written notice of any actual, alleged, possible or potential breach or violation of, default under, or failure to comply with, any term or requirement of any Company Material Contract, or any written notice of revocation, cancellation or termination of any Company Material Contract.

(c) The Company has made available to Parent true and complete copies of each Company Material Contract (including any material amendments or modifications thereto) as of the date of this Agreement.

3.17 Intellectual Property.

(a) Section 3.17(a)(i) of the Company Disclosure Schedule sets forth a list of all (i) issued patents and pending patent applications, (ii) trademark and service mark registrations and applications, (iii) copyright registrations and applications, and (iv) internet domain name registrations, in each case that are owned by the Company (collectively, the Company Registered Intellectual Property) together with the assignment status (if applicable) and the jurisdictions in which any such Company Registered Intellectual Property has been issued or registered or in which an application for such issuance and registration has been filed, including the respective registration or application numbers and the

names of the registered owner or applicant, as applicable. With respect to each item of material Company Registered Intellectual Property, (i) the Company is the sole owner and possesses all right, title and interest in and to the item, free and clear of all Liens (other than Permitted Liens), (ii)

such item is in effect, has not been abandoned or cancelled, and all necessary fees and filings with respect to any Company Registered Intellectual Property have been timely submitted to the relevant Governmental Entities and domain name registrars to maintain such Company Registered Intellectual Property in its current status, and (iii) no Proceeding is pending or, to Knowledge of the Company, is threatened, that challenges the legality, validity, enforceability, registration, use or ownership of the item.

(b) Neither the execution and delivery of this Agreement by the Company, nor the performance of this Agreement by the Company, will result in the loss, forfeiture, termination, or impairment of, or give rise to a right of any Person to limit, terminate, or consent to the continued use of, any rights of the Company in any Company Material Intellectual Property.

(c) To the Knowledge of the Company, the Company is not infringing, misappropriating, diluting, or otherwise violating the Intellectual Property rights of any Person. No Proceeding is pending, or to the Knowledge of the Company is threatened, alleging any such infringement, misappropriation, dilution, or violation (including any claim that the Company must license or refrain from using any Intellectual Property rights of any Person). To the Knowledge of the Company, no Person is infringing, misappropriating, diluting or otherwise violating any Company Owned Intellectual Property. The Company has not made or asserted any charge, complaint, claim, demand or notice during the past three (3) years (or earlier, if presently not resolved) alleging that any Person has infringed, misappropriated, diluted, or otherwise violated any Company Owned Intellectual Property.

(d) All Company Material Intellectual Property regarded as trade secrets has been maintained in confidence in accordance with protection procedures that are adequate for protection. All current and, to the Knowledge of the Company, former officers, directors, employees, personnel, consultants, advisors, agents, and independent contractors of the Company, and its predecessors, who have created, contributed to or participated in the conception or development of any Company Material Intellectual Property have entered into valid and binding proprietary rights agreements with the Company or predecessor, vesting ownership of such Intellectual Property in the Company, and waiving all of such Person s moral rights therein. No such Person has asserted, and to the Company s Knowledge, no such Person has, any right, title, interest or other claim in, or the right to receive any royalties or other consideration with respect to, any such Intellectual Property.

(e) No Company Owned Intellectual Property is subject to any outstanding judgment, injunction, order, decree or agreement restricting the ownership or use thereof by the Company, or restricting the sale or licensing thereof to any Person. Except as set forth in Section 3.17(e) of the Company Disclosure Schedule, to the Company s Knowledge, at no time during the conception of or reduction to practice of any Company Owned Intellectual Property was any inventor of such Intellectual Property (i) subject to any employment agreement or invention assignment or nondisclosure agreement or other obligation with any Third Party, (ii) operating under any grants from any Governmental Entity, university, college, other educational institution or private source, or (iii) performing research sponsored by any Governmental Entity, university, college, other educational institution or private source. Except as set forth in Section 3.17(e) of the Company Disclosure Schedule, to the Company s Knowledge no facilities of any university, college, other educational institution or research center were used in the development or reduction to practice of any Company Owned Intellectual Property.

(f) The Company has established and implemented commercially reasonable security measures and policies (i) to protect all Personal Data collected by them or on their behalf from and against unauthorized access, use, modification and/or disclosure; (ii) to protect against any material anticipated threats or hazards to the security of Personal Data; and (iii) for the disposal of Personal Data in compliance with the requirements of all applicable Information Privacy and Security Laws. The Company is currently operating in compliance, in all material respects, with all applicable Information Privacy and Security Laws. There are no Proceedings pending against the Company asserting any

violation by the Company of any (i) Information Privacy and Security Law, (ii) agreement (or portion thereof) to which the Company is a party that relates to the protection of Personal Data, or (iii) of the Company s privacy and security policies applicable to Personal Data. To the Knowledge of the Company, the Company has not

made or suffered any unauthorized acquisition, access, use or disclosure of any Personal Data that would trigger a notification or reporting requirement under any Information Privacy and Security Law.

(g) The Company has taken commercially reasonable actions to protect the confidentiality, integrity and security of the IT Assets against unauthorized use, access, interruption, modification and corruption.

3.18 Regulatory Matters.

(a) The Company has at all times during the past five (5) years operated in compliance, and currently is in compliance, in all material respects with all health care laws applicable to the operation of its business as currently conducted, including, to the extent applicable to the operation of the Company s business, each of (i) the Federal Food, Drug, and Cosmetic Act (21 U.S.C. Section 301 et seq.) (the FFDCA) and the Public Health Service Act (42 U.S.C. Section 201 et seq.), and the regulations promulgated thereunder); (ii) federal, state, local and foreign health care related fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the federal Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the exclusion laws (42 U.S.C. Section 1320a-7), the Civil Monetary Penalties Law (42 U.S.C. Section 1320a-7a), the federal criminal false statements law (42 U.S.C. § 1320a-7b(a)), the U.S. Physician Payments Sunshine Act (42 U.S.C. Section 1320a-7h), all criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. §§ 286 and 287, and the regulations promulgated pursuant to such statutes; (iii) the U.S. Health Insurance Portability and Accountability Act of 1996 (HIPAA), (42 U.S.C. Section 1320d et seq.), as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated thereunder and any state or non-U.S. counterpart thereof or other law or regulation the purpose of which is to protect the privacy of individuals or prescribers; (iv) the Medicare statute (Title XVIII of the Social Security Act); (v) the Medicaid statute (Title XIX of the Social Security Act); (vi) TRICARE laws (10 U.S.C. § 1071, et seq.), and (vii) any other state or federal law, regulation, guidance document, manual provision, program memorandum, opinion letter or other public issuance which regulates kickbacks, recordkeeping, claims process, documentation requirements, referrals, the hiring of employees or acquisition of services or supplies from those who have been debarred, suspended or excluded from government health care programs, quality, safety, privacy, security, licensure or any other aspect of manufacturing and distributing drugs and biological products (collectively, the Health Care Laws). The Company has not received written notice of any pending or threatened claim, suit, proceeding, hearing, enforcement audit, investigation, arbitration, or other action from the FDA, the Centers for Medicare and Medicaid Services, the U.S. Department of Justice, the U.S. Department of Health and Human Services, or other Governmental Entity alleging that any operation or activity of the Company is in material violation of any Health Care Laws. The Company has not engaged in activities which are, as applicable, reasonably likely to be a cause for false claims liability, civil penalties, debarment, disqualification or mandatory or permissive exclusion from any U.S. state or federal healthcare program. Neither the Company, nor, to the Knowledge of Company, any director, officer, employee or contractor of the Company, has made any voluntary or self-disclosure to any Governmental Entity regarding any potential non-compliance with any applicable Health Care Law. To the Knowledge of Company, no act, omission, event or circumstance has occurred that would reasonably be expected to give rise to, or lead to, any Proceeding or material non-compliance with any applicable Health Care Laws.

(b) Section 3.18(b) of the Company Disclosure Schedule sets forth a list of all current and pending Permits of the FDA and similar federal, state, local or foreign Governmental Entities (each a Regulatory Authority and collectively, the Regulatory Authorities) required for the conduct of the Company s business (collectively, the Regulatory Permits). The Company holds, and has been and currently is operating in material compliance with the Regulatory Permits and all such Regulatory Permits are in full force and effect. The Company has fulfilled and performed all of its material obligations with respect to the Regulatory Permits, and the Knowledge of the Company, no event has occurred which allows, or after notice or lapse of time would reasonable be expected to allow, revocation or termination thereof or results in any other material impairment of the rights of the holder of any Regulatory Permit.

(c) All applications, notifications, submissions, information, claims, reports and statistics, and other data and conclusions derived therefrom (collectively, the Submissions), utilized as the basis for or submitted in connection with any and all requests for a Regulatory Permit from any Regulatory Authority relating to the Company or its business and products, when submitted to the applicable Regulatory Authority were true, complete and correct in all material respects as of the date of submission and any necessary or required updates, changes, corrections or modification to such Submissions have been submitted to such Regulatory Authority.

(d) Except as set forth in Section 3.18(d) of the Company Disclosure Schedule, since January 1, 2014, the Company has not had any product or manufacturing site (whether Company-owned or that of a contract manufacturer for the products) subject to a Governmental Entity (including FDA or other Regulatory Authority) shutdown, restriction, or import or export prohibition, nor received any FDA Form 483 or other Regulatory Authority notice of inspectional observations, warning letters, untitled letters or requests or requirements to make changes to the products that if not complied with would reasonably be expected to have a material effect on the Company, or similar correspondence or notice from any Regulatory Authority alleging or asserting noncompliance with any applicable Law, Regulatory Permit or such requests or requirements of a Regulatory Authority, and, to the Knowledge of the Company, no Regulatory Authority is considering such action.

(e) Section 3.18(e) of the Company Disclosure Schedule sets forth a list of (i) all recalls, safety alerts or other notice of action relating to an alleged lack of safety, efficacy, or regulatory compliance of the Company s products (Safety Notices) since January 1, 2014; (ii) the dates such Safety Notices, if any, were resolved or closed; and (iii) to the Company s Knowledge, any material complaints with respect to the products that are currently unresolved. There are no outstanding orders or requests by any Regulatory Authority for a recall for any products, and no Safety Notices, or, to the Company s Knowledge, material product complaints with respect to the Company s products, and to the Company s Knowledge, there are no facts that would reasonably be expected to result in (i) a recall or material Safety Notice with respect to the Company s products, (ii) a material change in labeling of any the Company s products; or (iii) a termination or suspension of manufacturing, processing or testing of any of the Company s products.

(f) The clinical, pre-clinical and other studies and tests conducted by or on behalf of or sponsored by the Company or in which the Company or its products or product candidates have participated were and, if still pending, are being conducted in all material respects in accordance with standard medical and scientific research procedures and all applicable Laws, including, but not limited to, the FFDCA and its applicable implementing regulations at 21 C.F.R. Parts 50, 54, 56, 58, and 312. Except to the extent disclosed on Section 3.18(f) of the Company Disclosure Schedule, no investigational new drug application filed by or on behalf of the Company with the FDA has been disapproved, terminated or suspended by the FDA, and neither the FDA nor any other Regulatory Authority has commenced, or, to the Knowledge of the Company, threatened to initiate, any action to place a clinical hold order on, or otherwise terminate, delay or suspend, or impose conditions of approval on any proposed or ongoing clinical investigation conducted or proposed to be conducted by or on behalf of the Company.

(g) The Company is not the subject of any pending or, to the Knowledge of the Company, threatened investigation in respect of the Company or its products, by the FDA pursuant to its Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto. Neither the Company, nor to the Knowledge of the Company any of its officers, directors, employees, agents, or contractors has been convicted of any crime or engaged in any conduct that has resulted or would reasonably be expected to result in a material debarment or exclusion (i) under 21 U.S.C. Section 335a, or (ii) other Health Care Law. As of the date hereof, no claims, actions, proceedings or investigations that would reasonably be expected to result in such a material debarment, suspension or exclusion are pending or threatened against the Company or, to the Knowledge of the Company, any of its officers, directors, employees or agents.

(h) The Company is not a party to and does not have any ongoing reporting or disclosure obligations pursuant to or under any corporate integrity agreements, monitoring agreements, deferred prosecution agreement,

consent decrees, settlement orders, or similar agreements imposed by any Governmental Entity. Neither the Company, nor to the Knowledge of the Company any of its officers, directors, employees, agents and contractors has been or is currently debarred, suspended or excluded from participation in any governmental health care program, or convicted of any crime or engaged in any conduct for which such Person would reasonably be expected to be debarred, suspended or excluded from participating in any governmental health care program under Section 1128 of the Social Security Act of 1935 (42 U.S.C. § 1320a-7), as amended, or any similar applicable Law or program.

3.19 Broker s Fees. Except for the financial advisors fees set forth in Section 3.19 of the Company Disclosure Schedule, neither the Company nor any of its officers or directors on behalf of the Company has employed any financial advisor, broker or finder or incurred any liability for any financial advisory, broker s fees, commissions or finder s fees in connection with any of the Transactions.

3.20 Opinion of Financial Advisor. Roth Capital Partners, LLC, the Company s financial advisor has delivered to the Company Board its opinion in writing or orally, in which case, such opinion will be subsequently confirmed in writing, to the effect that, as of the date thereof and based upon and subject to the assumptions, limitations, qualifications, and other matters set forth therein, the consideration to be received by the holders of Company Shares (other than Parent and its affiliates) pursuant to this Agreement is fair from a financial point of view to such holders.

3.21 Insurance. Except as would not reasonably be expected to have a Company Material Adverse Effect, (a) the Company maintains insurance of a scope and coverage as is sufficient to comply with applicable Law and in accordance with standard industry practices, (b) all insurance policies of the Company are in full force and effect, and all premiums due and payable thereon have been paid and (c) the Company is not in breach of, or default under, any such insurance policy or has taken any action or failed to take any action which, with notice or lapse of time or both, would constitute such a breach or default or permit termination or modification of any of the insurance policies. Since January 1, 2014, the Company has not received any written notice of cancellation, invalidation or termination or, as of the date of this Agreement, denial of coverage, rejection of a material claim or material adjustment in the amount of the premiums payable under any material insurance policy currently maintained by the Company.

3.22 No Other Representations or Warranties. Except for the representations and warranties expressly set forth in this Article 3 or the Company Disclosure Schedule, none of the Company, any of its affiliates or any other Person on behalf of the Company makes any express or implied representation or warranty (and there is and has been no reliance by Parent, Merger Sub or any of their respective affiliates or Representatives on any such representation or warranty) with respect to the Company or its business or with respect to any other information provided, or made available, to Parent, Merger Sub or their respective Representatives or affiliates in connection with the transactions contemplated hereby, including the accuracy or completeness thereof. Without limiting the foregoing, neither the Company nor any other Person will have or be subject to any liability or other obligation to Parent, Merger Sub or their Representatives or affiliates or any other Person resulting from Parent s, Merger Sub s or their Representatives or affiliates use of any information, documents, projections, forecasts or other material made available to Parent, Merger Sub or their Representatives or affiliates, including any information made available in the electronic data room maintained by the Company for purposes of the transactions contemplated by this Agreement, teaser, marketing material, confidential information memorandum, management presentations, functional break-out discussions, responses to questions submitted on behalf of Parent, Merger Sub or their respective Representatives or in any other form in connection with the transactions contemplated by this Agreement, unless and to the extent any such information is expressly included in a representation or warranty contained in this Article 3 or the Company Disclosure Schedule.

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ARTICLE 4

REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Except as set forth in the disclosure schedule delivered by Parent and Merger Sub to the Company (the Parent Disclosure Schedule) prior to the execution of this Agreement (with specific reference to the representations and warranties in this Article 4 to which the information in such schedule relates; provided, that, disclosure in the Parent Disclosure Schedule as to a specific representation or warranty shall qualify any other sections of this Agreement to the extent (notwithstanding the absence of a specific cross reference) it is reasonably apparent on its face that such disclosure relates to such other sections), Parent and Merger Sub hereby represent and warrant to the Company as follows:

4.1 Corporate Organization. Each of Parent and Merger Sub is a corporation or other entity duly organized, validly existing and, to the extent applicable, in good standing under the laws of the jurisdiction of its organization and has the requisite corporate or other entity power and authority to own or lease all of its properties and assets and to carry on its business as it is now being conducted. Each of Parent and Merger Sub is duly licensed or qualified to do business in each jurisdiction in which the nature of the business conducted by it or the character or location of the properties and assets owned or leased by it makes such licensing or qualification necessary, except where the failure to be so licensed or qualified, has not had and would not reasonably be expected to have a Parent Material Adverse Effect.

4.2 Authority, Execution and Delivery; Enforceability. Each of Parent and Merger Sub has all necessary power and authority to execute and deliver this Agreement, to perform and comply with each of its obligations under this Agreement and to consummate the Transactions applicable to such party. The execution and delivery by each of Parent and Merger Sub of this Agreement, the performance and compliance by Parent and Merger Sub with each of its obligations herein and the consummation by Parent and Merger Sub of the Transactions applicable to it have been duly authorized by all necessary corporate action on the part of Parent and Merger Sub, and no other corporate proceedings on the part of Parent or Merger Sub and no stockholder votes are necessary to authorize this Agreement or the consummation by Parent and Merger Sub of the Transactions to which it is a party. Each of Parent and Merger Sub has duly and validly executed and delivered this Agreement and, assuming the due authorization, execution and delivery by the Company of this Agreement, this Agreement constitutes Parent s and Merger Sub s legal, valid and binding obligation, enforceable against each of Parent and Merger Sub in accordance with its terms, except as may be limited by Laws affecting the enforcement of creditors rights generally or by general equitable principles (whether considered in a Proceeding at law or in equity).

4.3 No Conflicts.

(a) The execution and delivery of this Agreement by Parent and Merger Sub does not, and the consummation by Parent and Merger Sub of the Transactions and compliance by Parent and Merger Sub with any of the terms or provisions hereof will not, (i) conflict with or violate any provision of the certificate of incorporation, bylaws or similar organizational documents of Parent or Merger Sub, (ii) assuming that all consents, approvals, authorizations and permits described in Section 4.3(b) have been obtained and all filings and notifications described in Section 4.3(b) have been made and any waiting periods thereunder have terminated or expired, conflict with or violate any Law applicable to Parent, Merger Sub or any other Subsidiary of Parent (each a Parent Subsidiary and, collectively, the Parent Subsidiaries), or by which any property or asset of Parent or any Parent Subsidiary is bound or affected or (iii) require any consent or approval under, result in any breach or violation of or any loss of any benefit under, constitute a change of control or default (or an event which with notice or lapse of time or both would become a default) under or give to others any right of termination, vesting, amendment, acceleration or cancellation of, or result

in the creation of a Lien on any property or asset of Parent or any Parent Subsidiary, including Merger Sub, pursuant to, any Contract or Permit to which Parent or any Parent Subsidiary is a party, except, with respect to clauses (ii) and (iii), for any such conflicts, violations, breaches, defaults or other occurrences which would not reasonably be expected to have a Parent Material Adverse Effect.

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(b) Assuming the accuracy of the representations and warranties of the Company in Section 3.4, the execution and delivery of this Agreement by Parent and Merger Sub does not, and the consummation by Parent and Merger Sub of the Transactions and compliance by Parent and Merger Sub with any of the terms or provisions hereof will not, require any consent, approval, authorization or permit of, or filing or registration with or notification to, any Governmental Entity, except (i) the filing with the SEC of (A) the Proxy Statement and (B) the Form S-4, (ii) other filings required under, and compliance with other applicable requirements of under the Exchange Act and the rules and regulations of NYSE, (iii) the filing and recordation of the Certificate of Merger as required by the DGCL and (iv) where failure to obtain such consents, approvals, authorizations or permits, or to make such filings, registrations or notifications would not reasonably be expected to have a Parent Material Adverse Effect.

4.4 Litigation. There is no Proceeding pending, or, to the Knowledge of Parent, threatened that has had or would reasonably be expected to have a Parent Material Adverse Effect, and neither Parent nor Merger Sub is subject to any outstanding Order that has had or would reasonably be expected to have a Parent Material Adverse Effect.

4.5 Capitalization.

(a) The authorized capital stock of Parent consists of 200,000,000 shares of Parent Common Stock. As of October 31, 2016, there were outstanding 118,575,964 shares of Parent Common Stock. All outstanding shares of capital stock of Parent have been duly authorized and validly issued, fully paid and nonassessable and free of preemptive rights.

(b) The shares of Parent Common Stock to be issued as part of the Merger Consideration have been duly authorized and, when issued and delivered in accordance with the terms of this Agreement, will have been validly issued and will be fully paid and nonassessable and the issuance thereof is not subject to any preemptive or other similar right.

4.6 SEC Documents; Financial Statements; Undisclosed Liabilities.

(a) Parent has timely filed or furnished all reports, schedules, forms, statements, registration statements, prospectuses and other documents required to be filed or furnished by Parent with the SEC under the Securities Act or the Exchange Act since January 1, 2014 (the Parent SEC Documents). None of the Parent Subsidiaries is required to make any filings with the SEC.

(b) As of its respective filing date, and, if amended, as of the date of the last amendment prior to the date of this Agreement, each Parent SEC Document complied in all material respects with the requirements of the Exchange Act, or the Securities Act or and the Sarbanes-Oxley Act, as the case may be, and the rules and regulations of the SEC promulgated thereunder applicable to such Parent SEC Document and did not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. Parent has made available to the Company true and complete copies of all material correspondence between the SEC, on the one hand, and Parent and any Parent Subsidiaries, on the other hand, occurring since January 1, 2014 and prior to the date hereof. As of the date hereof, there are no outstanding or unresolved comments in comment letters from the SEC staff with respect to any of the Parent SEC Documents. To the Knowledge of Parent, as of the date hereof, none of the Parent SEC Documents is the subject of ongoing SEC review, outstanding SEC comment or outstanding SEC investigation.

(c) The consolidated financial statements of Parent included in the Parent SEC Documents (including, in each case, any notes or schedules thereto) (the Parent SEC Financial Statements) fairly present, in all material respects, the financial condition and the results of operations, cash flows and changes in stockholders equity of Parent and its Subsidiaries (on a consolidated basis) as of the respective dates of and for the periods

referred to in the Parent SEC Financial Statements, and were prepared in accordance with GAAP applied on a consistent basis during the periods involved (except as may be indicated in the notes thereto), subject, in the case of interim Parent SEC Financial Statements, to normal year-end adjustments and the absence of notes.

(d) Parent has established and maintains disclosure controls and procedures and internal control over financial reporting (as such terms are defined in paragraphs (e) and (f), respectively, of Rule 13a-15 and paragraph (e) of Rule 15d-15 under the Exchange Act) as required by Rules 13a-15 and 15d-15 under the Exchange Act. Parent s disclosure controls and procedures are designed to ensure that all information (both financial and non-financial) required to be disclosed by Parent in the reports that it files or furnishes under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and that all such information is accumulated and communicated to Parent s management as appropriate to allow timely decisions regarding required disclosure and to make the certifications required pursuant to Sections 302 and 906 of the Sarbanes-Oxley Act. Parent s management has completed an assessment of the effectiveness of Parent s disclosure controls and procedures and, to the extent required by applicable Law, presented in any applicable Parent SEC Document that is a report on Form 10-K or Form 10-Q, or any amendment thereto, its conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by such report or amendment based on such evaluation. Based on Parent s management s most recently completed evaluation of Parent s internal control over financial reporting, (i) Parent had no significant deficiencies or material weaknesses in the design or operation of its internal control over financial reporting that would reasonably be expected to adversely affect Parent s ability to record, process, summarize and report financial information and (ii) Parent does not have Knowledge of any fraud, whether or not material, that involves management or other employees who have a significant role in Parent s internal control over financial reporting. Since January 1, 2014, Parent s principal executive officer and its principal financial officer have disclosed to Parent s auditors and the audit committee of the Board of Directors of Parent (the Parent Board) (i) all significant deficiencies and material weaknesses in the design or operation of Parent s internal control over financial reporting that would reasonably be expected to adversely affect Parent s ability to record, process, summarize and report financial information and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in Parent s internal control over financing reporting, and Parent has made available to Parent true and complete copies of any material written materials provided to Parent s auditors or the audit committee of the Parent Board relating to each of the foregoing. Parent has not made any prohibited loans or extensions of credit (within the meaning of Section 402 of the Sarbanes-Oxley Act) to any executive officer (as defined in Rule 3b-7 under the Exchange Act) or director of Parent.

(e) Parent and its Subsidiaries do not have any liabilities or obligations of any nature (whether absolute or contingent, asserted or unasserted, known or unknown, primary or secondary, direct or indirect, and whether or not accrued), required by GAAP to be reflected or reserved on a consolidated balance sheet of Parent (or the notes thereto) except (i) as reflected or reserved against in the most recent audited balance sheet included in the Parent SEC Financial Statements or the notes thereto, (ii) for liabilities and obligations incurred in the ordinary course of business since the date of the most recent audited balance sheet included in the Parent SEC Financial Statements, (iii) for liabilities and obligations arising out of or in connection with this Agreement, the Merger or the Transactions and (iv) for liabilities and obligations that have not had, and would not reasonably be expected to have, a Parent Material Adverse Effect.

4.7 Information Supplied. None of the information supplied or to be supplied by Parent or Merger Sub for inclusion or incorporation by reference in (a) the Proxy Statement will, at the date that the Proxy Statement or any amendment or supplement thereto is mailed to holders of Company Shares and at the time of the Company Meeting, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances in which they are made, not misleading and (b) the Form S-4 will, at the time the Form S-4 is filed with the SEC, and at any time it is amended or supplemented or at the time it becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or

necessary to make the statements therein, in light of the circumstances under which they are made, not misleading (except that no representation or warranty is made by

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Parent or Merger Sub to such portions of the Proxy Statement or the Form S-4, as applicable, that relate expressly to the Company or to statements made therein based on information supplied by or on behalf of Company for inclusion or incorporation by reference therein). The Form S-4 will comply as to form in all material respects with the requirements of the Exchange Act and the Securities Act.

4.8 Ownership of Company Capital Stock. None of Parent, Merger Sub or any Parent Subsidiary beneficially owns any Company Shares as of the date hereof. Neither Parent nor Merger Sub is, nor at any time during the last three years has it been, an interested stockholder of the Company as defined in Section 203 of the DGCL (other than as contemplated by this Agreement).

4.9 Available Funds. Parent and Merger Sub have or, at Closing, shall have, sufficient cash, available lines of credit or other sources of immediately available funds to permit Parent and Merger Sub to perform all of their obligations under this Agreement and to consummate the Merger.

4.10 Ownership of Merger Sub. All of the issued and outstanding Equity Interests of Merger Sub are, and at the Effective Time will be, owned directly or indirectly by Parent. Merger Sub was formed solely for purposes of the Merger and, except for matters incident to formation and execution and delivery of this Agreement and the performance of the transactions contemplated hereby, has not prior to the date hereof engaged in any business or other activities.

4.11 Brokers Fees. Except for the financial advisors fees set forth in Section 4.11 of the Parent Disclosure Schedule, neither Parent nor any Parent Subsidiary nor any of their respective officers or directors on behalf of Parent or such Parent Subsidiary has employed any financial advisor, broker or finder or incurred any liability for any financial advisory, broker s fees, commissions or finder s fees in connection with any of the Transactions.

4.12 No Other Representations and Warranties. Except for the representations and warranties expressly set forth in this Article 4, none of Parent, Merger Sub, any of their respective affiliates or any other Person on behalf of Parent or Merger Sub makes any express or implied representation or warranty (and there is and has been no reliance by the Company or any of its affiliates or Representatives on any such representation or warranty) with respect to Parent, Merger Sub, any other Parent Subsidiary or their respective businesses or with respect to any other information provided, or made available, to the Company or its Representatives or affiliates in connection with the transactions contemplated hereby, including the accuracy or completeness thereof. Without limiting the foregoing, none of Parent, Merger Sub or any other Person will have or be subject to any liability or other obligation to the Company or its Representatives or affiliates or any other Person resulting from the Company s or its Representatives or affiliates use of any information, documents, projections, forecasts or other material made available to the Company or its Representatives or affiliates, including any information made available in management presentations, functional break-out discussions, responses to questions submitted on behalf of the Company or its Representatives or in any other form in connection with the transactions contemplated by this Agreement, unless and to the extent any such information is expressly included in a representation or warranty contained in this Article 4.

ARTICLE 5

COVENANTS

5.1 Conduct of Business by the Company Pending the Closing. Between the date of this Agreement and the earlier of the Effective Time and the termination of this Agreement in accordance with Article 7, except as set forth in Section 5.1 of the Company Disclosure Schedule or as otherwise expressly required by any other provision of this Agreement or by applicable Law, or with the prior written consent of Parent (not to be unreasonably withheld,

conditioned or delayed), the Company will, (i) conduct its operations only in the ordinary course of business, and (ii) use its commercially reasonable efforts to keep available the services of the current officers, employees and consultants of the Company and to preserve the goodwill and current relationships of the

Company with customers, suppliers and other Persons with which the Company has business relations. Without limiting the foregoing, except as set forth in Section 5.1 of the Company Disclosure Schedule or as otherwise expressly required by any other provision of this Agreement or by applicable Law, the Company shall not, between the date of this Agreement and the earlier of the Effective Time and the termination of this Agreement in accordance with Article 7, directly or indirectly, take any of the following actions without the prior written consent of Parent (not to be unreasonably withheld, conditioned or delayed):

(a) amend its certificate of incorporation or bylaws or equivalent organizational documents;

(b) issue, sell, pledge, dispose of, grant, transfer or encumber any shares of capital stock of, or other Equity Interests in, the Company of any class, or securities convertible into, or exchangeable or exercisable for, any shares of such capital stock or other Equity Interests, or any options, warrants or other rights of any kind to acquire any shares of such capital stock or other Equity Interests or such convertible or exchangeable securities of the Company, other than the issuance of Company Shares upon the exercise of Company Options outstanding as of the date hereof in accordance with their existing terms;

(c) sell, pledge, dispose of, transfer, lease, license, guarantee or encumber any property or assets of the Company (other than Intellectual Property), except (i) pursuant to the express terms of any Company Material Contract in effect as of the date hereof, (ii) the sale or disposition of property or assets with a fair market value not in excess of $10,000 individually or $25,000 in the aggregate, or (iii) the sale of inventory in the ordinary course of business;

(d) sell, assign, pledge, transfer, license, abandon, or otherwise dispose of any Intellectual Property of the Company, except (A) the abandonment, in the ordinary course of business, of Company Owned Intellectual Property that in the Company s reasonable business judgment is no longer used or useful in the business of the Company and is no longer commercially practicable to maintain, and (B) the non-exclusive licensing or sublicensing of Company Intellectual Property to affiliates, distributors, and customers in the ordinary course of business;

(e) declare, set aside, make or pay any dividend or other distribution (whether payable in cash, stock, property or a combination thereof) with respect to any of its capital stock or other Equity Interests;

(f) reclassify, combine, split, subdivide or amend the terms of, or redeem, purchase or otherwise acquire, directly or indirectly, any of its capital stock or other Equity Interests, except the acceptance of Company Shares as payment for the exercise price of Company Options or for withholding taxes incurred in connection with the exercise of Company Options in accordance with past practice (or in accordance with Section 2.4 of this Agreement) and the terms of the applicable Company Equity Plan and applicable award agreement(s);

(g) merge or consolidate the Company with any Person or adopt a plan of complete or partial liquidation or resolutions providing for a complete or partial liquidation, dissolution, restructuring, recapitalization or other reorganization of the Company;

(h) acquire (including by merger, consolidation, or acquisition of stock or assets) any Person (or any business line or division thereof) or assets, other than acquisitions of inventory, raw materials and other property in the ordinary course of business;

(i) incur any indebtedness for borrowed money or issue any debt securities or assume, guarantee or endorse, or otherwise as an accommodation become responsible for (whether directly, contingently or otherwise), the obligations of any Person for borrowed money, except (i) in connection with refinancings of existing indebtedness on terms no less favorable to the Company than (and in an aggregate principal amount not in excess of) such existing

indebtedness, (ii) for borrowings under the Company s existing credit facilities or issuances of commercial paper for working capital and general corporate purposes in the ordinary course of business, and (iii) other indebtedness not to exceed $10,000 in the aggregate;

(j) make any loans, advances or capital contributions to, or investments in, any other Person;

(k) terminate, cancel or renew, or agree to any material amendment to or waiver under, any Company Material Contract, or enter into or amend any Contract that, if existing on the date hereof, would be a Company Material Contract, in each case other than in the ordinary course of business;

(l) make any capital expenditure in excess of the Company s capital expenditure budget as disclosed to Parent prior to the date hereof, other than capital expenditures that are not, in the aggregate, in excess of $10,000;

(m) except to the extent required by (x) applicable Law, or (y) the existing terms of any Company Benefit Plan disclosed in Section 3.11(a) of the Company Disclosure Schedule as in effect as of the date hereof: (A) materially increase the compensation or benefits payable or to become payable to any Service Provider, other than annual merit increases in annual base salary or base rate of pay , in each case, in the ordinary course of business; (B) amend any Company Benefit Plan (other than any amendment that could not reasonably be expected result in a material additional cost to the Company or its affiliates, or obligate the Company or its affiliates to maintain such Company Benefit Plan beyond December 31, 2017), or establish, adopt, enter into any new arrangement that if in effect on the date hereof would be a Company Benefit Plan (for the avoidance of doubt, including, any employment, severance, change in control, retention, bonus guarantee or similar agreement or arrangement); (C) take any action to amend or waive any performance or vesting criteria or accelerate vesting, exercisability or funding under any Company Benefit Plan (including funding any grantor trust); (D) pay or award, or commit to pay or award, any bonuses or incentive compensation (other than annual bonuses payable in the ordinary course of business during the first quarter of the Company s fiscal year); (E) grant any equity-based or equity-linked awards; (F) enter into any collective bargaining agreement, or any works council, labor union or similar agreement or arrangement; (G) hire or terminate the employment (other than for cause due to the inability to provide services) of any officer; or (H) promote any officers or employees, except for new hires (in accordance with the restrictions under the foregoing clause (G)) or for a promotion of any existing employee that is in the ordinary course of business and prior notice of which is provided to the Parent;

(n) make any change in accounting policies, practices, principles, methods or procedures, other than as required by GAAP or by a Governmental Entity;

(o) compromise, settle or agree to settle any Proceeding other than compromises, settlements or agreements of Proceedings (excluding Transaction Litigation) in the ordinary course of business that involve only the payment of monetary damages not in excess of $10,000 individually or $50,000 in the aggregate, in any case without the imposition of equitable relief on, or the admission of wrongdoing by, the Company;

(p) (A) make, change or revoke any material Tax election, (B) change any of its material methods of reporting income or deductions for Tax purposes (or file a request to make any such change), (C) settle or compromise any material Tax liability, claim, audit or dispute, (D) surrender any right to claim a material Tax refund, (E) file any amended Tax Return with respect to any material Tax, (F) enter into any Tax allocation, sharing, indemnity or closing agreement, or (G) waive or extend the statute of limitations with respect to any Tax other than pursuant to extensions of time to file Tax Returns obtained in the ordinary course of business;

(q) enter into any new line of business or materially alter any existing line of business, other than in the ordinary course of business;

(r) voluntarily cancel, terminate or fail to renew (in a form and amount consistent with past practice) any material insurance policies covering the Company or any of its business, assets or properties; or

(s) authorize or enter into any Contract or otherwise make any commitment to do any of the foregoing.

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5.2 Access to Information; Confidentiality.

(a) From the date of this Agreement to the earlier of the Effective Time and the termination of this Agreement in accordance with Article 7, the Company shall: (i) provide to the Parent and Merger Sub and their respective Representatives reasonable access during normal business hours in such a manner as not to interfere unreasonably with the business conducted by the Company, upon prior notice to the Company, to the officers, employees, properties, offices and other facilities of the Company and to the books and records thereof and (ii) promptly furnish during normal business hours such information concerning the business, properties, Contracts, assets and liabilities of the Company as Parent or its Representatives may reasonably request; provided, however, that the Company shall not be required to afford such access or furnish such information to the extent that the Company reasonably believes that doing so would: (A) result in the loss of attorney-client privilege (but the Company shall use its commercially reasonable efforts to allow for such access or disclosure in a manner that does not result in a loss of attorney-client privilege), (B) result in the disclosure of any trade secrets of third parties or otherwise breach, contravene or violate any effective Contract existing on the date hereof to which the Company is party, or (C) breach, contravene or violate any applicable Law.

(b) Each of the Parent and Merger Sub agrees that it will not, and will cause its Representatives not to, prior to the Effective Time, use any information obtained pursuant to this Section 5.2 for any competitive or other purpose unrelated to the consummation of the Merger. The Mutual Confidentiality Agreement, dated August 14, 2015, by and between the Company and Parent, as amended by the Amendment to the Mutual Confidentiality Agreement, dated as of August 14, 2016 (the Confidentiality Agreement), shall apply with respect to information furnished under this Section 5.2 by the Company and its Representatives. Prior to the Closing, each of Parent and Merger Sub shall not, and shall cause their respective Representatives not to, contract or otherwise communicate with employees (other than members of the Company s senior leadership team), customers, suppliers or distributors of the Company and its Subsidiaries, or, except as required pursuant to Section 5.5, any Governmental Entity, regarding the business of the Company, this Agreement, or the Transactions, without the prior written consent of the Chief Executive Officer of the Company (which consent shall not be unreasonably withheld, conditioned or delayed).

5.3 No Solicitation.

(a) From and after the date hereof until the Effective Time, the Company shall, and shall cause its Representatives to, (x) immediately cease and cause to be terminated any discussions or negotiations with any Third Party that may be ongoing as of the date hereof with respect to any Acquisition Proposal, and (y) deliver a written notice to any such Third Party to the effect that the Company is terminating all discussions and negotiations with such Third Party with respect to any Acquisition Proposal, and requesting that such Third Party promptly return or destroy all confidential information concerning the Company. Except as expressly permitted by this Section 5.3, from and after the date hereofuntil the Effective Time, or, if earlier, the termination of this Agreement in accordance with Article 7, the Company shall and shall cause its Representatives not to on behalf of the Company, initiate, solicit, facilitate or knowingly encourage any Acquisition Proposal or the making or submission thereof, or engage in, continue or otherwise participate in any discussions or negotiations with a Third Party regarding any Acquisition Proposal (other than to inform any Third Party of the existence of the provisions contained in this Section 5.3) or furnish or provide any nonpublic information in connection with any Acquisition Proposal. Except as expressly permitted by this Section 5.3, from and after the date hereof until the Effective Time, or, if earlier, the termination of this Agreement in accordance with Article 7, neither the Company Board nor any committee thereof shall (i) adopt, approve or recommend, or publicly propose to adopt, approve or recommend, any Acquisition Proposal, (ii) withdraw, change, qualify, withhold or modify, or publicly propose to withdraw, change, qualify, withhold or modify, in a manner adverse to Parent or Merger Sub, the Company Board Recommendation, (iii) fail to include the Company Board Recommendation in the Proxy Statement, (iv) in the event a tender offer that constitutes an Acquisition Proposal

subject to Regulation 14D under the Exchange Act is commenced, fail to recommend against such Acquisition Proposal in any solicitation or recommendation statement made on Schedule 14D-9 within ten (10) Business Days of such commencement,

(v) approve, authorize or cause or permit the Company to enter into any merger agreement, acquisition agreement, letter of intent, memorandum of understanding or other similar agreement relating to any Acquisition Proposal (a Company Acquisition Agreement), or (vi) resolve or agree to do any of the foregoing (any action set forth in the foregoing clauses (i) through (vi) of this sentence, a Change of Board Recommendation).

(b) Notwithstanding anything to the contrary contained in Section 5.3(a), if at any time following the date hereofand prior to the receipt of the Company Stockholder Approval (i) the Company has received a bona fide written Acquisition Proposal from a Third Party, (ii) the Company has not breached this Section 5.3 (excluding immaterial, unintentional violations) and (iii) the Company Board (or a duly authorized committee thereof) determines in good faith, after consultation with its financial advisors and outside legal counsel, based on information then available, that such Acquisition Proposal constitutes, or could reasonably be expected to result in, a Superior Proposal and that failure to take such actions would breach, or would reasonably be expected to breach, its fiduciary duties under applicable Law, then the Company may (A) furnish information with respect to the Company to the Third Party making such Acquisition Proposal, its representatives and potential sources of financing pursuant to (but only pursuant to) one or more Acceptable Confidentiality Agreements and (B) participate in discussions or negotiations with the Third Party making such Acquisition Proposal regarding such Acquisition Proposal; provided, however, that any non-public information concerning the Company provided or made available to any Third Party shall, to the extent not previously provided or made available to Parent or Merger Sub, be provided or made available to Parent or Merger Sub as promptly as reasonably practicable (and in no event later than twenty-four hours) after it is provided or made available to such Third Party.

(c) The Company shall promptly (and in any event within 24 hours) notify Parent in writing of the receipt of any Acquisition Proposal, which notice shall identify the Third Party making such Acquisition Proposal and include a copy of such Acquisition Proposal (or, where such Acquisition Proposal was not submitted in writing, a reasonably detailed written description of such Acquisition Proposal including a summary of its material terms and conditions). Without limiting the foregoing, the Company shall keep Parent promptly informed (and in any event within 24 hours) in all material respects of the status of, and any material communications relating to, such Acquisition Proposal (including any change in the price or other material terms thereof). The Company shall not terminate, amend, modify, waive or fail to enforce any provision of any standstill or similar obligation of any Person unless the Company Board (or a duly authorized committee thereof) determines in good faith, after consultation with its outside legal counsel, that the failure to take such action would breach, or would reasonably be expected to breach, its fiduciary duties under applicable Law; provided, that the Company promptly (and in any event within 24 hours) advises Parent that it is taking such action.

(d) Notwithstanding anything to the contrary contained in Section 5.3(a), if the Company has received a bona fide written Acquisition Proposal from a Third Party (other than as a result of a breach of this Section 5.3) that the Company Board (or any duly authorized committee thereof) determines in good faith, after consultation with its financial advisors and outside legal counsel, constitutes a Superior Proposal, the Company Board may at any time prior to the receipt of the Company Stockholder Approval, effect a Change of Board Recommendation with respect to such Superior Proposal (and terminate this Agreement pursuant to Section 7.1(g)), subject to the requirements of this Section 5.3(d). The Company shall not be entitled to effect a Change of Board Recommendation pursuant to this Section 5.3(d) (or terminate this Agreement pursuant to Section 7.1(g)) unless:

(i) the Company Board shall have determined in good faith, after consultation with its outside legal counsel, that the failure to make such a Change of Board Recommendation in response to the receipt of such Superior Proposal would breach, or would reasonably be expected to breach, its fiduciary duties under applicable Law;

(ii) the Company shall have provided to Parent at least three (3) Business Days prior written notice (the Notice Period) of the Company s intention to take such actions, which notice shall specify the basis for such Change of Board Recommendation, the identity of the Third Party making such Superior Proposal, the

material terms and conditions of such Superior Proposal, and shall include a copy of the applicable Company Acquisition Agreement and any other material documents with respect thereto,

(iii) during the Notice Period, if requested by Parent, the Company shall have, and shall have caused its Representatives to have, engaged in good faith negotiations with Parent and its Representatives regarding any amendments or modifications to this Agreement proposed in writing by Parent and intended to cause the relevant Acquisition Proposal to no longer constitute a Superior Proposal; and

(iv) at the end of such Notice Period, the Company Board shall have considered in good faith any proposed amendments or modifications to this Agreement (including a change to the price terms hereof) and the other agreements contemplated hereby that may be offered by Parent in writing (the Proposed Changed Terms) no later than 11:59 a.m., New York City time, on the last day of the Notice Period and shall have determined in good faith, after consultation with its financial advisors and outside legal counsel, that the Superior Proposal would continue to constitute a Superior Proposal if such Proposed Changed Terms were to be given effect and that failure to make a Change of Board Recommendation with respect to such Superior Proposal would reasonably be expected to breach its fiduciary duties under applicable Law.

In the event of any change to the price terms or any other material revision or amendment to the terms of such Superior Proposal, the Company shall be required to deliver a new written notice to Parent and to again comply with the requirements of this Section 5.3(d) (which shall apply *mutatis mutandis*) with respect to such new written notice.

(e) Notwithstanding anything to the contrary contained in Section 5.3(a), the Company Board (or a duly authorized committee thereof) may, at any time prior to the receipt of the Company Stockholder Approval, effect a Change of Board Recommendation if the Company Board (or a duly authorized committee thereof) determines in good faith that an Intervening Event has occurred and is continuing, subject to the requirements of this Section 5.3(e). The Company shall not be entitled to effect a Change of Board Recommendation pursuant to this Section 5.3(e) unless:

(i) the Company Board (or a duly authorized committee thereof) determines in good faith, after consultation with outside legal counsel, that the failure to effect a Change of Board Recommendation in response to such Intervening Event would breach, or would reasonably be expected to breach, its fiduciary duties under applicable Law;

(ii) the Company shall have provided to Parent at least three (3) Business Days prior written notice of the Company s intention to take such action, which notice shall specify the basis for such Change of Board Recommendation, including all available material information with respect to such Intervening Event;

(iii) during such three (3) Business Day period, if requested by Parent, the Company shall have, and shall have caused its Representatives to have, engaged in good faith negotiations with Parent and its Representatives regarding any amendments or modifications to this Agreement proposed in writing by Parent and intended to enable the Company Board to proceed with the Company Board Recommendation;

(iv) at the end of such three (3) Business Day period, the Company Board shall have considered in good faith any proposed amendments or modifications to this Agreement (including a change to the price terms hereof) and the other agreements contemplated hereby that may be offered in writing by Parent no later than 11:59 a.m., New York City time, on the last day of such three (3) Business Day period, and shall have determined in good faith, after consultation with its outside legal counsel, that the failure to effect a Change of Board Recommendation in response to such Intervening Event would reasonably be expected to breach its fiduciary duties under applicable Law.

(f) Nothing contained in this Section 5.3 shall prohibit the Company Board from (i) disclosing to the stockholders of the Company a position contemplated by Rule 14e-2(a), Rule 14d-9 and Item 1012(a) of

Regulation M-A promulgated under the Exchange Act; or (ii) making any disclosure to the stockholders of the Company if the Company Board (or any duly authorized committee thereof) determines in good faith, after consultation with outside legal counsel, that the failure to make such disclosure would breach, or would reasonably be expected to breach, its fiduciary duties or violate Applicable Law. The issuance by the Company or the Company Board of a stop, look and listen statement pending disclosure of its position, as contemplated by Rules 14d-9 and 14e-2(a) promulgated under the Exchange Act, shall not constitute a Change of Board Recommendation.

(g) The Company acknowledges and agrees that any violation of the restrictions set forth in this Section 5.3 by any of its Representatives shall be deemed to be a breach of this Section 5.3 by the Company.

(h) For purposes of this Agreement:

(i) Acquisition Proposal means any inquiry, offer or proposal from a Third Party concerning (A) a merger, consolidation, recapitalization, liquidation, dissolution or other business combination or similar transaction involving the Company, (B) a sale, lease or other disposition by merger, consolidation, business combination, share exchange, joint venture or otherwise, of assets of the Company representing twenty percent (20%) or more of the assets of the Company, based on their fair market value as determined in good faith by the Company Board (or any duly authorized committee thereof), (C) an issuance or acquisition (including by way of merger, consolidation, business combination or share exchange) of Equity Interests representing twenty (20%) or more of the voting power of the Company, or (D) any combination of the foregoing (in each case, other than the Merger).

(ii) Superior Proposal means a bona fide written Acquisition Proposal (except the references therein to twenty percent (20%) shall be replaced by fifty percent (50%)) that is not solicited or received in violation, or resulting from any breach, of this Section 5.3 and that the Company Board (or a duly authorized committee thereof) determines in good faith, after consultation with its financial advisors and outside legal counsel, taking into account such factors as the Company Board (or any duly authorized committee thereof) considers in good faith to be appropriate (including the conditionality, timing and likelihood of consummation of such proposals), is reasonably likely to be consummated in accordance with its terms and, if consummated, would be more favorable from a financial point of view to the Company s stockholders than the Merger (taking in account any Proposed Changed Terms).

(iii) Intervening Event means any event, change, effect, development, state of facts, condition or occurrence that is material to the Company that (A) was not known to or by the Company Board and could not reasonably be expected to have been known to or by the Company Board as of or prior to the date of this Agreement (or if known, the magnitude or material consequences of which were not known and could not reasonably be expected to have been known to or by the Company Board as of or prior to the date of this Agreement), and (B) does not involve or relate to the receipt, existence or terms of an Acquisition Proposal.

5.4 SEC Filings; Other Actions.

(a) As promptly as reasonably practicable after the execution of this Agreement, (i) the Company shall prepare and file the Proxy Statement with the SEC, which shall, subject to a Change of Board Recommendation having been effected in accordance with Section 5.3, include the Company Board Recommendation and (ii) Parent shall prepare and file with the SEC the Form S-4, in which the Proxy Statement will be included as a prospectus, in connection with the registration under the Securities Act of the shares of Parent Common Stock to be issued in the Merger. Each of Parent and the Company shall use its reasonable best efforts to cause the Form S-4 to be declared effective as promptly as practicable after such filing (including by responding to comments of the SEC) and, prior to the effective date of the Form S-4, each of Parent and the Company shall take all action reasonably required to be taken by it under any applicable securities Laws in connection with the issuance of Parent Common Stock. Each of Parent and the

Company shall furnish all information as may be reasonably

requested by the other party in connection with any such action and the preparation, filing and distribution of the Form S-4 and the Proxy Statement. As promptly as reasonably practicable after the Form S-4 shall have become effective, the Company shall cause the Proxy Statement to be mailed to its stockholders as of the record date established for the Company Meeting. No filing of, or amendment or supplement to, the Form S-4 will be made by Parent, and no filing of, or amendment or supplement to, the Proxy Statement will be made by the Company, in each case without providing the other party with a reasonable opportunity to review and comment thereon, and each of Parent and the Company shall give reasonable and good faith consideration to any comments made by other party or its counsel. If at any time prior to the Effective Time any information relating to the Company or Parent, or any of their respective affiliates, directors or officers, should be discovered by the Company or Parent which should be set forth in an amendment or supplement to either the Form S-4 or the Proxy Statement, so that either such document would not include any misstatement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, the party that discovers such information shall promptly notify the other party and an appropriate amendment or supplement describing such information shall be promptly filed with the SEC and, to the extent required by applicable Law, disseminated to the stockholders of the Company. Each party shall notify the other party promptly of the time when the Form S-4 has become effective, and of the issuance of any stop order or suspension of the qualification of the shares of Parent Common Stock issuable in connection with the Merger for offering or sale in any jurisdiction, and each of Parent and the Company shall use its reasonable best efforts to have any such stop order or suspension lifted, reversed or otherwise terminated. Parent and the Company shall also take any other action required to be taken under the Securities Act, the Exchange Act, any applicable foreign or state securities or blue sky Laws and the rules and regulations thereunder, the DGCL, the rules of NASDAQ in connection with the filing and distribution of the Proxy Statement and the rules of NYSE in connection with the filing and distribution of the Form S-4, and the solicitation of proxies from the Company s stockholders thereunder. In addition, each party agrees to provide the other party and their respective counsel with copies of any written comments, and shall inform the other party of any oral comments, that such party or its counsel may receive from time to time from the SEC or its staff with respect to the Form S-4 or the Proxy Statement promptly after receipt of such comments, and any written or oral responses thereto. Each party and their respective counsel shall be given a reasonable opportunity to review and comment on any such written responses and each party shall give reasonable and good faith consideration to any comments made by other party or its counsel.

(b) Subject to the other provisions of this Agreement, the Company shall (i) take all action necessary in accordance with the DGCL, the Company Charter, and the Company Bylaws to duly call, give notice of, and, as soon as practicable following the effectiveness of the Form S-4, convene and hold a meeting of its stockholders for the purpose of obtaining the Company Stockholder Approval (the Company Meeting), with the record date and meeting date of the Company Meeting to be selected after reasonable consultation with Parent, and (ii) subject to a Change of Board Recommendation having been effected in accordance with Section 5.3, shall include the Company Board Recommendation in the Proxy Statement and use its reasonable best efforts to solicit from its stockholders proxies in favor of the adoption of this Agreement and the transactions contemplated hereby (including by postponing or adjourning the Company Meeting, after consultation with Parent, to allow additional solicitation of proxies in order to obtain the Company Stockholder Approval if necessary). The Company may postpone or adjourn the Company Meeting from time to time (i) with the consent of Parent, (ii) if a quorum has not been established, (iii) to allow reasonable additional time to solicit additional proxies if necessary in order to obtain the Company Stockholder Approval, (iv) after consultation with Parent, to allow reasonable additional time for the filing and mailing of any supplemental or amended disclosure that the Company Board has determined in good faith after consultation with outside legal counsel is necessary under applicable Law and for such supplemental or amended disclosure to be disseminated and reviewed by the Company s stockholders prior to the Company Meeting, or (v) if required by Law.

5.5 Appropriate Action; Consents; Filings.

(a) Upon the terms and subject to the conditions set forth in this Agreement, each of the parties agrees to use its reasonable best efforts to take, or cause to be taken, all actions that are necessary, proper or advisable

under this Agreement and applicable Law to consummate and make effective the Merger and the other Transactions contemplated by this Agreement as promptly as practicable, including using reasonable best efforts to accomplish the following: (i) obtain all consents, approvals or waivers from, or participation in other discussions or negotiations with, third parties, including under any Contract to which the Company or Parent is party or by which such Person or any of their respective properties or assets may be bound (provided, that the Company shall not be required to pay or agree to pay any material consent fees or other material payments requested by any such third parties), (ii) obtain all necessary actions or nonactions, waivers, consents, approvals, orders and authorizations from Governmental Entities, make all necessary registrations, declarations and filings with and take all steps as may be necessary to obtain an approval or waiver from, or to avoid any Proceeding by, any Governmental Entity, (iii) resist, contest or defend any Proceeding (including administrative or judicial Proceedings) challenging the Merger or the completion of the Transactions, including seeking to have vacated, lifted, reversed or overturned any decree, judgment, injunction or other order (whether temporary, preliminary or permanent) that is in effect and that could restrict, prevent or prohibit consummation of the Transactions, and (iv) execute and deliver any additional instruments necessary to consummate the Transactions and fully to carry out the purposes of this Agreement. Each of the parties shall furnish to each other party such necessary information and reasonable assistance as such other party may reasonably request in connection with the foregoing. Subject to applicable Law relating to the exchange of information, the Company and Parent shall have the right to review in advance, and to the extent practicable each shall consult with the other in connection with, all of the information relating to the Company or Parent, as the case may be, that appears in any filing made with, or written materials submitted to, any third party and/or any Governmental Entity in connection with the Merger and the Transactions. In exercising the foregoing rights, each of the Company and Parent shall act reasonably and as promptly as practicable. Subject to applicable Law and the instructions of any Governmental Entity, the Company and Parent shall keep each other reasonably apprised of the status of matters relating to the completion of the Transactions, including promptly furnishing the other with copies of notices or other written substantive communications received by the Company or Parent, as the case may be, from any Governmental Entity and/or third party with respect to such transactions, and, to the extent practicable under the circumstances, shall provide the other party and its counsel with the opportunity to participate in any meeting with any Governmental Entity in respect of any substantive filing, investigation or other inquiry in connection with the transactions contemplated hereby.

(b) Nothing contained in this Agreement shall give Parent or Merger Sub, directly or indirectly, the right to control or direct the operations of the Company prior to the consummation of the Merger.

5.6 Certain Notices. From and after the date of this Agreement until the earlier of the Effective Time or the termination of this Agreement in accordance with Article 7, unless prohibited by applicable Law, each party shall give prompt notice to the other parties if any of the following occur: (a) receipt of any notice or other communication in writing from any Person alleging that the consent or approval of such Person is or may be required in connection with the Transactions; (b) receipt of any notice or other communication from any Governmental Entity, NASDAQ or NYSE (or any other securities market) in connection with the Transactions; or (c) such party becoming aware of the occurrence of an event that could prevent or delay beyond the Outside Date the consummation of the Transactions or that would reasonably be expected to result in any of the conditions to the Merger set forth in Article 6 being incapable of satisfaction. Any such notice pursuant to this Section 5.6 shall not affect any representation, warranty, covenant or agreement contained in this Agreement and any failure to make such notice (in and of itself) shall not be taken into account in determining whether the conditions set forth in Article 6 have been satisfied or give rise to any right of termination set forth in Article 7.

5.7 Public Announcements. So long as this Agreement is in effect, Parent and Merger Sub, on the one hand, and the Company, on the other, shall not issue any press release or make any public statement with respect to the Merger or this Agreement without the prior written consent of the other party (which consent shall not be unreasonably withheld, conditioned or delayed), except (a) as may be required by applicable Law or the rules or regulations of any applicable

United States securities exchange or regulatory or governmental body to which the relevant party is subject, in which case the party required to make the release or announcement shall use its

commercially reasonable efforts to allow each other party reasonable time to comment on such release or announcement in advance of such issuance, or (b) with respect to any press release or other public statement by the Company permitted by Section 5.3. The press release announcing the execution and delivery of this Agreement shall be a joint release of, and shall not be issued prior to the approval of each of, the Company and Parent. The Company shall file a current report on Form 8-K with the SEC attaching its press release and copy of this Agreement as exhibits.

5.8 Indemnification.

(a) From and after the Effective Time, Parent shall, and shall cause the Surviving Corporation to, indemnify, defend and hold harmless, and shall advance expenses as incurred, to the extent provided in (i) the Company Charter or the Company Bylaws in effect as of the date of this Agreement and (ii) any indemnification Contract of the Company in effect as of the date of this Agreement listed on Section 5.8 of the Company Disclosure Schedule, each present and former director and officer of the Company and each of its employees who serves as a fiduciary of a Company Benefit Plan (in each case, when acting in such capacity) (each, an Indemnitee and, collectively, the Indemnitees) against any costs or expenses (including reasonable attorneys fees), judgments, settlements, fines, losses, claims, damages or liabilities incurred in connection with any Proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to any action or omission by such Indemnitee relating to their position with the Company occurring at or prior to the Effective Time, including in connection with this Agreement or the Transactions.

(b) Parent agrees that all rights to exculpation, indemnification or advancement of expenses arising from, relating to, or otherwise in respect of, acts or omissions occurring prior to the Effective Time (including in connection with this Agreement or the Transactions) existing as of the Effective Time in favor of an Indemnitee as provided in (i) the Company Charter or the Company Bylaws in effect as of the date of this Agreement and (ii) any indemnification Contract of the Company in effect as of the date of this Agreement listed on Section 5.8 of the Company Disclosure Schedule shall survive the Merger and shall continue in full force and effect in accordance with their terms. For a period of no less than six years from the Effective Time, Parent shall cause the Surviving Corporation to, and the Surviving Corporation shall, maintain in effect the exculpation, indemnification and advancement of expenses provisions in favor of an Indemnitee as provided in (i) the Company Charter or the Company Bylaws in effect as of the date of this Agreement and (ii) any indemnification Contract of the Company in effect as of the date of this Agreement listed on Section 5.8 of the Company Disclosure Schedule, and shall not amend, repeal or otherwise modify any such provisions in any manner that would adversely affect the rights thereunder of any individuals who immediately before the Effective Time were current or former directors, officers or employees of the Company; provided, however, that all rights to exculpation, indemnification and advancement of expenses in respect of any Proceeding pending or asserted or any claim made within such period shall continue until the final disposition of such Proceeding.

(c) Prior to the Effective Time, the Company shall purchase a prepaid directors and officers liability insurance and fiduciary liability insurance for the benefit of those persons that are directors and officers of the Company, as of the date of this Agreement and as of the Closing Date, that provides coverage for events occurring prior to the Closing Date for an aggregate period of six years with respect to claims arising from facts or events that occurred on or before the Effective Time, including with respect to this Agreement or the Transactions, that is substantially equivalent to and in any event not less favorable in the aggregate than the existing directors and officers liability insurance and fiduciary liability insurance policy of the Company, or, if substantially equivalent insurance coverage is unavailable, the best available coverage then available

(d) In the event that either Parent or the Surviving Corporation or any of its successors or assigns (i) consolidates with or merges into any other person and is not the continuing or surviving corporation or entity of such consolidation or

merger or (ii) transfers or conveys all or substantially all of its properties and assets to any person, then, and in each case, Parent shall, and shall cause the Surviving Corporation to, cause proper provision to be made so that such successor or assign shall expressly assume the obligations set forth in this Section 5.8.

(e) The provisions of this Section 5.8 are (i) intended to be for the benefit of, and shall be enforceable by, each Indemnitee, his or her heirs and his or her representatives and (ii) in addition to, and not in substitution for, any other rights to indemnification, expense advancement or contribution that any such individual may have under the Company Charter, the Company Bylaws or similar organization documents in effect as of the date of this Agreement or in any indemnification Contract of the Company in effect as of the date of this Agreement listed on Section 5.8 of the Company Disclosure Schedule. From and after the Effective Time, the obligations of Parent under this Section 5.8 shall not be terminated or modified in such a manner as to adversely affect the rights of any Indemnitee to whom this Section 5.8 applies unless (x) such termination or modification is required by applicable Law or (y) the affected Indemnitee shall have consented in writing to such termination or modification (it being expressly agreed that the Indemnitees to whom this Section 5.8 applies shall be third party beneficiaries of this Section 5.8).

(f) Nothing in this Agreement is intended to, shall be construed to or shall release, waive or impair any rights to directors and officers insurance claims under any policy that is or has been in existence with respect to the Company for any of its directors, officers or employees, it being understood and agreed that the indemnification provided for in this Section 5.8 is not prior to or in substitution for any such claims under such policies.

5.9 Parent Agreements Concerning Merger Sub. Parent shall take all actions necessary or advisable to cause Merger Sub to perform its covenants, agreements and obligations under this Agreement in accordance with the terms hereof. Parent shall, promptly following execution of this Agreement, approve and adopt this Agreement in its capacity as sole stockholder of Merger Sub and deliver to the Company evidence of its vote or action by written consent approving and adopting this Agreement in accordance with applicable Law and the certificate of incorporation and bylaws of Merger Sub.

5.10 Takeover Statutes. If any state takeover Law or state Law that purports to limit or restrict business combinations or the ability to acquire or vote Company Shares (including any control share acquisition, fair price, business combination or other similar takeover Law) becomes or is deemed to be applicable to the Company, Parent or Merger Sub, the Merger or any other transaction contemplated by this Agreement, then the Company and the Company Board shall take all action reasonably available to it to render such Law inapplicable to the foregoing.

5.11 Section 16 Matters. Prior to the Effective Time, the Company shall take all such steps as may be required to cause the transactions contemplated by this Agreement and any other dispositions of Company Shares (including derivative securities with respect to Company Shares) resulting from the Transactions by each individual who is subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to the Company, to be exempt under Rule 16b-3 promulgated under the Exchange Act.

5.12 Stockholder Litigation. The Company shall give Parent reasonable opportunity to participate in the defense or settlement of any stockholder litigation against the Company and/or its directors and officers relating to the transactions contemplated by this Agreement, including the Merger (Transaction Litigation), and no such settlement of any Transaction Litigation shall be agreed to without the prior written consent of Parent (such consent not to be unreasonably withheld, conditioned or delayed). The Company shall promptly notify Parent of any Transaction Litigation and shall keep Parent reasonably and promptly informed with respect to the status thereof.

5.13 Stock Exchange Delisting. The Surviving Corporation shall cause the Company s securities to be de-listed from the NASDAQ Stock Market and de-registered under the Exchange Act as promptly as practicable following the Effective Time, and prior to the Effective Time the Company shall reasonably cooperate with Parent with respect thereto.

5.14 Tax Matters. None of the parties shall (and each party shall cause its respective affiliates not to) take any action that would reasonably be expected to prevent or impede the Merger from qualifying as a

reorganization within the meaning of Section 368 of the Code, and the Treasury Regulations promulgated thereunder. Each of Parent, Merger Sub and the Company shall report the Merger as a reorganization within the meaning of Section 368 of the Code and shall not take any position inconsistent with such treatment unless otherwise required pursuant to (i) a determination within the meaning of Section 1313(a) of the Code or (ii) a settlement on IRS Form 870-AD.

5.15 Employee Benefit Matters. From and after the Closing Date, Parent shall, or shall cause one of its affiliates to, specifically assume and honor in accordance with their terms any employment, severance and termination agreement or arrangement of or for a Continuing Employee set forth on Section 5.15(a) of the Company Disclosure Schedule. Notwithstanding the foregoing, neither Parent nor any of its affiliates shall be obligated to continue to employ any Continuing Employee for any specific period of time following the Closing Date.

ARTICLE 6

CONDITIONS TO CONSUMMATION OF THE MERGER

6.1 Conditions to Obligations of Each Party Under This Agreement. The respective obligations of each party to consummate the Merger shall be subject to the satisfaction (or waiver, if permissible under Law) at or prior to the Effective Time of each of the following conditions:

(a) The Company Stockholder Approval shall have been obtained.

(b) The consummation of the Merger shall not then be restrained, enjoined or prohibited by any Order (whether temporary, preliminary or permanent) of any Governmental Entity and there shall not be in effect any Law enacted or promulgated by any Governmental Entity that prevents or makes illegal the consummation of the Merger.

(c) The shares of Parent Common Stock issuable to the stockholders of the Company pursuant to this Agreement shall have been approved for listing on NYSE, subject to official notice of issuance.

(d) The Form S-4 shall have been declared effective and no stop order suspending the effectiveness of the Form S-4 shall be in effect and no proceedings for such purpose shall be pending before the SEC.

(e) Holders representing no more than twenty percent (20%) of the Company Shares shall have exercised appraisal, dissenters or similar rights under applicable Law with respect to their shares by virtue of the Merger.

6.2 Conditions to Obligations of the Company Under This Agreement. The obligation of the Company to effect the Merger is further subject to the fulfillment (or waiver by the Company) at or prior to the Effective Time of the following conditions:

(a) Each representation and warranty of Parent and Merger Sub (i) contained in Section 4.5 (Capitalization) shall be true and correct in all respects (other than de minimis exceptions) as of the date of this Agreement and at and as of the Effective Time as though made at and as of the Effective Time, except for representations and warranties that relate to a specific date or time (which need only be true and correct as of such date or time) and (ii) set forth in Article 4 (other than the representations set forth in Section 4.5), without giving effect to any qualifications as to materiality or Parent Material Adverse Effect or other similar qualifications contained therein, shall be true and correct as of the date of this Agreement and at and as of the Effective Time as though made at and as of the Effective Time, except for representations and warranties that relate to a specific date or time (which need only be true and correct as of such date or time), and except as has not had and would not reasonably be expected to have, individually or in the

aggregate with all other failures to be true or correct, a Parent Material Adverse Effect.

(b) Parent and Merger Sub shall have performed or complied with in all material respects all covenants and agreements required to be performed or complied with by them under this Agreement at or prior to the Closing Date.

(c) Parent shall have delivered to the Company a certificate, dated the Closing Date and signed by a duly authorized officer of Parent, certifying to the effect that the conditions set forth in Sections 6.2(a) and 6.2(b) have been satisfied.

6.3 Conditions to Obligations of Parent and Merger Sub Under This Agreement. The obligations of Parent and Merger Sub to effect the Merger are further subject to the fulfillment (or waiver by Parent and Merger Sub) at or prior to the Effective Time of the following conditions:

(a) Each representation and warranty of the Company (i) contained in Section 3.2(a) (Capitalization) shall be true and correct in all respects (other than de minimis exceptions) as of the date of this Agreement and at and as of the Effective Time as though made at and as of the Effective Time, except for representations and warranties that relate to a specific date or time (which need only be true and correct as of such date or time); (ii) contained in Sections 3.1 (Corporate Organization), 3.3 (Authority; Execution and Delivery; Enforceability) and 3.19 (Broker s Fees) shall be true and correct in all material respects as of the date of this Agreement and at and as of the Effective Time as though made at and as of the Effective Time, except for representations and warranties that relate to a specific date or time (which need only be true and correct in all material respects as of such date or time); and (iii) set forth in Article 3 (other than the representations and warranties referenced in the immediately foregoing clauses (i) and (ii)), without giving effect to any qualifications as to materiality or Company Material Adverse Effect or other similar qualifications contained therein, shall be true and correct as of the date of this Agreement and at and as of the Effective Time as though made at and as of the Effective Time, except for representations and warranties that expressly relate to a specific date or time (which need only be true and correct as of such date or time), except as has not had and would not reasonably be expected to have, individually or in the aggregate with all other failures to be true or correct, a Company Material Adverse Effect.

(b) The Company shall have performed and complied with in all material respects all covenants and agreements required to be performed or complied with by it under the Merger Agreement at or prior to the Closing Date.

(c) Since the date of this Agreement, there has not been any change, event, development, condition, occurrence or effect that has had or would reasonably be expected to have a Company Material Adverse Effect.

(d) The Company shall have delivered to Parent a certificate, dated the Closing Date and signed by an executive officer of the Company, certifying to the effect that the conditions set forth in Sections 6.3(a) and 6.3(b) have been satisfied.

(e) The Company shall have delivered to Parent a statement satisfying the requirements of Treasury Regulations Sections 1.897-2(h) and 1.1445-2(c)(3) certifying that interests in the Company are not United States real property interests within the meaning of Section 897(c) of the Code.

ARTICLE 7

TERMINATION, AMENDMENT AND WAIVER

7.1 Termination. This Agreement may be terminated, and the Merger and the other transactions contemplated hereby may be abandoned, by action taken or authorized by the board of directors of the terminating party or parties:

(a) By mutual written consent of Parent and the Company;

(b) By either the Company or Parent, if the Company Stockholder Approval shall not have been obtained upon a vote taken at the Company Meeting duly convened therefor or any adjournment or postponement thereof;

(c) By either the Company or Parent, if any Governmental Entity shall have issued an Order permanently restraining, enjoining or otherwise prohibiting, prior to the Effective Time, the consummation of the Merger, and such Order shall have become final and non-appealable, or any Law enacted or promulgated by any Governmental Entity is in effect that prevents or makes illegal the consummation of the Merger; provided, that the right to terminate this Agreement pursuant to this Section 7.1(c) shall not be available to a party if the issuance of, or failure to resolve or have vacated or lifted, such Order was primarily due to a breach by such party of any of its covenants or agreements under this Agreement, including pursuant to Section 5.5;

(d) By either the Company or Parent if (i) the Effective Time shall not have occurred on or before July 24, 2017 (the Outside Date); provided that neither the Company nor Parent may terminate this Agreement pursuant to this Section 7.1(d) if it is in breach of this Agreement and such breach has primarily caused or resulted in the failure of the Closing to have occurred prior to the Outside Date;

(e) By Parent, at any time prior to the receipt of the Company Stockholder Approval, if the Company Board shall have effected a Change of Board Recommendation, whether or not in compliance with Section 5.3 (it being understood and agreed that any written notice of the Company s intention to make a Change of Board Recommendation prior to effecting such Change of Board Recommendation in accordance with Section 5.3(e) or 5.3(f) shall not (in and of itself) result in Parent or Merger Sub having any termination rights pursuant to this Section 7.1(e)); provided, that Parent s right to terminate this Agreement pursuant to this Section 7.1(e) shall expire at 5:00 p.m. (New York City time) on the 5th calendar day following the date on which such right to terminate first arose;

(f) By the Company, at any time prior to the receipt of the Company Stockholder Approval, if the Company Board shall have effected a Change of Board Recommendation, or determined to effect a Change of Board Recommendation substantially concurrently with a termination pursuant to this Section 7.1(f), with respect to a Superior Proposal, but only if the Company shall have complied with its obligations under Section 5.3 with respect to such Superior Proposal and shall have approved, and substantially concurrently with the termination hereunder, the Company shall have entered into, a Company Acquisition Agreement with respect to such Superior Proposal; provided, however, that such termination pursuant to this Section 7.1(g) shall not be effective and the Company shall not enter into any such Company Acquisition Agreement unless prior to or concurrently with such termination the Company has paid the Company Termination Fee to or for the account of Parent pursuant to Section 7.3;

(g) By Parent, at any time prior to the Effective Time, if: (i) there has been a breach by the Company of its representations, warranties, covenants or agreements contained in this Agreement, in each case, such that any condition to the Merger contained in Sections 6.3(a) or 6.3(b) is not reasonably capable of being satisfied while such breach is continuing, (ii) Parent shall have delivered to the Company written notice of such breach and (iii) such breach is not capable of cure in a manner sufficient to allow satisfaction of the conditions in Sections 6.3(a) and 6.3(b) prior to the Outside Date or at least 30 days shall have elapsed since the date of delivery of such written notice to the Company and such breach shall not have been cured; provided, however, that Parent shall not be permitted to terminate this Agreement pursuant to this Section 7.1(h) if Parent or Merger Sub is then in material breachof its representations, warranties, covenants or agreements contained in this Agreement; or

(h) By the Company, at any time prior to the Effective Time, if: (i) there has been a breach by Parent or Merger Sub of any of its representations, warranties, covenants or agreements contained in this Agreement in each case, such that any condition to the Merger contained in Sections 6.2(a) or 6.2(b) is not reasonably capable of being satisfied while such breach is continuing, (ii) the Company shall have delivered to Parentwritten notice of such breach and (iii) such

breach is not capable of cure in a manner sufficient to allow satisfaction of the

conditions in Sections 6.2(a) and 6.2(b) prior to the Outside Date or at least 30 days shall have elapsed since the date of delivery of such written notice to Parentand such breach shall not have been cured; provided, however, that the Company shall not be permitted to terminate this Agreement pursuant to this Section 7.1(I) if the Company is then in material breach of its representations, warranties, covenants or agreements contained in this Agreement.

7.2 Effect of Termination.

In the event of termination of this Agreement by either the Company or Parent as provided in Section 7.1, written notice thereof shall be given to the other party or parties, specifying the provisions hereof pursuant to which such termination is made and the basis therefor described in reasonable detail, this Agreement shall forthwith become void and have no further force and effect (other than the Section 7.2, Section 7.3, and Article 8, each of which shall survive termination of this Agreement), and, subject to the foregoing, there shall be no liability or obligation on the part of Parent, Merger Sub or the Company or their respective Subsidiaries, officers, directors, Representatives or affiliates, whether arising before or after such termination, based on, arising out of or relating to this Agreement or the negotiation, execution, performance or subject matter hereof; provided, that, subject to Section 7.3 (including the limitations on liability contained therein), nothing herein shall relieve any party from liabilities or damages incurred or suffered as a result of a willful and material breach of any representations, warranties, covenants or other agreements set forth in this Agreement prior to such termination.

7.3 Termination Fee.

(a) The parties hereto agree that if this Agreement is terminated pursuant to Section 7.1(e), or Section 7.1(f), then the Company shall pay to Parent prior to or concurrently with such termination, in the case of a termination by the Company, or within two (2) Business Days thereafter, in the case of a termination by Parent, the Termination Fee. The Termination Fee means $550,000.

(b) The parties hereto agree that if (x) this Agreement is terminated by the Company or Parent pursuant to Section 7.1(d) or by Parent pursuant to Section 7.1(g) based solely on a breach by the Company of a covenant or agreement contained in this Agreement, (y) an Acquisition Proposal has been announced publicly or made to the Company after the date hereof (but prior to the termination of this Agreement) and such Acquisition Proposal has not been withdrawn prior to the termination of this Agreement, and (z) the Company enters into a Company Acquisition Agreement or consummates an Acquisition Proposal within twelve months after such termination, then the Company shall pay the Termination Fee to Parenton the earlier of the date of entry into such Company Acquisition Agreement or consummation of such Acquisition Proposal. For purposes of this Section 7.3(b), the term Acquisition Proposal shall have the meaning assigned to such term in Section 5.3(h)(i), except that the references to twenty percent (20%) shall be deemed to be references to fifty percent (50%) .

(c) The parties hereto agree that if this Agreement is terminated pursuant to Section 7.1(g) based solely on a breach by the Company of a covenant or agreement contained in this Agreement, and within six (6) months after the date of such termination the Company enters into a definitive agreement with a Third Party in respect of an Acquisition Proposal (regardless of when the Company received such Acquisition Proposal), then the Company shall pay to Parent the reasonable costs, fees and expenses incurred by Parent, its affiliates and their Representatives in connection with the investigation, due diligence, negotiation and documentation of this Agreement, such amount not to exceed $400,000 in the aggregate (the Expense Reimbursement), provided, however, that in addition to the Expense Reimbursement, if the Company had willfully breached Section 5.3 in any material respect, then in the circumstances in which an Expense Reimbursement shall be paid, the Company shall also pay an additional $200,000 (Additional Expense Amount). In the event the Expense Reimbursement is paid to Parent and the Termination Fee thereafter becomes payable, the Termination Fee otherwise payable shall be reduced by the amount of such Expense Reimbursement and

Additional Expense Amount, if any.

(d) All payments under this Section 7.3 shall be made by wire transfer of immediately available funds to an account designated in writing by Parent, or in the absence of such designation, an account established for the sole benefit of Parent.

(e) Each of the parties acknowledges that (i) the agreements contained in this Section 7.3 are an integral part of the transactions contemplated by this Agreement, and (ii) the damages resulting from termination of this Agreement under circumstances in which the Termination Fee or Expense Reimbursement is payable pursuant to this Section 7.3 are not a penalty but rather constitute liquidated damages in a reasonable amount that will compensate Parent and Merger Sub for the efforts and resources expended and opportunities foregone while negotiating this Agreement in in reliance on this Agreement and on the expectation of the consummation of the transactions contemplated hereby, and (iii) without these agreements, Parent, Merger Suband the Company would not enter into this Agreement. Accordingly, if the Company fails to pay the Termination Fee when due, and, in order to obtain such payment, Parent commences a Proceeding that results in a judgment against the Company for the Termination Fee, the Company shall pay to Parent, together with the Termination Fee, (A) interest on the Termination Fee from the date of termination of this Agreement at a rate per annum equal to the Prime Rate and (B) Parent s costs and expenses (including reasonable attorneys fees) in connection with such Proceeding. For the avoidance of doubt, in no event shall the Company be required to pay the Termination Fee on more than one occasion

(f) In circumstances where the Termination Fee, Expense Reimbursement or Additional Expense Amount is payable pursuant to this Section 7.3, Parent s receipt of the Termination Fee, Expense Reimbursement or Additional Expense Amount (as applicable) from or on behalf of the Company shall be Parent s and Merger Sub s sole and exclusive remedy (whether based in contract, tort or strict liability, by the enforcement of any assessment, by any legal or equitable proceeding, by virtue of any statute, regulation or applicable Laws or otherwise) against the Company and any of its former, current or future direct or indirect equity holders, general or limited partners, controlling persons, stockholders, members, managers, directors, officers, employees, agents, affiliates or assignees for all losses and damages suffered as a result of the failure of the Merger or the other transactions contemplated by this Agreement to be consummated and for any breach or failure to perform hereunder or otherwise, and upon payment of such amount, no such Person shall have any further liability or obligation relating to or arising out of this Agreement or the transactions contemplated hereby.

7.4 Amendment. This Agreement may be amended by each of the Company, Parent and Merger Sub by action taken by or on behalf of their respective boards of directors at any time prior to the Effective Time; provided, however, that, after receipt of the Company Stockholder Approval, no amendment may be made which, by Law or in accordance with the rules of any relevant stock exchange, requires further approval by the Company s stockholders without such approval. This Agreement may not be amended except by an instrument in writing signed by the parties hereto.

7.5 Waiver. At any time prior to the Effective Time, Parent and Merger Sub, on the one hand, and the Company, on the other hand, may (a) extend the time for the performance of any of the obligations or other acts of the other, (b) waive any breach of the representations and warranties of the other contained herein or in any document delivered pursuant hereto or (c) waive compliance by the other with any of the agreements or covenants contained herein; provided, however, that after receipt of the Company Stockholder Approval, there may not be any extension or waiver of this Agreement which decreases the Merger Consideration or which adversely affects the rights of the Company s stockholders hereunder without the approval of such stockholders. Any such extension or waiver shall be valid only if set forth in an instrument in writing signed by the party or parties to be bound thereby, but such extension or waiver or failure to insist on strict compliance with an obligation, covenant, agreement or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure.

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ARTICLE 8

GENERAL PROVISIONS

8.1 Non-Survival of Representations and Warranties. None of the representations, warranties or covenants in this Agreement or in any instrument delivered pursuant to this Agreement shall survive the Effective Time except that this Section 8.1 shall not limit any covenant or agreement of the parties which by its terms contemplates performance after the Effective Time, which shall survive to the extent expressly provided for herein.

8.2 Fees and Expenses. Subject to Section 7.2, all Expenses incurred by the parties hereto shall be borne solely and entirely by the party which has incurred the same.

8.3 Notices. Any notices or other communications to any party required or permitted under, or otherwise given in connection with, this Agreement shall be in writing and shall be deemed to have been duly given (a) when delivered or sent if delivered in Person or sent by facsimile transmission (provided confirmation of facsimile transmission is obtained), (b) on the fifth Business Day after dispatch by registered or certified mail or (c) on the next Business Day if transmitted by nationally recognized overnight courier, in each case, as follows (or to such other Persons or addressees as may be designated in writing by the party to receive such notice pursuant to a notice delivered in accordance with this Section 8.3):

If to Parent or Merger Sub, addressed to it at:

Intrexon Corporation

20374 Seneca Meadows Parkway

Germantown, MD 20876

Attention: Legal Department

Tel: (301) 556-9900

Fax: (301) 556-9902

Email: DLehr@intrexon.com; CUlrich@intrexon.com

with a copy (which shall not constitute notice) to:

Thompson Hine LLP

Two Alliance Center

3560 Lenox Road, Suite 1600

Atlanta, GA. 30326

Attention: Peter W. Smith

Tel: (404) 407.3635

Fax: (404) 541.2905

Email: Peter.Smith@thompsonhine.com

If to the Company, addressed to it at:

GenVec, Inc.

910 Clopper Road

Suite 220N

Gaithersburg, Maryland 20878

Attention: Chief Executive Officer

Tel: (240) 632-0740

Fax: (301) 944-1902

Email: notices@genvec.com

with a copy (which shall not constitute notice) to:

Hogan Lovells US LLP

100 International Drive

Suite 2000

Baltimore, Maryland 21202

Attention: Asher Rubin and William Intner

Tel: (410) 659-2777

Fax: (410) 659-2701

Email: asher.rubin@hoganlovells.com; william.intner@hoganlovells.com

8.4 Certain Definitions. For purposes of this Agreement, the term:

Acceptable Confidentiality Agreement means a confidentiality agreement that contains provisions that are no less favorable in the aggregate to the Company than those contained in the Confidentiality Agreement; provided, that any such confidentiality agreement need not prohibit the making of an Acquisition Proposal.

affiliate means, as to any Person, any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, the first-mentioned Person.

Anti-corruption Laws means Laws relating to anti-bribery or anti-corruption (governmental or commercial) which apply to the Company, including Laws that prohibit the corrupt payment, offer, promise or authorization of the payment or transfer of anything of value (including gifts or entertainment), directly or indirectly, to any foreign Government Official, foreign government employee or commercial entity to obtain a business advantage, including the U.S. Foreign Corrupt Practices Act of 1977, the U.K. Bribery Act of 2010 and all national and international Laws enacted to implement the OECD Convention on Combating Bribery of Foreign Officials in International Business Transactions.

beneficial ownership (and related terms such as beneficially owned or beneficial owner) has the meaning set forth in Rule 13d-3 under the Exchange Act.

Business Day means a day other than Saturday, Sunday or any day on which banks located in New York, New York are authorized or obligated by applicable Law to close.

Code means the United States Internal Revenue Code of 1986, as amended.

Company Material Adverse Effect means any change, event, condition, occurrence, state of facts, development or effect (an Effect) that, individually or in the aggregate, (i) has a material adverse effect on the business, properties, assets, condition or results of operations of the Company, take as a whole; provided, however, that adverse Effects arising out of, resulting from or attributable to the following shall not constitute or be deemed to contribute to a Company Material Adverse Effect, and shall not otherwise be taken into account in determining whether a Company

Material Adverse Effect has occurred or would reasonably be expected to occur, except that Effects with respect to clauses (a), (b) and (c) of the below shall be so considered to the extent such Effect disproportionately impacts the Company relative to other companies operating in the same industries: (a) changes or proposed changes in applicable Laws, GAAP or the interpretation or enforcement thereof, (b) changes in general economic, business, labor or regulatory conditions, or changes in securities, credit or other financial markets, including interests rates or exchange rates, in the United States or globally, or changes generally affecting the industries (including seasonal fluctuations) in which the Company operates in the United States or globally, (c) changes in global or national political conditions (including the outbreak or escalation of war (whether or not declared), military action, sabotage or acts of terrorism), changes due to natural disasters or changes in the weather or changes due to the outbreak or worsening of an epidemic, pandemic or other health crisis, (d) the public announcement or pendency of this Agreement and the Transactions (provided, that the

exception in this clause (d) shall not apply in the context of any representation or warranty set forth in Section 3.4 or Section 3.12), (e) any Transaction Litigation, (f) changes in the trading price or trading volume of Company Shares or any suspension of trading, provided that the underlying facts or circumstances giving rise or contributing to such changes may be taken into account in determining whether a Company Material Adverse Effect has occurred, (g) any failure by the Company to meet any revenue, earnings or other financial projections or forecasts, provided that the underlying facts or circumstances giving rise or contributing to such changes may be taken into account in determining whether a Company Material Adverse Effect has occurred, (h) the performance of this Agreement and the transactions contemplated hereby, including compliance with covenants set forth herein, or any action taken or omitted to be taken by the Company at the request or with the prior written consent of Parent or Merger Sub, or (i) any matter described on Section 8.4(a) of the Company Disclosure Schedule, or (ii) would prevent or materially impair or delay the consummation by the Company of the transactions contemplated by this Agreement.

Company Material Intellectual Property means the Intellectual Property that is owned or licensed by the Company and that is material to the business of the Company.

Company Owned Intellectual Property means Intellectual Property that is owned by the Company.

Continuing Employee means any employee of the Company as of immediately prior to the Closing.

Contract or Contracts means any of the agreements, arrangements, contracts, leases (whether for real or personal property), powers of attorney, notes, bonds, mortgages, indentures, deeds of trust, loans, evidences of indebtedness, letters of credit, settlement agreements, franchise agreements, undertakings, covenants not to compete, employment agreements, licenses, purchase and sale orders and other legal commitments to which in each case a Person is a party or to which any of the properties or assets of such Person or its Subsidiaries are subject.

control (including the terms controlled by and under common control with) means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person, whether through the ownership of capital stock or other Equity Interests, as trustee or executor, by Contract or credit arrangement or otherwise.

Contingent Payment Rights Agreement means the Contingent Payment Rights Agreement, by and between Parent and a mutually agreed upon Person who shall act as rights agent, substantially in the form attached hereto as Exhibit C.

Environmental Claims means any Proceeding and any written order, demand, allegation, accusation or notice by any Person or entity alleging actual or potential violation of or liability arising out of or relating to any Environmental Laws, Environmental Permits or the presence in, or Release into, the environment of, or exposure to, any Hazardous Materials, but shall not include any claims relating to products liability.

Environmental Laws means any and all applicable, federal, state, provincial, local or foreign Laws, and all rules or regulations promulgated thereunder, regulating or relating to Hazardous Materials, pollution, protection of the environment (including ambient air, surface water, ground water, land surface, subsurface strata, wildlife, plants or other natural resources), and/or the protection of health and safety of persons from exposures to Hazardous Materials in the environment.

Environmental Permits means any permit, certificate, registration, notice, approval, identification number, license or other authorization required under any applicable Environmental Law.

Equity Interest means any share, capital stock, partnership, limited liability company, member or similar equity interest in any Person, and any option, warrant, right or security (including debt securities) convertible, exchangeable or exercisable into or for any such share, capital stock, partnership, limited liability company, member or similar equity interest or other instrument or right the value of which is based on any of the foregoing.

ERISA means the Employee Retirement Income Security Act of 1974, as amended, and the rules and regulations promulgated thereunder.

ERISA Affiliate means any Person (whether or not incorporated) that, together with another Person, is considered under common control and treated as one employer under Section 414(b), (c), (m) or (o) of the Code.

Exchange Act means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

Expenses includes all expenses (including all fees and expenses of counsel, accountants, investment bankers, financing sources, experts and consultants to a party hereto and its affiliates) incurred by a party or on its behalf in connection with or related to the authorization, preparation, negotiation, execution and performance of this Agreement and the transactions contemplated hereby, including the preparation, printing, filing and mailing of the Proxy Statement and all other matters related to the transactions contemplated by this Agreement.

FDA means the United States Food and Drug Administration.

GAAP means generally accepted accounting principles, as applied in the United States.

Governmental Entity means any national, supranational, federal, state, county, provincial, municipal, local or foreign government, or other political subdivision thereof, including commission or authority, and any entity exercising executive, legislative, judicial, regulatory, taxing, administrative or prosecutorial functions of or pertaining to government, including any court of competent jurisdiction, any arbitral body or any administrative, regulatory (including any stock exchange) or other agency.

Hazardous Materials means any pollutants, contaminants or any other toxic, infectious, carcinogenic, reactive, corrosive, ignitable, flammable or otherwise hazardous substance, chemicals or waste, whether solid, liquid or gas, that is subject to regulation, control or remediation under any Environmental Laws, including any quantity of asbestos in any form, urea formaldehyde, PCBs, radon gas, toxic mold or microbes, crude oil or any fraction thereof, all forms of natural gas, petroleum products or by-products or derivatives.

Information Privacy and Security Laws means all applicable Laws concerning the privacy and/or security of Personal Data, and all regulations promulgated thereunder, including, without limitation, HIPAA, the Health Information Technology for Economic and Clinical Health Act (HITECH), the Gramm-Leach-Bliley Act, the Fair Credit Reporting Act, as amended by the Fair and Accurate Credit Transaction Act, the Federal Trade Commission Act, the Privacy Act of 1974, the CAN-SPAM Act, the Telephone Consumer Protection Act, the Telemarketing and Consumer Fraud and Abuse Prevention Act, social security number protection Laws and data security and security breach notification Laws.

Intellectual Property means all intellectual property rights in any jurisdiction, including all: (a) patents, patent applications, and patent disclosures, together with all provisionals, reissues, continuations, continuations-in-part, divisions, revisions, extensions, and reexaminations thereof; (b) trademarks, service marks, trade dress, logos, slogans, brand names, trade names, Internet domain names and corporate names (whether or not registered), and other indicia of origin, and all applications, registrations and renewals in connection therewith; (c) all copyrights (whether or not published), mask works, and industrial designs, and all applications, registrations and renewals in connection therewith; (d) intellectual property rights in Software Programs; and (e) mask works and industrial designs, and all applications and registrations in connection therewith; and (f) trade secrets and other intellectual property rights in confidential and proprietary information (including any intellectual property rights in inventions, ideas, research and

development information, know-how, formulas, compositions, manufacturing and production processes and techniques, technical data, designs, drawings, specifications, research records, test information, financial, marketing and business data, customer and supplier lists, algorithms and information, pricing and cost information, business and marketing plans and proposals, and databases and compilations of data.

"IRS" means the United States Internal Revenue Service.

"IT Assets" means computers, Software Programs, servers, workstations, routers, hubs, switches, circuits, networks, data communications lines and all other information technology equipment owned, used, or held for use by the Company.

"Knowledge" means (a) when used with respect to the Company, the actual knowledge of the individuals listed in Section 8.4(b) of the Company Disclosure Schedule; and (b) when used with respect to Parent or Merger Sub, the actual knowledge of the individuals listed in Section 8.4(b) of the Parent Disclosure Schedule.

"Law" means any applicable national, provincial, state, municipal and local laws (including common law), statutes, ordinances, codes, decrees, rules, regulations or Orders of any Governmental Entity, in each case, having the force of law.

"Lien" means with respect to any property, equity interest or asset, any mortgage, deed of trust, hypothecation, lien, encumbrance, pledge, charge, security interest, right of first refusal, right of first offer, adverse claim, conditional sales or other title retention agreement, easement, right of way or other title defect, restriction on transfer, covenant or option in respect of such property, equity interest or asset.

"NASDAQ" means the NASDAQ Capital Market.

"NYSE" means the New York Stock Exchange.

"Order" means any judgment, order, ruling, decision, writ, injunction, decree or arbitration award of any Governmental Entity.

"OSHA" means the Occupational Safety and Health Act of 1970, as amended, and the rules and regulations promulgated thereunder.

"Parent Material Adverse Effect" means any change, event, condition, occurrence, state of facts, development or effect that, individually or in the aggregate, prevents or materially impairs or delays the consummation by Parent or Merger Sub of any the transactions contemplated this Agreement.

"Permitted Liens" means (a) statutory Liens for Taxes not yet due and payable or for Taxes that are being contested in good faith by appropriate Proceedings diligently conducted and for which appropriate reserves have been established in accordance with GAAP on the financial statements of the Company, (b) Liens in favor of landlords, vendors, carriers, warehousemen, repairmen, mechanics, workmen, materialmen, construction or similar liens or encumbrances arising by operation of Law in the ordinary course of business for amounts not yet due and payable, (c) (i) applicable building, zoning and land use regulations regulating the use or occupancy of Company Real Property or the activities conducted thereon which are imposed by any Governmental Entity having jurisdiction over such Company Real Property which are not violated by the current use or occupancy of such Company Real Property or the operation of the business thereon, and (ii) other imperfections or irregularities in title, charges, restrictions and other encumbrances of record that do not materially detract from the use of the Company Real Property to which they relate.

"Person" means an individual, corporation, limited liability company, partnership, association, trust, unincorporated organization, other entity or group (as defined in Section 13(d) of the Exchange Act), including a Governmental Entity.

Personal Data means information, in any form, that identifies an individual or, in combination with any other information or data in the possession of the Company, could be used to identify an individual.

Prime Rate means the rate per annum published in *The Wall Street Journal* from time to time as the prime lending rate prevailing during any relevant period.

Proceedings means all actions, suits, claims, investigations, audits, litigation or proceedings, in each case, by or before any Governmental Entity.

Release means disposing, discharging, injecting, spilling, leaking, pumping, pouring, leaching, dumping, emitting, escaping or emptying into or upon the indoor or outdoor environment, including any soil, sediment, subsurface strata, surface water, groundwater, ambient air, the atmosphere or any other media.

Representatives means, with respect to a Person, such Person s directors, officers, employees, accountants, consultants, legal counsel, investment bankers, advisors, agents and other representatives.

Rights Agreement means the Stockholder Rights Agreement, dated as of September 7, 2011, between American Stock Transfer & Trust Company, LLC, as rights agent, and the Company.

SEC means the Securities and Exchange Commission.

Securities Act means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

Software Programs means computer programs (whether in source code, object code or other form), including any and all software implementations of algorithms, models and methodologies, and all documentation, including user manuals and training materials, related to any of the foregoing.

Subsidiary of Parent, the Company or any other Person means any corporation, partnership, limited liability company, joint venture or other legal entity of which Parent, the Company or such other Person, as the case may be (either alone or through or together with any other Subsidiary), owns, directly or indirectly, a majority of the capital stock or other Equity Interests the holders of which are generally entitled to vote for the election of the board of directors or other governing body of such corporation, limited liability company, partnership, joint venture or other legal entity, or otherwise owns, directly or indirectly, such capital stock or other Equity Interests that would confer control of any such corporation, limited liability company, partnership, joint venture or other legal entity, or any Person that would otherwise be deemed a subsidiary under Rule 12b-2 promulgated under the Exchange Act.

Tax Authority means any Governmental Entity having or purporting to exercise jurisdiction with respect to the determination, collection or imposition of any Tax.

Tax Return means any report, return (including information return), claim for refund, election, estimated tax filing or declaration required to be filed or actually filed with a Tax Authority, including any schedule or attachment thereto, and including any amendments thereof.

Taxes means all federal, state, local or foreign taxes, fees, levies, duties, tariffs, imposts, payments in lieu and other charges in the nature of a tax or any other similar fee, charge, assessment or payment, including, without limitation, income, franchise, windfall or other profits, gross receipts, branch profits, real property, personal property, sales, use, goods and services, net worth, capital stock, license, occupation, premium, commercial activity, customs duties, alternative or add-on minimum, environmental, escheat or unclaimed property, payroll, employment, social security, workers compensation, unemployment compensation, disability, excise, severance, estimated, withholding, ad valorem, stamp, transfer, registration, value-added, transactional and gains tax, whether disputed or not, and any interest, penalty, fine or additional amounts imposed in respect of any of the foregoing.

Third Party shall mean any Person other than Parent, Merger Sub and their respective affiliates.

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"Treasury Regulations" means regulations promulgated under the Code by the IRS.

8.5 Terms Defined Elsewhere. The following terms are defined elsewhere in this Agreement, as indicated below:

"Acquisition Proposal"	Section 5.3(h)(i)
"Agreement"	Preamble
"Book-Entry Company Shares"	Section 2.2(b)(ii)
"Certificate of Merger"	Section 1.2
"Certificates"	Section 2.2(b)(i)
"Change of Board Recommendation"	Section 5.3(a)
"Closing"	Section 1.2
"Closing Date"	Section 1.2
"Company"	Preamble
"Company Acquisition Agreement"	Section 5.3(a)
"Company Benefit Plan"	Section 3.11(a)
"Company Board"	Recitals
"Company Board Recommendation"	Section 3.3(b)
"Company Bylaws"	Section 3.1
"Company Charter"	Section 3.1
"Company Disclosure Schedule"	Article 3
"Company Equity Plan"	Section 2.4(b)
"Company Lease Agreements"	Section 3.14(b)
"Company Leased Real Property"	Section 3.14(b)
"Company Material Contracts"	Section 3.16(b)
"Company Meeting"	Section 5.4(b)
"Company Option"	Section 2.4(a)
"Company Owned Real Property"	Section 3.14(a)
"Company Real Property"	Section 3.14(c)
"Company Registered Intellectual Property"	Section 3.17(a)
"Company SEC Documents"	Section 3.5(a)
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Transaction Litigation	Section 5.12
Transactions	Section 1.1(a)

8.6 Headings. The headings and table of contents contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

8.7 Severability. If any term or other provision of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or incapable of being enforced by any rule of Law or public policy, all other terms, conditions and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible to the fullest extent permitted by applicable Law and in an acceptable manner to the end that the transactions contemplated hereby are fulfilled to the extent possible.

8.8 Entire Agreement. This Agreement (together with the Exhibits, Parent Disclosure Schedule and Company Disclosure Schedule and the other documents delivered pursuant hereto) and the Confidentiality Agreement constitute the entire agreement of the parties and supersede all prior agreements and undertakings, both written and oral, among the parties, or any of them, with respect to the subject matter hereof and, except as otherwise expressly provided herein or therein, are not intended to confer upon any other Person any rights or remedies hereunder or thereunder.

8.9 Assignment. Neither this Agreement nor any of the rights, interests or obligations hereunder shall be assigned by any of the parties hereto, in whole or in part (whether by operation of law or otherwise), without the prior written consent of each of the other parties, and any attempt to make any such assignment without such consent shall be null and void. Subject to the preceding sentence, this Agreement will be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and permitted assigns.

8.10 No Third Party Beneficiaries. This Agreement shall be binding upon and inure solely to the benefit of the parties and their respective successors and permitted assigns, and nothing in this Agreement, express or implied, other than pursuant to Section 5.8, is intended to or shall confer upon any other Person any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

8.11 Mutual Drafting; Interpretation. Each party has jointly participated in the drafting of this Agreement, which each party acknowledges is the result of extensive negotiations between the parties. If an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties,

and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provision. For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders. As used in this Agreement, the words include and including, and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words without limitation. As used in this Agreement, the words ordinary course of business shall be deemed to be followed by the words consistent with past practice . As used in this Agreement, references to a party or the parties are intended to refer to a party to this Agreement or the parties to this Agreement. Except as otherwise indicated, all references in this Agreement to Sections, Exhibits, Annexes and Schedules are intended to refer to Sections of this Agreement and Exhibits, Annexes and Schedules to this Agreement. All references in this Agreement to dollars $ are intended to refer to U.S. dollars. Unless otherwise specifically provided for herein, the term or shall not be deemed to be exclusive. As used in this Agreement, the words hereof, herein, hereby, hereunder and words of similar import shall refer to this Agreement as a whole and not to an particular provision of this Agreement. Any Contract or Law defined or referred to herein means any such Contract or Law as from time to time amended, modified or supplemented, unless otherwise specifically indicated.

8.12 Governing Law; Consent to Jurisdiction; Waiver of Trial by Jury.

(a) This Agreement and all claims and causes of action based upon, arising out of or in connection herewith shall be governed by, and construed in accordance with, the Laws of the State of Delaware, without regard to Laws that may be applicable under conflicts of laws principles (whether of the State of Delaware or any other jurisdiction) that would cause the application of the Laws of any jurisdiction other than the State of Delaware.

(b) Each of the parties hereby irrevocably and unconditionally submits, for itself and its property, to the exclusive jurisdiction of the Court of Chancery of the State of Delaware or, if such Court does not have jurisdiction, any Delaware State court, or Federal court of the United States of America, sitting in Delaware, and any appellate court from any thereof, in any Proceeding arising out of or relating to this Agreement or the transactions contemplated hereby or for recognition or enforcement of any judgment relating thereto, and each of the parties hereby irrevocably and unconditionally (i) agrees not to commence any such Proceeding except in such courts, (ii) agrees that any claim in respect of any such Proceeding may be heard and determined in such court, (iii) waives, to the fullest extent it may legally and effectively do so, any objection which it may now or hereafter have to the laying of venue of any such Proceeding in any such court, and (iv) waives, to the fullest extent permitted by Law, the defense of an inconvenient forum to the maintenance of such Proceeding in any such court. Each of the parties agrees that a final judgment in any such Proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by Law. Each party to this Agreement irrevocably consents to service of process in the manner provided for notices in Section 8.3. Nothing in this Agreement will affect the right of any party to this Agreement to serve process in any other manner permitted by Law.

(c) EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE IT HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT AND ANY OF THE AGREEMENTS DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY CERTIFIES AND ACKNOWLEDGES THAT (I) NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE EITHER OF SUCH WAIVERS, (II) IT UNDERSTANDS AND HAS

CONSIDERED THE IMPLICATIONS OF SUCH WAIVERS, (III) IT MAKES SUCH WAIVERS VOLUNTARILY AND (IV) IT HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 8.12(c).

8.13 Counterparts. This Agreement may be signed in any number of counterparts, including by facsimile or other electronic transmission each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when each party hereto shall have received a counterpart hereof signed by all of the other parties hereto. Until and unless each party has received a counterpart hereof signed by the other party hereto, this Agreement shall have no effect and no party shall have any right or obligation hereunder (whether by virtue of any other oral or written agreement or other communication). The exchange of a fully executed Agreement (in counterparts or otherwise) by electronic transmission in .PDF format or by facsimile shall be sufficient to bind the parties to the terms and conditions of this Agreement.

8.14 Specific Performance. The parties hereto agree that if any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached, irreparable damage would occur, no adequate remedy at Law would exist and damages would be difficult to determine, and accordingly, (a) the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to specific performance of the terms hereof, in each case in the Court of Chancery of the State of Delaware or, if such court shall not have jurisdiction, any state or Federal Court of the United States of America, or any state having jurisdiction, this being in addition to any other remedy to which they are entitled at Law or in equity, (b) the parties waive any requirement for the securing or posting of any bond in connection with the obtaining of any specific performance or injunctive relief and (c) the parties will waive, in any action for specific performance, the defense of adequacy of a remedy at Law. The Company s or Parent s pursuit of specific performance at any time will not be deemed an election of remedies or waiver of the right to pursue any other right or remedy to which such party may be entitled.

[*Signature page follows*]

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IN WITNESS WHEREOF, Parent, Merger Sub and the Company have caused this Agreement to be executed as of the date first written above by their respective officersthereunto duly authorized.

PARENT:

INTREXON CORPORATION

By: /s/ Donald P. Lehr
Name: Donald P. Lehr
Title: Chief Legal Officer

MERGER SUB:

INTREXON GV HOLDING, INC.

By: /s/ Donald P. Lehr
Name: Donald P. Lehr
Title: Chief Legal Officer

COMPANY:

GENVEC, INC.

By: /s/ Douglas J. Swirsky
Name: Douglas J. Swirsky
Title: President and Chief Executive Officer

[Signature Page to Agreement and Plan of Merger]

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EXHIBIT A

FORM OF

CERTIFICATE OF INCORPORATION

OF SURVIVING CORPORATION

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SECOND AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF GENVEC, INC.

The undersigned President and Treasurer of GenVec, Inc., a corporation organized and existing under the laws of the State of Delaware (the Corporation) does hereby certify as follows:

1. The Second Amended and Restated Certificate of Incorporation, the entirety of which is set forth below, has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law and duly executed and acknowledged by the appropriate officer(s) of the Corporation in accordance with Section 103 of the Delaware General Corporation Law.

2. The Amended and Restated Certificate of Incorporation of the Corporation, as amended, is hereby amended and restated in its entirety as follows:

First: The name of this Corporation is GenVec, Inc.

Second: The registered office of the Corporation in the State of Delaware is to be located at 1209 Orange Street, in the City of Wilmington, County of New Castle, Zip Code 19801. The registered agent in charge thereof is The Corporation Trust Company.

Third: The purpose of the corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.

Fourth: The amount of the total stock of this corporation is authorized to issue is 100 shares with a par value of $0.001 per share.

Fifth:

(1) Right to Indemnification. Each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (hereinafter a proceeding), by reason of the fact:

(a) that he or she is or was a director or officer of the Corporation, or

(b) that he or she, being at the time a director or officer of the Corporation, is or was serving at the request of the Corporation as a director, trustee, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan (collectively, another enterprise or other enterprise), whether either in case (a) or in case (b) the basis of such proceeding is alleged action or inaction (x) in an official capacity as a director or officer of the Corporation, or as a director, trustee, officer, employee or agent of such other enterprise, or (y) in any other capacity related to the Corporation to the fullest extent not prohibited by Section 145 of the Delaware General Corporation Law (or any successor provision or provisions) as the same exists or may hereafter be amended (but, in the case of any such amendment, with respect to actions taken prior to such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than permitted prior thereto), against all expense, liability and loss (including, without limitation, attorneys fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) incurred

or suffered by such person in connection therewith. The persons indemnified by this Article Fifth are hereinafter referred to as indemnitees. Such indemnification as to such alleged action or inaction shall continue as to an indemnitee who has after such alleged action or inaction ceased to be a director or officer of the alleged action or inaction shall continue as to an indemnitee who has after such alleged action or inaction ceased to be a director or officer of the Corporation, or director, officer, employee or agent of another enterprise; and shall inure to the benefit of the indemnitee s heirs, executors, administrators, and personal or legal representatives, provided, however, that except for proceedings to enforce rights to indemnification, the Corporation shall not be obligated to indemnify any director or officer (or his or her heirs,

executors, administrators, or personal or legal representatives) in connection with a proceeding (or part thereof) initiated by such person unless such proceeding (or part thereof) was authorized or consented to by the Board of Directors. The right to indemnification conferred in this Article Fifth: (i) shall be a contract right; (ii) shall not be affected adversely as to any indemnitee by any amendment of this Second Amended and Restated Certificate of Incorporation with respect to any action or inaction occurring prior to such amendment; and (iii) shall, subject to any requirements imposed by law, this Article Fifth, or the Bylaws, include the right to have paid by the Corporation the expenses incurred in defending any such proceeding in advance of its final disposition.

(2) Agents and Employees. The Corporation may, to the extent authorized from time to time by the Board of Directors, grant rights to indemnification, and to the advancement of expenses, to any employee or agent of the Corporation (or any person serving at the Corporation s request as a director, trustee, officer, employee or agent of another enterprise) or to persons who are or were a director, officer, employee or agent of any of the Corporation s affiliates, predecessor or subsidiary corporations or of a constituent corporation absorbed by the Corporation in a consolidation or merger or who is or was serving at the request of such affiliate, predecessor or subsidiary corporation or of such constituent corporation as a director, officer, employee or agent of another enterprise, in each case as determined by the Board of Directors to the fullest extent of the provisions of this Article Fifth in cases of the indemnification and advancement of expenses of directors and officers of the Corporation, or to any lesser extent (or greater extent, if permitted by law) determined by the Board of Directors.

(3) Partial Indemnification. If the indemnitee is entitled under any provision of this Article Fifth to indemnification by the Corporation for some or a portion of the expenses, liabilities, losses, judgments, fines, penalties or ERISA excise taxes actually and reasonably incurred by him or her in the investigation, defense, appeal or settlement of any proceeding but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify the indemnitee for the portion of such expenses, liabilities, losses, judgments, fines, penalties or ERISA excise taxes to which the indemnitee is entitled.

(4) Repeal or Modification by Stockholders. Any repeal or modification of this Article Fifth by the stockholders of the Corporation shall not adversely affect any rights to indemnification and to the advancement of expenses or other protection of a director, officer, employee or agent of the Corporation existing at the time of such repeal or modification with respect to any acts or omissions occurring prior to such repeal or modification.

(5) Repeal or Modification of Law. Any repeal or modification of the laws of the State of Delaware, as now or hereafter in effect, shall not adversely affect any rights to indemnification and to the advancement of expenses or other protection of a director, officer, employee or agent of the Corporation existing at the time of such repeal or modification with respect to any acts or omissions occurring prior to such repeal or modification.

(6) Insurance. The Corporation may maintain insurance, at its expense, to protect itself and any director, trustee, officer, employee or agent of the Corporation or another enterprise against any expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the Delaware General Corporation Law.

(7) Binding Effect; Successors and Assigns. The indemnification and advance of expenses provided by or granted pursuant to this Article Fifth shall continue as to a person who has ceased to be a director or officer, and shall inure to the benefit of the heirs, executors and administrators of such director or officer.

(8) Severability. In the event that any of the provisions of this Article Fifth (including any provision within a single section, paragraph or sentence) is held by a court of competent jurisdiction to be invalid, void or otherwise unenforceable, the remaining provisions are severable and shall remain enforceable to the full extent permitted by law.

(9) Relationship to Other Rights and Provisions Concerning Indemnification. The rights to indemnification and to the advancement of expenses conferred in this Article Fifth shall not be exclusive of any other right which

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any person may have or hereafter acquire under any statute, this Second Amended and Restated Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise. The Bylaws may contain such other provisions concerning indemnification, including provisions specifying reasonable procedures relating to and conditions to the receipt by indemnitees of indemnification, provided that such provisions are not inconsistent with the provisions of this Article Fifth.

I, The Undersigned, being the duly elected President and Treasurer of the Corporation, do on behalf of the Corporation make this Second Amended and Restated Certificate of Incorporation of the Corporation.

By:
Name:
Title: President and Treasurer

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EXHIBIT B

FORM OF BYLAWS

OF SURVIVING CORPORATION

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GENVEC, INC.

* * * * *

AMENDED AND RESTATED BYLAWS

* * * * *

ARTICLE I

OFFICES

Section 1. The registered office of the corporation shall be in the City of Wilmington, County of New Castle, State of Delaware.

Section 2. The corporation may also have offices at such other places both within and without the State of Delaware as the board of directors may from time to time determine or the business of the corporation may require.

ARTICLE II

MEETINGS OF STOCKHOLDERS

Section 1. All meetings of the stockholders shall be held at such time and place, within or without the State of Delaware, as shall be stated in the notice of the meeting or in a duly executed waiver of notice thereof.

The board of directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the General Corporation Law of Delaware. If so authorized, and subject to such guidelines and procedures as the board of directors may adopt, stockholders and proxyholders not physically present at a meeting of stockholders may, by means of remote communication, participate in a meeting of stockholders and be deemed present in person and vote at a meeting of stockholders whether such meeting is to be held at a designated place or solely by means of remote communication, provided that (i) the corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or proxyholder, (ii) the corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings, and (iii) if any stockholder or proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the corporation.

Section 2. Annual meetings of stockholders shall be held at such date and time as shall be designated from time to time by the board of directors and stated in the notice of the meeting, at which they shall elect by a plurality vote a board of directors, and transact such other business as may properly be brought before the meeting.

Section 3. Written notice of the annual meeting stating the place if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, shall be given not less than ten nor more than sixty days before the date of the meeting, to each stockholder entitled to vote at such meeting

as of the record date for determining the stockholders entitled to notice of the meeting.

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Section 4. The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; provided, however, if the record date for determining the stockholders entitled to vote is less than ten days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least ten days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then a list of the stockholders entitled to vote at the meeting shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then such list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting.

Section 5. Special meetings of the stockholders, for any purpose or purposes, unless otherwise prescribed by statute or by the certificate of incorporation, may be called by the president and shall be called by the president or secretary at the request in writing of a majority of the board of directors, or at the request in writing of stockholders owning a majority in amount of the entire capital stock of the corporation issued and outstanding and entitled to vote. Such request shall state the purpose or purposes of the proposed meeting.

Section 6. Written notice of a special meeting stating the place if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and the purpose or purposes for which the meeting is called, shall be given not less than ten nor more than sixty days before the date of the meeting, to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

Section 7. The holders of a majority of the stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business except as otherwise provided by statute or by the certificate of incorporation. If, however, such quorum shall not be present or represented at any meeting of the stockholders, the stockholders entitled to vote thereat, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally notified. If the adjournment is for more than thirty days a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the General Corporation Law of Delaware, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

Section 8. When a quorum is present at any meeting, the vote of the holders of a majority of the stock having voting power present in person or represented by proxy shall decide any question brought before such meeting, unless the question is one upon which by express provision of the statutes or of the certificate of incorporation, a different vote is

required in which case such express provision shall govern and control the decision of such question.

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Section 9. Unless otherwise provided in the certificate of incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote in person or by proxy for each share of the capital stock having voting power held by such stockholder, but no proxy shall be voted on after three years from its date, unless the proxy provides for a longer period.

Section 10. Unless otherwise provided in the certificate of incorporation, any action required to be taken, or which may be taken, at any annual or special meeting of stockholders of the corporation, may be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted. Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for notice of such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation. Stockholders may, unless the certificate of incorporation otherwise provides, act by written consent to elect directors; provided, however, that if such consent is less than unanimous, such action by written consent may be in lieu of holding an annual meeting only if all of the directorships to which directors could be elected at an annual meeting held at the effective time of such action are vacant and are filled by such action.

A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes herein, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (A) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (B) the date on which such stockholder or proxyholder or authorized persons or persons transmitted such telegram, cablegram or other electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered in accordance with Section 228 of the General Corporation Law of Delaware, to the corporation by delivery to its registered office in Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all such purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

ARTICLE III

DIRECTORS

Section 1. Until changed in accordance with the provisions of this section, there shall be two (2) directors of the corporation. The number of directors may be fixed (i) at any meeting of stockholders called for the purpose of electing directors, at which a quorum is present, by the affirmative vote of the holders of a majority of the stock having voting power present in person or by proxy at the meeting, or (ii) at any meeting of the directors at which a quorum is present, by the affirmative vote of a majority of the directors present. No reduction in the number of directors shall of itself have the effect of shortening the term of any incumbent director. Each director elected shall hold office until his or her successor is elected and qualified.

Section 2. Vacancies and newly created directorships resulting from any increase in the authorized number of directors may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced.

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Section 3. The business of the corporation shall be managed by or under the direction of its board of directors which may exercise all such powers of the corporation and do all such lawful acts and things as are not by statute or by the certificate of incorporation or by these bylaws directed or required to be exercised or done by the stockholders.

Section 4. The board of directors of the corporation may hold meetings, both regular and special, either within or without the State of Delaware.

Section 5. The first meeting of each newly elected board of directors shall be held at such time and place as shall be fixed by the vote of the stockholders at the annual meeting and no notice of such meeting shall be necessary to the newly elected directors in order legally to constitute the meeting, provided a quorum shall be present. In the event of the failure of the stockholders to fix the time or place of such first meeting of the newly elected board of directors, or in the event such meeting is not held at the time and place so fixed by the stockholders, the meeting may be held at such time and place as shall be specified in a notice given as hereinafter provided for special meetings of the board of directors, or as shall be specified in a written waiver signed by all of the directors.

Section 6. Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board.

Section 7. Special meetings of the board may be called by the president on two days notice to each director, either personally or by mail or by facsimile communication; special meetings shall be called by the president or secretary in like manner and on like notice on the written request of two directors unless the board consists of only one director; in which case special meetings shall be called by the president or secretary in like manner and on like notice on the written request of the sole director.

Section 8. At all meetings of the board, a majority of directors shall constitute a quorum for the transaction of business and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the board of directors, except as may be otherwise specifically provided by statute or by the certificate of incorporation. If a quorum shall not be present at any meeting of the board of directors, the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present.

Section 9. Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors or of any committee thereof may be taken without a meeting, if all members of the board or committee, as the case may be, consent thereto in writing or electronic transmission, and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 10. Unless otherwise restricted by the certificate of incorporation, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

Section 11. The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee.

In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not the member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member.

Any such committee, to the extent provided in the resolution of the board of directors, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation except as otherwise restricted by statute, and may authorize the seal of the corporation to be affixed to all papers which may require it.

Section 12. Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

Section 13. Unless otherwise provided in the certificate of incorporation, the bylaws or the resolution of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

Section 14. Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors. The directors may be paid their expenses, if any, of attendance at each meeting of the board of directors and may be paid a fixed sum for attendance at each meeting of the board of directors or a stated salary as director. No such payment shall preclude any director from serving the corporation in any other capacity and receiving compensation therefor. Members of special or standing committees may be allowed like compensation for attending committee meetings.

Section 15. Any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of shares entitled to vote at an election of directors except as otherwise provided by statute.

ARTICLE IV

NOTICES

Section 1. Whenever, under the provisions of the statutes or of the certificate of incorporation or of these bylaws, notice is required to be given to any director or stockholder, it shall not be construed to mean personal notice, but such notice may be given in writing, by mail, addressed to such director or stockholder, at his address as it appears on the records of the corporation, with postage thereon prepaid, and such notice shall be deemed to be given at the time when the same shall be deposited in the United States mail. Notice may also be given to stockholders by a form of electronic transmission in accordance with and subject to the provisions of Section 232 of the General Corporation Law of Delaware.

Section 2. Whenever any notice is required to be given under the provisions of the statutes or of the certificate of incorporation or of these bylaws, a waiver thereof in writing, signed by the person or persons entitled to notice or a waiver by electronic transmission by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent thereto.

ARTICLE V

OFFICERS

Section 1. The officers of the corporation shall be chosen by the board of directors and shall be a president, a secretary and a treasurer. The board of directors may also choose one or more vice presidents, assistant secretaries and assistant treasurers. Any number of offices may be held by the same person, unless the certificate of incorporation otherwise provides.

Section 2. The board of directors at its first meeting after each annual meeting of stockholders shall choose a president, a secretary and a treasurer.

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Section 3. The board of directors may appoint such other officers and agents as it shall deem necessary who shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the board.

Section 4. The salaries of all officers and agents of the corporation shall be fixed by the board of directors.

Section 5. The officers of the corporation shall hold office until their successors are chosen and qualify. Any officer elected or appointed by the board of directors may be removed at any time by the affirmative vote of a majority of the board of directors. Any vacancy occurring in any office of the corporation shall be filled by the board of directors.

THE PRESIDENT

Section 6. The president shall be the chief executive officer of the corporation, shall preside at all meetings of the stockholders and the board of directors, shall have general and active management of the business of the corporation and shall see that all orders and resolutions of the board of directors are carried into effect.

Section 7. He or she shall execute bonds, mortgages and other contracts requiring a seal, under the seal of the corporation, except where required or permitted by statute to be otherwise signed and executed and except where the signing and execution thereof shall be expressly delegated by the board of directors to some other officer or agent of the corporation.

THE VICE-PRESIDENTS

Section 8. In the absence of the president or in the event of his or her inability or refusal to act, the vice-president (or in the event there be more than one vice-president, the vice-presidents in the order designated by the directors, or in the absence of any designation, then in the order of their election) shall perform the duties of the president, and when so acting, shall have all the powers of and be subject to all the restrictions upon the president. The vice-presidents shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

THE SECRETARY AND ASSISTANT SECRETARY

Section 9. The secretary shall attend all meetings of the board of directors and all meetings of the stockholders and record all the proceedings of the meetings of the corporation and of the board of directors in a book to be kept for that purpose and shall perform like duties for the standing committees when required. He or she shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the board of directors, and shall perform such other duties as may be prescribed by the board of directors or president, under whose supervision he or she shall be. He or she shall have custody of the corporate seal of the corporation and he or she, or an assistant secretary, shall have authority to affix the same to any instrument requiring it and when so affixed, it may be attested by his or her signature or by the signature of such assistant secretary. The board of directors may give general authority to any other officer to affix the seal of the corporation and to attest the affixing by his or her signature.

Section 10. The assistant secretary, or if there be more than one, the assistant secretaries in the order determined by the board of directors (or if there be no such determination, then in the order of their election) shall, in the absence of the secretary or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

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THE TREASURER AND ASSISTANT TREASURERS

Section 11. The treasurer shall have the custody of the corporate funds and securities and shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the board of directors.

Section 12. He or she shall disburse the funds of the corporation as may be ordered by the board of directors, taking proper vouchers for such disbursements, and shall render to the president and the board of directors, at its regular meetings, or when the board of directors so requires, an account of all his or her transactions as treasurer and of the financial condition of the corporation.

Section 13. If required by the board of directors, he or she shall give the corporation a bond in such sum and with such surety or sureties as shall be satisfactory to the board of directors for the faithful performance of the duties of his or her office and for the restoration to the corporation, in case of his or her death, resignation, retirement or removal from office, of all books, papers, vouchers, money and other property of whatever kind in his or her possession or under his or her control belonging to the corporation.

Section 14. The assistant treasurer, or if there shall be more than one, the assistant treasurers in the order determined by the board of directors (or if there be no such determination, then in the order of their election) shall, in the absence of the treasurer or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the treasurer and shall perform such other duties and have such other powers as the board of directors may from time to time prescribe.

ARTICLE VI

CERTIFICATES FOR SHARES

Section 1. The shares of the corporation shall be uncertificated.

FIXING RECORD DATE

Section 2. In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than sixty nor less than ten days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the board of directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with Section 213(a) of the General Corporation Law of Delaware at the adjourned meeting.

In order that the corporation may determine the stockholders entitled to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividendor other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any

other lawful action, the board of directors may fix a record date, which, with respect to determining stockholders entitled to consent to corporate action in writing without a meeting, shall not be more than ten days after the date upon which the resolution fixing the record date is adopted by the board of directors, or sixty days prior to any other action. No record date fixed as described above shall precede the date upon which the resolution fixing the record date is adopted by the board of directors.

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REGISTERED STOCKHOLDERS

Section 4. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and to hold liable for calls and assessments a person registered on its books as the owner of shares, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII

GENERAL PROVISIONS

DIVIDENDS

Section 1. Dividends upon the capital stock of the corporation, subject to the provisions of the certificate of incorporation, if any, may be declared by the board of directors at any regular or special meeting, pursuant to law. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the certificate of incorporation.

Section 2. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the directors shall think conducive to the interest of the corporation, and the directors may modify or abolish any such reserve in the manner in which it was created.

CHECKS

Section 3. All checks or demands for money and notes of the corporation shall be signed by such officer or officers or such other person or persons as the board of directors may from time to time designate.

FISCAL YEAR

Section 4. The fiscal year of the corporation shall be fixed by resolution of the board of directors.

SEAL

Section 5. The corporation need not have a seal.

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ARTICLE VIII

INDEMNIFICATION

DIRECTORS AND OFFICERS

INDEMNIFICATION

Section 1. In accordance with Article Sixth of the Second Amended and Restated Certificate of Incorporation of the Corporation, each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (hereinafter a proceeding), by reason of the fact:

(a) that he or she is or was a director or officer of the Corporation, or

(b) that he or she, being at the time a director or officer of the Corporation, is or was serving at the request of the Corporation as a director, trustee, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, whether either in case (a) or in case (b) the basis of such proceeding is alleged action or inaction (x) in an official capacity as a director or officer of the Corporation, or as a director, trustee, officer, employee or agent of such enterprise while so serving as a director, trustee, officer, employee or agent, shall be indemnified and held harmless by the Corporation to the fullest extent not prohibited by Section 145 of the Delaware General Corporation Law (or any successor provision or provisions) as the same exists or may hereafter be amended. The right to indemnification conferred in this Article VIII shall be a contract right and shall include the right to be paid by the Corporation the expenses incurred in defending any such proceeding in advance of its final disposition; provided, however, that, if the Delaware General Corporation Law requires, the payment of such expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such person while a director or officer, including, without limitation, service to an employee benefit plan) in advance of the final disposition of a proceeding, shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified under this Article VIII or otherwise. The Corporation may, by action of its Board of Directors, provide indemnification to employees and agents of the Corporation with the same scope and effect as the foregoing indemnification of directors and officers.

AGENTS AND EMPLOYEES

Section 2. The Corporation may, to the extent authorized from time to time by the Board of Directors, grant rights to indemnification, and to the advancement of expenses, to any employee or agent of the Corporation (or any person serving at the Corporation s request as a director, trustee, officer, employee or agent of another enterprise) or to persons who are or were a director, officer, employee or agent of any of the Corporation s affiliates, predecessor or subsidiary corporations or of a constituent corporation absorbed by the Corporation in a consolidation or merger or who is or was serving at the request of such affiliate, predecessor or subsidiary corporation or of such constituent corporation as a director, officer, employee or agent of another enterprise, in each case as determined by the Board of Directors to the fullest extent of the provisions of Article Sixth of the Second Amended and Restated Certificate of Incorporation of the Corporation, in cases of the indemnification and advancement of expenses of directors and officers of the Corporation, or to any lesser extent (or greater extent, if permitted by law) determined by the Board of Directors.

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INDEMNIFICATION PROCEDURE; DETERMINATION OF RIGHT TO

INDEMNIFICATION

Section 3.

(a) Promptly after receipt by the indemnitee of written notice of the commencement of any proceeding, the indemnitee will, if a claim in respect thereof is to be made against the Corporation in accordance herewith, notify the Corporation of the commencement thereof. The omission so to notify the Corporation (i) will relieve it from any liability which it may have to the indemnitee hereunder only to the extent that the Corporation is able to establish that its ability to avoid such liability was materially prejudiced by such omission and (ii) will not relieve it from any liability which it may otherwise have to the indemnitee.

(b) If a claim for indemnification under this Article VIII is not paid in full by the Corporation within thirty days after it has been received in writing by the Corporation, the indemnitee may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and, if successful in whole or in part, the claimant shall be entitled to be paid also the expense of prosecuting such claim. It shall be a defense to any such action (other than an action brought to enforce a claim for expenses incurred in defending any proceeding in advance of its final disposition where the required undertaking, if any is required, has been tendered to the Corporation) that the claimant has not met the standards of conduct which make it permissible under the Delaware General Corporation Law for the Corporation to indemnify the claimant for the amount claimed, but the burden of proving such defense shall be on the Corporation. Neither the failure of the Corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he or she has met the applicable standard of conduct set forth in the Delaware General Corporation Law, nor an actual determination by the Corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the claimant has not met the applicable standard of conduct.

(c) The Corporation shall not be obligated to indemnify or advance expenses to the indemnitee under this Article VIII in connection with a proceeding (or part thereof) initiated or brought voluntarily by the indemnitee (other than to enforce the rights to indemnification hereunder) unless the initiation thereof was approved by the Board of Directors of the Corporation.

(d) In the case of a settlement of a proceeding by an indemnitee, the payment of amounts and indemnification thereof shall be approved, in advance, by the Corporation, which approval shall not be unreasonably withheld, or by a court of competent jurisdiction.

INSURANCE

Section 4. The Corporation may maintain insurance, at its expense, to protect itself and any director, trustee, officer, employee or agent of the Corporation or another enterprise against any expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the Delaware General Corporation Law.

BINDING EFFECT; SUCCESSORS AND ASSIGNS

Section 5. The indemnification and advance of expenses provided by or granted pursuant to this Article VIII shall continue as to a person who has ceased to be a director or officer, and shall inure to the benefit of the heirs, executors

and administrators of such director or officer.

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SEVERABILITY

Section 6. In the event that any of the provisions of this Article VIII (including any provision within a single section, paragraph or sentence) is held by a court of competent jurisdiction to be invalid, void or otherwise unenforceable, the remaining provisions are severable and shall remain enforceable to the full extent permitted by law.

RELATIONSHIP TO OTHER RIGHTS AND PROVISIONS CONCERNING INDEMNIFICATION

Section 7. The rights to indemnification and to the advancement of expenses conferred in this Article VIII shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, the Second Amended and Restated Certificate of Incorporation of the Corporation, agreement, vote of stockholders or disinterested directors or otherwise.

ARTICLE IX

AMENDMENTS

Section 1. These bylaws may be altered, amended or repealed or new bylaws may be adopted by the stockholders or by the board of directors, when such power is conferred upon the board of directors by the certificate of incorporation, at any regular meeting of the stockholders or of the board of directors or at any special meeting of the stockholders or of the board of directors if notice of such alteration, amendment, repeal or adoption of new bylaws be contained in the notice of such special meeting. If the power to adopt, amend or repeal bylaws is conferred upon the board of directors by the certificate of incorporation, it shall not divest or limit the power of the stockholders to adopt, amend or repeal bylaws.

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EXHIBIT C

CONTINGENT PAYMENT RIGHTS AGREEMENT

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Annex B

FORM OF CONTINGENT PAYMENT RIGHTS AGREEMENT

THIS CONTINGENT PAYMENT RIGHTS AGREEMENT, dated as of [ ], 2017 (this Agreement), is entered into by and between Intrexon Corporation, a Virginia corporation (Parent), and American Stock Transfer & Trust Company, LLC, a New York limited liability trust company, as Rights Agent.

RECITALS

WHEREAS, Parent, Intrexon GV Holding, Inc., a Delaware corporation (Merger Sub), and GenVec, Inc., a Delaware corporation (Company), have entered into an Agreement and Plan of Merger dated as of January 24, 2017 (as it may be amended or supplemented from time to time pursuant to the terms thereof, the Merger Agreement), pursuant to which Merger Sub will merge with and into Company, with Company surviving the Merger as a subsidiary of Parent; and

WHEREAS, pursuant to the Merger Agreement, Parent has agreed to provide to Company s stockholders and holders of Parent Exchange Warrants (upon exercise) the right to receive contingent cash and/or Parent Common Stock payments as hereinafter described.

NOW, THEREFORE, in consideration of the foregoing and the consummation of the transactions referred to above, Parent and Rights Agent agree, for the proportionate benefit of all Holders (as hereinafter defined), as follows:

1. DEFINITIONS; CERTAIN RULES OF CONSTRUCTION

1.1 Definitions. Capitalized terms used but not otherwise defined herein will have the meanings ascribed to them in the Merger Agreement, unless expressly set forth otherwise herein. As used in this Agreement, the following terms will have the following meanings:

Board of Directors means the board of directors of Parent.

Board Resolution means a copy of a resolution certified by the secretary or an assistant secretary of Parent to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, and delivered to the Rights Agent.

Change of Control means (a) a sale or other disposition of all or substantially all of the assets of either Parent or the Company on a consolidated basis (other than to any direct or indirect wholly owned subsidiary of Parent), (b) a merger or consolidation involving either Parent or the Company in which Parent or the Company, respectively, is not the surviving entity, and (c) any other transaction involving either Parent or the Company in which Parent or the Company, respectively, is the surviving entity but in which the stockholders of Parent or the Company, respectively, immediately prior to such transaction own less than fifty percent (50%) of the surviving entity s voting power immediately after the transaction.

CPR Payment Amount means fifty percent (50%) of all payments actually received, without duplication, by Company or its successor or their affiliates from or on behalf of Novartis Institutes for BioMedical Research, Inc. or its successor or any of their affiliates (collectively, Novartis) pursuant to Sections 6.2 and 6.3 of that certain Research Collaboration and License Agreement, dated January 13, 2010, as amended, subject to Section 4.3 (the Novartis

Agreement) or otherwise on account of the Milestone Payments (as defined in the Novartis Agreement) or royalties payable by Novartis under such sections. For the avoidance of doubt, CPR Payment Amounts do not include any payments received by Company from Novartis for reimbursement of, or compensation for, research collaboration costs incurred by Company or any other payments made by Novartis pursuant to Section 6.4 of the Novartis Agreement.

CPRs means the rights of Holders to receive contingent cash and/or Parent Common Stock payments pursuant to this Agreement.

DTC means The Depository Trust Company or any successor thereto.

Final Notice has the meaning set forth in Section 2.4(c).

Final Notice Date has the meaning set forth in Section 2.4(d).

First Milestone means the first Milestone (as that term is defined in the Novartis Agreement) achieved or occurring after the date of this Agreement.

Holder means a Person in whose name a CPR is registered in the CPR Register at the applicable time.

Milestone means, as applicable, the First Milestone or the Second Milestone.

Milestone Notice has the meaning set forth in Section 2.4(a).

Milestone Notice Date has the meaning set forth in Section 2.4(b).

Officer s Certificate means a certificate signed by the chief executive officer, president, chief financial officer, any vice president, the controller, the treasurer or the secretary, in each case of Parent, in his or her capacity as such an officer, and delivered to the Rights Agent.

Other Milestone Payments means any Milestone Payments (if any) received by the Company or its successor or their affiliates under the Novartis Agreement in respect of a Milestone (as that term is defined in the Novartis Agreement) other than the First Milestone or Second Milestone; provided that such Milestone is achieved or occurs prior to the date that is thirty six months following the date of this Agreement.

Permitted Transfer means a transfer of CPRs (a) on death by will or intestacy; (b) by instrument to an inter vivos or testamentary trust in which the CPRs are to be passed to beneficiaries upon the death of the trustee; (c) pursuant to a court order; (d) made by operation of law (including a consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (e) in the case of CPRs held in nominee form, from a nominee to a beneficial owner (through an intermediary if applicable) or from a nominee to another nominee for the same beneficial owner, to the extent allowable by the Rights Agent; (f) or a transfer from a participant s account in a tax-qualified employee benefit plan to the participant or to such participant s account in a different tax-qualified employee benefit plan or to a tax-qualified individual retirement account for the benefit of such participant; or (g) to Parent for any or no consideration.

Rights Agent means the Rights Agent named in the first paragraph of this Agreement, until a successor Rights Agent will have become such pursuant to the applicable provisions of this Agreement, and thereafter Rights Agent will mean such successor Rights Agent.

Second Milestone means the second Milestone (as that term is defined in the Novartis Agreement) achieved or occurring after the date of this Agreement.

1.2 Rules of Construction. Except as otherwise explicitly specified to the contrary, (a) references to a Section means a Section of this Agreement unless another agreement is specified, (b) the word including (in its various forms) means

including without limitation, (c) references to a particular statute or regulation include all rules and regulations thereunder and any predecessor or successor statute, rules or regulation, in each case as amended or otherwise modified from time to time, (d) words in the singular or plural form include the plural and

singular form, respectively, (e) references to a particular Person include such Person s successors and assigns to the extent not prohibited by this Agreement and (f) all references to dollars or $ refer to United States dollars. For clarity, the parties agree that the phrase materially adverse when used in this Agreement with respect to the Holders includes any amendment or other action, as applicable, that does or would be reasonably expected to reduce, eliminate, or materially delay (y) any payment to the Holders under this Agreement, or (z) any payment to the Company or its successor or their affiliates under the Novartis Agreement that would constitute a CPR Payment Amount.

2. CONTINGENT PAYMENT RIGHTS

2.1 CPRs; Appointment of Rights Agent.

(a) As provided in the Merger Agreement, each Holder is entitled to one CPR for each Company Share outstanding immediately prior to the Effective Time that is converted into the right to receive the Merger Consideration pursuant to the Merger Agreement. Each CPR represents the right of a Holder to receive the aggregate CPR Payment Amount divided by the number of then-outstanding CPRs pursuant to this Agreement. The initial Holders will be determined in accordance with the Merger Agreement. Any holder of a Parent Exchange Warrant who exercises (or converts, if applicable) such warrant to purchase shares of Parent Common Stock will, upon issuance of such shares of Parent Common Stock, become a Holder pursuant to the terms of this Agreement and such Holder will be entitled to one CPR pursuant to this Section 2.1(a) for each Company Share underlying the Company Warrant that was converted into such Parent Exchange Warrant pursuant to the Merger Agreement.

(b) Parent hereby appoints the Rights Agent to act as rights agent for Parent as contemplated hereby in accordance with the express terms and conditions set forth in this Agreement (and no implied terms or conditions), and the Rights Agent hereby accepts such appointment.

2.2 Nontransferable. The CPRs will not be sold, assigned, transferred, pledged, encumbered or in any other manner transferred or disposed of, in whole or in part, other than through a Permitted Transfer.

2.3 No Certificate; Registration; Registration of Transfer; Change of Address.

(a) The CPRs will not be evidenced by a certificate or other instrument.

(b) The Rights Agent will keep a register (the CPR Register) for the purpose of registering CPRs and transfers of CPRs as permitted herein. The CPR Register will initially show one position for Cede & Co. representing all the shares of Company Common Stock held by DTC on behalf of the street name holders of the shares of Company Common Stock held by such holders as of immediately prior to the Effective Time. The Rights Agent will have no responsibility whatsoever directly to the street name holders with respect to transfers of CPRs unless and until such CPRs are transferred into the name of such street name holders in accordance with Section 2.2 of this Agreement.

(c) Subject to the restrictions on transferability set forth in Section 2.2, every request made to transfer a CPR must be in writing and accompanied by a written instrument of transfer in form reasonably satisfactory to the Rights Agent, duly executed by the Holder thereof or the Holder s attorney duly authorized in writing, personal representative or survivor and setting forth in reasonable detail the circumstances relating to the transfer. Upon receipt of such written notice, the Rights Agent will, subject to its reasonable determination that the transfer instrument is in proper form and the transfer otherwise complies with the other terms and conditions of this Agreement (including the provisions of Section 2.2), register the transfer of the CPRs in the CPR Register. No service charge shall be made for any registration of transfer of a CPR, but Parent may require payment of a sum sufficient to cover any stamp or other tax

or governmental charge that is imposed in connection with any such registration of transfer. The Rights Agent shall have no duty or obligation to take any action under any

section of this Agreement that requires the payment by a Holder of applicable taxes or charges unless and until the Rights Agent is satisfied that all such taxes or charges have been paid or will be paid. All duly transferred CPRs registered in the CPR Register will be the valid obligations of Parent and will entitle the transferee to the same benefits and rights under this Agreement as those held immediately prior to the transfer by the transferor. No transfer of a CPR will be valid until registered in the CPR Register, and any transfer not duly registered in the CPR Register will be void *ab initio*.

(d) A Holder may make a written request to the Rights Agent to change such Holder s address of record in the CPR Register. The written request must be duly executed by the Holder. Upon receipt of such written notice, the Rights Agent will promptly record the change of address in the CPR Register.

(e) Promptly following each exercise (or conversion, if applicable) of a Parent Exchange Warrant, Parent shall promptly notify the Rights Agent of such Holder s name and address and the number of CPRs issued to such Holder as a result of such exercise or conversion. The Rights Agent shall promptly record such name, address and number of CPRs in the CPR Register.

2.4 Payment Procedures.

(a) On or before the thirtieth day following receipt by Company or its successor or their affiliates of Milestone Payments (as defined in the Novartis Agreement) paid by Novartis following the achievement of the First Milestone or Second Milestone, if any, Parent will (i) deliver to the Rights Agent a written notice (in each case, a Milestone Notice) indicating the applicable Milestone achieved and the applicable Milestone Payment received and (ii) in accordance with Section 4.2, transfer to the Rights Agent (A) by wire transfer of immediately available funds to an account designated by the Rights Agent an amount of cash, and/or, (B) subject to Section 2.4(j), shares of Parent Common Stock, equal to the aggregate CPR Payment Amount payable to the Holders on account of all CPRs in respect of the applicable Milestone Payment.

(b) The Rights Agent will, within ten Business Days of receipt of any Milestone Notice (each such date, a Milestone Notice Date), send each Holder at its registered address a copy of the applicable Milestone Notice. At the time the Rights Agent sends a copy of such Milestone Notice to the Holders, the Rights Agent will also pay the applicable CPR Payment Amount to the Holders, with each Holder receiving an amount equal to the product of A * B where A equals the quotient of (i) the applicable CPR Payment Amount in respect of the applicable Milestone Payment, *divided by* (ii) the then-outstanding number of CPRs held by all Holders, and B equals the number of CPRs held by such Holder as reflected on the CPR Register, by check mailed to the address of each Holder as reflected in the CPR Register, in each case, as of the close of business on the last Business Day prior to such Milestone Notice Date (or, if applicable, the number of shares of Parent Common Stock issuable to such Holder pursuant to Section 2.4(j), calculated on a per CPR basis).

(c) On or before the thirtieth day following the date that is thirty six months following the date of this Agreement, Parent will (i) deliver to the Rights Agent a written notice (a Final Notice) indicating any remaining CPR Payment Amounts to which the Holders are entitled but were not required to be paid pursuant to Sections 2.4(a) and 2.4(b) (including any Other Milestone Payments) and (ii) in accordance with Section 4.2, transfer to the Rights Agent (A) by wire transfer of immediately available funds to an account designated by the Rights Agent an amount of cash, and/or, (B) subject to Section 2.4(j), shares of Parent Common Stock, equal to the aggregate remaining CPR Payment Amount payable to the Holders on account of all CPRs in respect of the remaining CPR Payment Amount.

(d) The Rights Agent will, within ten Business Days of receipt of the Final Notice (the Final Notice Date), send each Holder at its registered address a copy of the Final Notice. At the time the Rights Agent sends a copy of such notice to

the Holders, the Rights Agent will also pay the applicable CPR Payment Amount to the Holders, with each Holder receiving an amount equal to the product of A * B where A equals the quotient of (i) the applicable aggregate remaining CPR Payment Amount, *divided by* (ii) the then-outstanding number of

CPRs held by all Holders, and B equals the number of CPRs held by such Holder as reflected on the CPR Register, by check mailed to the address of each Holder as reflected in the CPR Register, in each case, as of the close of business on the last Business Day prior to the Final Notice Date (or, if applicable, the number of shares of Parent Common Stock issuable to such Holder pursuant to Section 2.4(j), calculated on a per CPR basis).

(e) In the event that any CPR Payment Amount payable to the Holders under Section 2.4(b) or 2.4(d) includes shares of Parent Common Stock, Parent and the Rights Agent shall take such actions as are reasonably necessary to issue or transfer to each Holder such Holder s proportionate share of such shares of Parent Common Stock, determined on a per CPR basis, in accordance with applicable Law. In the event that any CPR Payment Amount payable to the Holders under Section 2.4(b) or 2.4(d) includes both cash and shares of Parent Common Stock, each Holder shall receive substantially the same proportion of cash and shares of Parent Common Stock, determined on a per CPR basis.

(f) Each of the Parent and the Surviving Corporation shall be entitled to deduct or withhold, or cause the Rights Agent to deduct or withhold, from any CPR Payment Amount otherwise payable or otherwise deliverable pursuant to this Agreement, in each case directly or through an authorized payroll agent, such amounts as are reasonably determined to be required to be deducted or withheld therefrom under the Code or any other provision of any applicable federal, state, local or non-U.S. Tax Law. To the extent such amounts are so deducted or withheld and paid over or deposited with the relevant Tax authority, such amounts shall be treated for all purposes under this Agreement as having been paid to the Holder(s) to whom such amounts would otherwise have been paid or delivered. Prior to making any such Tax withholdings or causing any such Tax withholdings to be made with respect to any Holder, the Rights Agent shall, to the extent practicable, provide notice to the Holder of such potential withholding and a reasonable opportunity for the Holder to provide any necessary Tax forms (including an IRS Form W-9 or an applicable IRS Form W-8) in order to avoid or reduce such withholding amounts; provided that the time period for payment of a Milestone Payment by the Rights Agent set forth in Sections 2.4(b) or (d) shall be extended by a period equal to any delay caused by the Holder providing such forms.

(g) Any portion of any CPR Payment Amount that remains undistributed to the Holders six months after an applicable Milestone Notice Date or the Final Notice Date, as appropriate, will be delivered by the Rights Agent to Parent, upon demand, and any Holder will thereafter look only to Parent for payment of such CPR Payment Amount, without interest.

(h) Neither Parent nor the Rights Agent will be liable to any person in respect of any CPR Payment Amount delivered to a public official pursuant to any applicable abandoned property, escheat or similar Law. If, despite Parent s and the Rights Agent s reasonable best efforts to deliver a CPR Payment Amount to the applicable Holder, any CPR Payment Amount has not been paid prior to one (1) year after an applicable Milestone Notice Date or the Final Notice Date, as applicable (or immediately prior to such earlier date on which the CPR Payment Amount would otherwise escheat to or become the property of any Governmental Entity), any such CPR Payment Amount will, to the extent permitted by applicable Law, become the property of Parent, free and clear of all claims or interest of any person previously entitled thereto.

(i) Except to the extent any portion of any CPR Payment Amount is required to be treated as imputed interest pursuant to applicable Law, the Parties agree to treat the CPRs and the CPR Payment Amounts received with respect to the Company Shares pursuant to the Merger Agreement for all U.S. federal and applicable state and local income Tax purposes as additional consideration for the Company Shares and none of the parties will take any position to the contrary on any U.S. federal and applicable state and local income Tax Return or for other U.S. federal and applicable state and local income Tax purposes except as required by applicable Law.

(j) Payments made by Parent pursuant to this Agreement shall be made in cash, except that if any cash payment would result in the Merger failing to meet the control requirement of Section 368(a)(2)(E) of the Code, or would otherwise cause the Transactions to fail to qualify as a tax-free reorganization, Parent shall, in

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lieu of cash consideration, issue to the Rights Agent, on behalf of and for the benefit of the Holders, a number of shares of Parent Common Stock necessary to cause the Merger to meet the control requirement of Section 368(a)(2)(E) of the Code (taking into account for such determination the value of such Parent Common Stock at both the time of such payment and at the Effective Time of the Merger) or otherwise causing the Transactions to fail to qualify as a tax-free reorganization. Notwithstanding anything contained herein to the contrary, in no event shall (a) the aggregate amount of Parent Common Stock issued, or issuable, pursuant to the terms of this Agreement and the Merger Agreement (including as a result of exercise of Parent Exchange Warrants) exceed 19.9% of the then-issued and outstanding shares of Parent Common Stock or (b) the number of shares of Parent Common Stock issued under this Agreement exceed the number of shares of Parent Common Stock issued as Stock Consideration at the Effective Time. For purposes of this Section 2.4(j), only, shares of Parent Common Stock will be valued based on the Volume Weighted Average Price for the 5 trading days immediately preceding the date Parent makes such payment pursuant to this Section 2.4 or the Effective Time of the Merger, as applicable. Parent covenants and agrees to, as expeditiously as possible, register or qualify the issuance of all shares of Parent Common Stock issued or transferred to Holders under this Agreement under the Securities Act and the securities or Blue Sky laws of each jurisdiction in which such registration or qualification is necessary.

2.5 No Voting, Dividends or Interest; No Equity or Ownership Interest in Parent.

(a) The CPRs will not have any voting or dividend rights, and interest will not accrue on any amounts payable on the CPRs to any Holder.

(b) The CPRs will not represent any equity or ownership interest in Parent or in any constituent company to the Merger.

2.6 Ability to Abandon CPR. A Holder may at any time, at such Holder s option, abandon all of such Holder s remaining rights in a CPR by transferring such CPR to Parent without consideration therefor. Nothing in this Agreement is intended to prohibit Parent from offering to acquire CPRs for consideration in its sole discretion.

3. THE RIGHTS AGENT

3.1 Certain Duties and Responsibilities.

(a) The Rights Agent will not have any liability for any actions taken or not taken in connection with this Agreement, except to the extent of its willful misconduct, bad faith or gross negligence. No provision of this Agreement will require the Rights Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of any of its rights or powers.

(b) The Holders, acting by the written consent of Holders of not less than a majority of the then-outstanding CPRs, may direct the Rights Agent to act on behalf of the Holders in enforcing any of their rights hereunder. The Rights Agent shall be under no obligation to institute any action, suit or proceeding, or to take any other action likely to result in the incurrence of material expenses by the Rights Agent, unless such acting Holders (on behalf of all Holders) shall furnish the Rights Agent with reasonable security and indemnity for any costs and expenses that may be incurred. All rights of action under this Agreement may be enforced by the Rights Agent, any action, suit or proceeding instituted by the Rights Agent shall be brought in its name as the Rights Agent and any recovery in connection therewith shall be for the proportionate benefit of all the Holders, as their respective rights or interests may appear.

3.2 Certain Rights of Rights Agent. The Rights Agent undertakes to perform such duties and only such duties as are specifically set forth in this Agreement, and no implied covenants or obligations will be read into this Agreement against the Rights Agent. In addition:

(a) the Rights Agent may rely and will be protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order or other

paper or document believed by it in good faith to be genuine and to have been signed or presented by the proper party or parties;

(b) whenever the Rights Agent will deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Rights Agent may, in the absence of bad faith, gross negligence or willful misconduct on its part, request and rely upon an Officer s Certificate with respect to such matter;

(c) the Rights Agent may engage and consult with counsel of its selection and the written advice of such counsel or any opinion of counsel will be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(d) the permissive rights of the Rights Agent to do things enumerated in this Agreement will not be construed as a duty;

(e) the Rights Agent will not be required to give any note or surety in respect of the execution of such powers or otherwise in respect of the premises;

(f) Parent agrees to indemnify Rights Agent for, and hold Rights Agent harmless against, any loss, liability, claim, demands, suits or expense arising out of or in connection with Rights Agent s duties under this Agreement, including the costs and expenses of defending Rights Agent against any claims, charges, demands, suits or loss, unless such loss has been determined by a court of competent jurisdiction to be a result of Rights Agent s gross negligence, bad faith or willful or intentional misconduct; and

(g) Parent agrees (i) to pay the fees and expenses of the Rights Agent in connection with this Agreement as set forth in Exhibit A, and (ii) to reimburse the Rights Agent for all taxes and governmental charges, reasonable expenses and other charges of any kind and nature incurred by the Rights Agent in the execution of this Agreement (other than taxes imposed on or measured by the Rights Agent s net income and franchise or similar taxes imposed on it (in lieu of net income taxes)). The Rights Agent will also be entitled to reimbursement from Parent for all reasonable and necessary out-of-pocket expenses paid or incurred by it in connection with the administration by the Rights Agent of its duties hereunder.

3.3 Resignation and Removal; Appointment of Successor.

(a) The Rights Agent may resign at any time by giving written notice thereof to Parent and the Holders specifying a date when such resignation will take effect, which notice will be sent at least 60 days prior to the date so specified. Parent has the right to remove Rights Agent at any time by a Board Resolution specifying a date when such removal will take effect. Notice of such removal will be given by Parent to Rights Agent, which notice will be sent at least 60 days prior to the date so specified.

(b) If the Rights Agent resigns, is removed or becomes incapable of acting, Parent, by a Board Resolution, will promptly appoint a qualified successor Rights Agent who may be a Holder but may not be an officer of Parent. The successor Rights Agent so appointed will, forthwith upon its acceptance of such appointment in accordance with this Section 3.3(b), become the successor Rights Agent.

(c) Parent will give notice to each Holder of each resignation and each removal of a Rights Agent and each appointment of a successor Rights Agent by mailing written notice of such event by first-class mail to the Holders as their names and addresses appear in the CPR Register. Each notice will include the name and address of the successor Rights Agent. If Parent fails to send such notice within ten days after acceptance of appointment by a successor Rights

Agent, the successor Rights Agent will cause the notice to be mailed at the expense of Parent.

(d) Notwithstanding anything to the contrary in this Section 3.3, unless consented to in writing by Holders of not less than a majority of the then-outstanding CPRs, Parent shall not appoint as a successor Rights Agent any Person that is not a stock transfer agent of national reputation or the corporate trust department of a commercial bank.

3.4 Acceptance of Appointment by Successor. Every successor Rights Agent appointed hereunder will execute, acknowledge and deliver to Parent and to the retiring Rights Agent an instrument accepting such appointment and a counterpart of this Agreement, and thereupon such successor Rights Agent, without any further act, deed or conveyance, will become vested with all the rights, powers, trusts and duties of the retiring Rights Agent. On request of Parent or the successor Rights Agent, the retiring Rights Agent will execute and deliver an instrument transferring to the successor Rights Agent all the rights, powers and trusts of the retiring Rights Agent.

4. COVENANTS

4.1 List of Holders. Parent will furnish or cause to be furnished to the Rights Agent in such form as Parent receives from the Company s transfer agent (or other agent performing similar services for the Company), the names and addresses of the Holders within ten Business Days after the Effective Time.

4.2 Payment of CPR Payment Amounts. Parent will promptly deposit with the Rights Agent, for payment to each Holder, the applicable CPR Payment Amount, if any, prior to or on the applicable Milestone Notice Date or Final Notice Date, as applicable.

4.3 Novartis Agreement. Without the prior written consent of Holders of not less than a majority of the then-outstanding CPRs, neither Parent nor any of its affiliates shall (i) amend, restate, supplement, terminate or otherwise modify the Novartis Agreement in a manner materially adversely affecting the Holders rights under this Agreement, (ii) take any action or fail to take any action, including by waiving any right or failing to enforce any right under the Novartis Agreement, in a manner materially adversely affecting the Holders rights under this Agreement or (iii) permit or agree to any of the foregoing. Without limiting the foregoing, Parent and its affiliates shall pursue their rights under the Novartis Agreement in good faith, and not take any action intended to avoid, reduce, or materially delay any payment to the Holders hereunder.

4.4 Records. Parent shall maintain (and shall cause its affiliates to maintain) records relating to the Novartis Agreement in sufficient detail to permit the Holders to confirm whether any payments related to the Novartis Agreement giving rise to any CPR Payment Amounts have been received by Parent or Company or their successors or affiliates.

4.5 Audit Rights. Once during the one-year period following the third anniversary of the date of this Agreement, upon reasonable advance written notice from the Holders of not less than a majority of the then-outstanding CPRs, Parent shall permit an independent certified public accounting firm of nationally recognized standing selected by such Holders and reasonably acceptable to Parent to have access at reasonable times during normal business hours to the books and records of Parent and its affiliates as may be reasonably necessary to evaluate and verify Parent s receipt, categorization and accuracy of payments received under the Novartis Agreement and the CPR Payment Amounts hereunder; provided that (x) such Holders (and, if applicable, such accounting firm) enter into customary confidentiality agreements reasonably satisfactory to Parent with respect to the confidential information of Parent or its affiliates to be furnished pursuant to this Section 4.5 and (y) such access does not unreasonably interfere with the conduct of the business of Parent or any of its affiliates. The fees charged by such accounting firm shall be borne by such Holders, unless such audit identifies an aggregate underpayment by Parent of the CPR Payment Amounts owed to Holders by more than five percent (5%), in which case such fees shall be borne by Parent. Parent shall promptly pay, or cause the Rights Agent to promptly pay, the Holders the amount of any underpayment identified in such audit, with each Holder receiving their proportionate share of such underpayment based on the number of CPRs held by such Holder as of the expiration or termination of this Agreement.

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5. AMENDMENTS

5.1 Amendments without Consent of Holders.

(a) Without the consent of any Holders or the Rights Agent, Parent, when authorized by a Board Resolution, at any time and from time to time, may enter into one or more amendments hereto, to evidence any successor to or permitted assignee of Parent and the assumption by any such successor or permitted assignee of the covenants of Parent herein as provided in Section 6.3.

(b) Without the consent of any Holders, Parent, when authorized by a Board Resolution, and the Rights Agent, if the Company so directs and upon the delivery of an Officer s Certificate which states that the proposed amendment is in compliance with the terms of this Section 5.1(b), at any time and from time to time, may enter into one or more amendments hereto, for any of the following purposes:

(i) to evidence the succession of another Person as a successor Rights Agent in accordance with Section 3 and the assumption by any successor of the covenants and obligations of the Rights Agent herein;

(ii) to add to the covenants of Parent such further covenants, restrictions, conditions or provisions as Parent and the Rights Agent will consider to be for the protection of the Holders; provided that, in each case, such provisions do not materially adversely affect the interests of the Holders;

(iii) to cure any ambiguity, to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Agreement; provided that, in each case, such provisions do not materially adversely affect the interests of the Holders;

(iv) as may be necessary or appropriate to ensure that the CPRs are not subject to registration under the Securities Act or the Exchange Act; provided that, in each case, such provisions do not materially adversely affect the interests of the Holders; or

(v) any other amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, unless such addition, elimination or change is materially adverse to the interests of the Holders.

(c) Promptly after the execution by Parent and the Rights Agent of any amendment pursuant to the provisions of this Section 5.1, Parent will mail (or cause the Rights Agent to mail) a notice thereof by first class mail to the Holders at their addresses as they appear on the CPR Register, setting forth in general terms the substance of such amendment.

5.2 Amendments with Consent of Holders.

(a) Subject to Section 5.1 (which amendments pursuant to Section 5.1 may be made without the consent of the Holders), with the consent of the Holders of not less than a majority of the then-outstanding CPRs, whether evidenced in writing or taken at a meeting of the Holders, Parent, when authorized by a Board Resolution, and the Rights Agent may enter into one or more amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, even if such addition, elimination or change is materially adverse to the interest of the Holders.

(b) Promptly after the execution by Parent and the Rights Agent of any amendment pursuant to the provisions of this Section 5.2, Parent will mail (or cause the Rights Agent to mail) a notice thereof by first class mail to the Holders at their addresses as they appear on the CPR Register, setting forth in general terms the substance of such amendment.

5.3 Execution of Amendments. In executing any amendment permitted by this Section 5, the Rights Agent will be entitled to receive, and will be fully protected in relying upon, an opinion of counsel selected by Parent

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stating that the execution of such amendment is authorized or permitted by this Agreement. The Rights Agent may, but is not obligated to, enter into any such amendment that affects the Rights Agent s own rights, privileges, covenants or duties under this Agreement or otherwise.

5.4 Effect of Amendments. Upon the execution of any amendment under this Section 5, this Agreement will be modified in accordance therewith, such amendment will form a part of this Agreement for all purposes and every Holder will be bound thereby.

6. OTHER PROVISIONS OF GENERAL APPLICATION

6.1 Notices to Rights Agent and Parent. Any notice or other communication required or permitted hereunder shall be in writing and shall be deemed given when delivered in person, by overnight courier, by facsimile transmission (with receipt confirmed by telephone or by automatic transmission report) or by electronic mail, or two (2) Business Days after being sent by registered or certified mail (postage prepaid, return receipt requested), as follows:

If to the Rights Agent, to it at:

American Stock Transfer & Trust Company, LLC

6201 15th Avenue

Brooklyn, New York 11219

Attn: Corporate Actions

Tel: (718) 921-8200

with a copy to:

American Stock Transfer & Trust Company, LLC

48 Wall Street, 22nd floor

New York, New York 10005

Attn: General Counsel

Tel: (718) 921-8200

If to Parent, to it at:

Intrexon Corporation

20374 Seneca Meadows Parkway

Germantown, MD 20876

Attention: Legal Department

Fax: (301) 556-9902

Email: DLehr@intrexon.com; CUlrich@intrexon.com

with a copy to:

Thompson Hine LLP

Two Alliance Center

3560 Lenox Road, Suite 1600

Atlanta, GA. 30326

Attention: Peter W. Smith

Fax: (404) 541-2905

Email: Peter.Smith@thompsonhine.com

The Rights Agent or Parent may specify a different address, email address or facsimile number by giving notice to each other in accordance with this Section 6.1 and to the Holders in accordance with Section 6.2.

6.2 Notice to Holders. Where this Agreement provides for notice to Holders, such notice will be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each Holder affected by such event, at the Holder s address as it appears in the CPR Register, not later than the latest date, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder will affect the sufficiency of such notice with respect to other Holders.

6.3 Parent Successors and Assigns. Parent may assign, in its sole discretion and without the consent of any other party, any or all of its rights, interests and obligations hereunder to one or more direct or indirect wholly-owned subsidiaries of Parent for so long as they remain wholly owned subsidiaries of Parent or to an assignee of all of the Company s rights under the Novartis Agreement (each, an Assignee); provided that Parent shall remain liable for the performance by any such assignee of, and shall not be relieved of, its obligations, duties and covenants hereunder. Any such Assignee may thereafter assign, in its sole discretion and without the consent of any other party, any or all of its rights, interests and obligations hereunder to one or more additional Assignees satisfying the conditions of the preceding sentence. This Agreement will be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and permitted assignees, and this Agreement shall not restrict Parent s or any successor s ability to merge or consolidate; provided, that in the event of a Change of Control, Parent or Company, as applicable, shall cause the acquirer to assume Parent s obligations, duties and covenants under this Agreement. Except as otherwise permitted herein, Parent may not assign this Agreement without the prior written consent of the Holders of not less than a majority of the then-outstanding CPRs. Any attempted assignment of this Agreement or any of such rights in violation of this Section 6.3 shall be void and of no effect.

6.4 Benefits of Agreement. Parent and the Rights Agent hereby agree that the respective covenants and agreements set forth herein are intended to be for the benefit of, and shall be enforceable by, the Holders, acting by the written consent of Holders of not less than a majority of the then-outstanding CPRs, all of whom are intended third-party beneficiaries hereof. Nothing in this Agreement, express or implied, will give to any Person (other than the Rights Agent, Parent, Parent s successors and permitted assignees, and the Holders and their respective successors and permitted assignees) any benefit or any legal or equitable right, remedy or claim under this Agreement or under any covenant or provision herein contained, all such covenants and provisions being for the sole benefit of the Rights Agent, Parent, Parent s successors and permitted assignees, and the Holders and their respective successors and permitted assignees. The rights of Holders are limited to those expressly provided in this Agreement.

6.5 Governing Law. This Agreement, the CPRs and all claims and causes of action based upon, arising out of or in connection herewith shall be governed by, and construed in accordance with, the Laws of the State of Delaware, without regard to Laws that may be applicable under conflicts of laws principles (whether of the State of Delaware or any other jurisdiction) that would cause the application of the Laws of any jurisdiction other than the State of Delaware.

Each of the parties hereby irrevocably and unconditionally submits, for itself and its property, to the exclusive jurisdiction of the Court of Chancery of the State of Delaware or, if such court does not have jurisdiction, any Delaware state court, or federal court of the United States of America, sitting in Delaware, and any appellate court from any thereof, in any Proceeding arising out of or relating to this Agreement or the transactions contemplated hereby or for recognition or enforcement of any judgment relating thereto, and each of the parties hereby irrevocably and unconditionally (i) agrees not to commence any such Proceeding except in such courts, (ii) agrees that any claim in respect of any such Proceeding may be heard and determined in such court, (iii) waives, to the fullest extent it may legally and effectively do so, any objection which it may now or hereafter have to the laying of venue of any such Proceeding in any such court, and (iv) waives, to the fullest extent permitted by Law, the defense of an inconvenient forum to the maintenance of such Proceeding in any such court. Each of the parties agrees that a final judgment in any

such Proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by Law. Each party to

this Agreement irrevocably consents to service of process in the manner provided for notices in Section 6.1. Nothing in this Agreement will affect the right of any party to this Agreement to serve process in any other manner permitted by Law.

6.6 Severability. If any term or other provision of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or incapable of being enforced by any rule of Law or public policy, all other terms, conditions and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible to the fullest extent permitted by applicable Law and in an acceptable manner to the end that the transactions contemplated hereby are fulfilled to the extent possible.

6.7 Counterparts and Signature. This Agreement may be signed in any number of counterparts, including by facsimile or other electronic transmission each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

6.8 Termination. Except as otherwise provided in Sections 2.4(h) and 4.5, this Agreement will be terminated and of no force or effect, the parties hereto will have no liability hereunder, and no payments will be required to be made, upon the earlier to occur of (a) the payment of all potential CPR Payment Amounts required to be paid or potentially payable under the terms of this Agreement and (b) 45 days after the Final Notice Date (provided that the foregoing shall not affect or limit the obligations of Parent or the Rights Agent to pay or otherwise with respect to any CPR Payment Amount payable in connection with Milestones (as defined in the Novartis Agreement) achieved or occurring prior to the date thirty six months after the date of this Agreement or payable in connection with the Final Notice, and the provisions of this Agreement applicable thereto shall survive any expiration or termination of this Agreement). In no event will any CPR Payment Amount become payable in respect of Milestones (as defined in the Novartis Agreement) achieved or occurring, or other payments received by the Company or its affiliates, after the date that is thirty six months after the date of this Agreement.

6.9 Entire Agreement. This Agreement and the Merger Agreement (including the schedules, annexes and exhibits thereto, the documents and instruments referred to therein and the documents delivered pursuant thereto) constitute the entire agreement of the parties and supersede all prior agreements and undertakings, both written and oral, among the parties, or any of them, with respect to the subject matter hereof and, except as otherwise expressly provided herein or therein, are not intended to confer upon any other Person any rights or remedies hereunder or thereunder.

6.10 Waiver of Jury Trial. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE IT HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT AND ANY OF THE AGREEMENTS DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY CERTIFIES AND ACKNOWLEDGES THAT (I) NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE EITHER OF SUCH WAIVERS, (II) IT UNDERSTANDS AND HAS CONSIDERED THE IMPLICATIONS OF SUCH WAIVERS, (III) IT MAKES SUCH WAIVERS VOLUNTARILY AND (IV) IT HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 6.10.

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[*Remainder of page intentionally left blank*]

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IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed on its behalf by its duly authorized officers as of the day and year first above written.

INTREXON CORPORATION

By:
Name:
Title:

AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC

By:
Name:
Title:

[Signature Page to Contingent Payment Rights Agreement]

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EXHIBIT A

Fee Schedule

Acceptance Fee $750.00

Annual Administration fee $7,200.00 (in advance on the effective time of the Agreement)

Milestone Payment Fee $3,500.00 per event (if applicable)

Escheatment charge: $300.00 per state filed & $2.00 per eligible holder (if applicable)

Customary out-of-pocket and extraordinary expenses

Fees are payable on or prior to the effective date

Bank Account Information: [ ]

The party below is responsible for payment of the fees:

Name: Intrexon Corporation

Attention: Don Lehr

Address: 20374 Seneca Meadows Parkway

Address: Germantown, MD 20876

Facsimile: (301) 556-9902

Phone: (301) 556-9909

Email: dlehr@intrexon.com

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Annex C

Execution Copy

AMENDMENT NO. 1

TO

RIGHTS AGREEMENT

THIS AMENDMENT NO. 1 TO THE RIGHTS AGREEMENT (this **Amendment**) is made as of this 24th day of January, 2017 (the **Amendment Effective Date**), by and between GenVec, Inc., a Delaware corporation (the **Company**), and American Stock Transfer & Trust Company, LLC (the **Rights Agent**) to amend that certain Rights Agreement, dated as of August 11, 2011, by and between the Company and the Rights Agent (the **Rights Agreement**). Capitalized terms used and not otherwise defined herein shall have the meanings ascribed to such terms in the Rights Agreement.

WHEREAS, the Board of Directors of the Company (the **Board**) has determined that it is in the best interests of the Company and its stockholders to amend the Rights Agreement as set forth herein immediately prior to and in connection with the execution of the Agreement and Plan of Merger, dated as of January 24, 2017 (as amended, modified or supplemented, from time to time, the **Merger Agreement**), by and among the Company, Intrexon Corporation and Intrexon GV Holding, Inc. (**Merger Sub**), pursuant to which Merger Sub will merge with and into the Company with the Company continuing as the surviving corporation;

WHEREAS, the Company desires to amend the Rights Agreement pursuant to Section 27 of the Rights Agreement, immediately prior to entering into the Merger Agreement, to facilitate the transactions contemplated by the Merger Agreement;

WHEREAS, pursuant to Section 27 of the Rights Agreement, the Company has delivered to the Rights Agent a certificate signed by an appropriate officer of the Company that states that this Amendment is in compliance with the terms of Section 27 of the Rights Agreement; and

WHEREAS, pursuant to resolutions adopted at a duly convened special meeting of the Board held on January 24, 2017, the Board has determined that it is in the best interests of the Company and its stockholders, and consistent with the objectives of the Board in adopting the Rights Agreement, to amend the Rights Agreement in the manner set forth herein immediately prior to entering into the Merger Agreement to except from the operation of the Rights Agreement the Merger Agreement and any and all transactions contemplated by the Merger Agreement and the Contingent Payment Rights Agreement (as defined below).

NOW, THEREFORE, in consideration for the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto, agree as follows:

1. Amendments to Section 1.

a.

The definition of Acquiring Person in Section 1(a) of the Rights Agreement is hereby amended by adding the following sentence to the end of said definition as subsection 1(a)(vi):

Notwithstanding anything to the contrary in this Agreement, none of Parent, Merger Sub or any of their respective Affiliates or Associates shall become an Acquiring Person and the term Acquiring Person shall not include any of Parent, Merger Sub or any of their respective Affiliates or Associates, solely by reason of (A) the approval, execution, delivery, performance or public announcement of the Merger Agreement (including any amendments, modifications or supplements thereto), (B) the consummation of the merger provided for by the Merger Agreement, (C) the execution, delivery or performance of the Contingent Payment Rights Agreement or

(D) consummation of any other transactions contemplated by the Merger Agreement or the Contingent Payment Rights Agreement, including, but not limited to, the potential future payments thereunder.

b. The definition of Distribution Date in Section 1(j) of the Rights Agreement is hereby amended by deleting it in its entirety and replacing it with the following:

Distribution Date shall mean the earlier of (i) the Close of Business on the tenth Business Day after the Stock Acquisition Date (or, if the tenth Business Day after the Stock Acquisition Date occurs before the Record Date, the Close of Business on the Record Date) and (ii) the Close of Business on the tenth Business Day (or, if such tenth Business Day occurs before the Record Date, the Close of Business on the Record Date), or such later date as may be determined by action of the Board prior to such time as any Person becomes an Acquiring Person, after the date of the commencement by any Person (other than the Company, any Subsidiary of the Company, any employee benefit plan of the Company or of any Subsidiary, any Person holding shares of Common Stock for or pursuant to the terms of any such plan, or Parent, Merger Sub or any of their Affiliates or Associates) of, or of the first public announcement of the intention of any Person (other than any of the Persons referred to in the preceding parenthetical) to commence, a tender or exchange offer the consummation of which would result in such Person becoming the Beneficial Owner of 20% or more of the outstanding shares of Common Stock.

c. Section 1 of the Rights Agreement is hereby amended by adding the following definitions to the end of Section 1:

Contingent Payment Rights Agreement shall mean the Contingent Payment Rights Agreement to be entered into by and between Parent and the rights agents name therein, substantially in the form attached as an exhibit to the Merger Agreement.

Merger Agreement shall mean the Agreement and Plan of Merger, dated as of January 24, 2017 (as amended, modified or supplemented, from time to time).

Merger Sub shall mean Intrexon GV Holding, Inc., a Delaware corporation.

Parent shall mean Intrexon Corporation, a Virginia corporation.

2. Amendment to Section 11(a)(ii). Section 11(a)(ii) of the Rights Agreement is hereby amended by adding the following sentence to the end of Section 11(a)(ii):

Notwithstanding anything in this Agreement to the contrary, none of (A) the approval, execution, delivery, performance or public announcement of the Merger Agreement (including any amendments, modifications or supplements thereto), (B) the consummation of the merger provided for by the Merger Agreement, (C) the execution, delivery or performance of the Contingent Payment Rights Agreement or (D) consummation of any other transactions contemplated by the Merger Agreement or the Contingent Payment Rights Agreement, including, but not limited to, the potential future payments thereunder shall cause the Rights to be adjusted or become exercisable in accordance with this Section 11(a)(ii).

3. Amendment to Section 13(a)(i). Section 13(a)(i) of the Rights Agreement is hereby amended by adding the following sentence to the end of Section 13(a)(i):

Notwithstanding anything in this Agreement to the contrary, (A) the provisions of Section 13(a)(i) shall not be applicable to the merger provided for by the Merger Agreement and (B) provided that neither Merger Sub nor Parent has become an Acquiring Person, any other person becoming an Acquiring Person shall not cause the provisions of Section 13(a)(i) to apply to Merger Sub or Parent as an other Person ; provided, that nothing in this clause (B) shall restrict the application of Section 13(a)(i) to an Acquiring Person or any Affiliates thereof.

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4. Benefits. All of the covenants and provisions of this Amendment by or for the benefit of the Company or the Rights Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

5. Governing Law. This Amendment shall be deemed to be a contract made under the laws of the State of Delaware and for all purposes shall be governed by and construed in accordance with the laws of such State applicable to contracts to be made and performed entirely within such State.

6. Counterparts. This Amendment may be executed in one or more counterparts (including by facsimile or other electronic transmission), and by the different parties hereto in separate counterparts, each of which when executed shall be deemed to be an original, but all of which taken together shall constitute one and the same instrument.

7. Entire Agreement. The Rights Agreement (including any Schedules and Exhibit thereto), as supplemented and modified by this Amendment, constitutes the full and entire understanding and agreement among the parties with respect to the subject matter thereof and hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties are expressly canceled.

8. Remaining Provisions of the Agreement. Except as provided herein, each of the other provisions of the Rights Agreement shall remain in full force and effect.

9. References. Upon the effectiveness of this Amendment, on and after the date hereof, each reference in the Agreement to this Agreement, hereunder, hereof, herein or words of like import shall mean and be a reference to the Rights Agreement, as amended hereby.

[Signature Page Follows]

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IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed, all as of the date first written above.

GENVEC, INC.

By: /s/ Douglas J. Swirsky
Name: Douglas J. Swirsky
Title: President and Chief Executive Officer

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IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed, all as of the date first written above.

AMERICAN STOCK TRANSFER & TRUST

COMPANY, LLC

By: /s/ Michael A. Nespoli
Name: Michael A. Nespoli
Title: Executive Director

[Signature Page to Amendment No. 1 to Rights Agreement]

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ANNEX D

Section 262 of the Delaware General Corporation Law

§ 262 Appraisal rights

(a) Any stockholder of a corporation of this State who holds shares of stock on the date of the making of a demand pursuant to subsection (d) of this section with respect to such shares, who continuously holds such shares through the effective date of the merger or consolidation, who has otherwise complied with subsection (d) of this section and who has neither voted in favor of the merger or consolidation nor consented thereto in writing pursuant to § 228 of this title shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder s shares of stock under the circumstances described in subsections (b) and (c) of this section. As used in this section, the word stockholder means a holder of record of stock in a corporation; the words stock and share mean and include what is ordinarily meant by those words; and the words depository receipt mean a receipt or other instrument issued by a depository representing an interest in 1 or more shares, or fractions thereof, solely of stock of a corporation, which stock is deposited with the depository.

(b) Appraisal rights shall be available for the shares of any class or series of stock of a constituent corporation in a merger or consolidation to be effected pursuant to § 251 (other than a merger effected pursuant to § 251(g) of this title and, subject to paragraph (b)(3) of this section, § 251(h) of this title), § 252, § 254, § 255, § 256, § 257, § 258, § 263 or § 264 of this title:

(1) Provided, however, that, except as expressly provided in § 363(b) of this title, no appraisal rights under this section shall be available for the shares of any class or series of stock, which stock, or depository receipts in respect thereof, at the record date fixed to determine the stockholders entitled to receive notice of the meeting of stockholders to act upon the agreement of merger or consolidation, were either: (i) listed on a national securities exchange or (ii) held of record by more than 2,000 holders; and further provided that no appraisal rights shall be available for any shares of stock of the constituent corporation surviving a merger if the merger did not require for its approval the vote of the stockholders of the surviving corporation as provided in § 251(f) of this title.

(2) Notwithstanding paragraph (b)(1) of this section, appraisal rights under this section shall be available for the shares of any class or series of stock of a constituent corporation if the holders thereof are required by the terms of an agreement of merger or consolidation pursuant to §§ 251, 252, 254, 255, 256, 257, 258, 263 and 264 of this title to accept for such stock anything except:

a. Shares of stock of the corporation surviving or resulting from such merger or consolidation, or depository receipts in respect thereof;

b. Shares of stock of any other corporation, or depository receipts in respect thereof, which shares of stock (or depository receipts in respect thereof) or depository receipts at the effective date of the merger or consolidation will be either listed on a national securities exchange or held of record by more than 2,000 holders;

c. Cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a. and b. of this section; or

d. Any combination of the shares of stock, depository receipts and cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a., b. and c. of this section.

(3) In the event all of the stock of a subsidiary Delaware corporation party to a merger effected under § 251(h), § 253 or § 267 of this title is not owned by the parent immediately prior to the merger, appraisal rights shall be available for the shares of the subsidiary Delaware corporation.

(4) In the event of an amendment to a corporation s certificate of incorporation contemplated by § 363(a) of this title, appraisal rights shall be available as contemplated by § 363(b) of this title, and the procedures of

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this section, including those set forth in subsections (d) and (e) of this section, shall apply as nearly as practicable, with the word amendment substituted for the words merger or consolidation, and the word corporation substituted for the words constituent corporation and/or surviving or resulting corporation.

(c) Any corporation may provide in its certificate of incorporation that appraisal rights under this section shall be available for the shares of any class or series of its stock as a result of an amendment to its certificate of incorporation, any merger or consolidation in which the corporation is a constituent corporation or the sale of all or substantially all of the assets of the corporation. If the certificate of incorporation contains such a provision, the provisions of this section, including those set forth in subsections (d), (e), and (g) of this section, shall apply as nearly as is practicable.

(d) Appraisal rights shall be perfected as follows:

(1) If a proposed merger or consolidation for which appraisal rights are provided under this section is to be submitted for approval at a meeting of stockholders, the corporation, not less than 20 days prior to the meeting, shall notify each of its stockholders who was such on the record date for notice of such meeting (or such members who received notice in accordance with § 255(c) of this title) with respect to shares for which appraisal rights are available pursuant to subsection (b) or (c) of this section that appraisal rights are available for any or all of the shares of the constituent corporations, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Each stockholder electing to demand the appraisal of such stockholder s shares shall deliver to the corporation, before the taking of the vote on the merger or consolidation, a written demand for appraisal of such stockholder s shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such stockholder s shares. A proxy or vote against the merger or consolidation shall not constitute such a demand. A stockholder electing to take such action must do so by a separate written demand as herein provided. Within 10 days after the effective date of such merger or consolidation, the surviving or resulting corporation shall notify each stockholder of each constituent corporation who has complied with this subsection and has not voted in favor of or consented to the merger or consolidation of the date that the merger or consolidation has become effective; or

(2) If the merger or consolidation was approved pursuant to § 228, § 251(h), § 253, or § 267 of this title, then either a constituent corporation before the effective date of the merger or consolidation or the surviving or resulting corporation within 10 days thereafter shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Such notice may, and, if given on or after the effective date of the merger or consolidation, shall, also notify such stockholders of the effective date of the merger or consolidation. Any stockholder entitled to appraisal rights may, within 20 days after the date of mailing of such notice or, in the case of a merger approved pursuant to § 251(h) of this title, within the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days after the date of mailing of such notice, demand in writing from the surviving or resulting corporation the appraisal of such holder s shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such holder s shares. If such notice did not notify stockholders of the effective date of the merger or consolidation, either (i) each such constituent corporation shall send a second notice before the effective date of the merger or consolidation notifying each of the holders of any class or series of stock of such constituent corporation that are entitled to appraisal rights of the effective date of the merger or consolidation or (ii) the surviving or resulting corporation shall send such a second notice to all such holders on or within 10 days after such effective date; provided, however, that if such second notice is sent more than 20 days following the sending of the first notice or, in the case of a merger approved pursuant to

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§ 251(h) of this title, later than the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days following the sending of the first notice, such second notice need only be sent to each stockholder who is entitled to appraisal rights and who has demanded appraisal of such holder s shares in accordance with this subsection. An affidavit of the secretary or assistant secretary or of the transfer agent of the corporation that is required to give either notice that such notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein. For purposes of determining the stockholders entitled to receive either notice, each constituent corporation may fix, in advance, a record date that shall be not more than 10 days prior to the date the notice is given, provided, that if the notice is given on or after the effective date of the merger or consolidation, the record date shall be such effective date. If no record date is fixed and the notice is given prior to the effective date, the record date shall be the close of business on the day next preceding the day on which the notice is given.

(e) Within 120 days after the effective date of the merger or consolidation, the surviving or resulting corporation or any stockholder who has complied with subsections (a) and (d) of this section hereof and who is otherwise entitled to appraisal rights, may commence an appraisal proceeding by filing a petition in the Court of Chancery demanding a determination of the value of the stock of all such stockholders. Notwithstanding the foregoing, at any time within 60 days after the effective date of the merger or consolidation, any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party shall have the right to withdraw such stockholder s demand for appraisal and to accept the terms offered upon the merger or consolidation. Within 120 days after the effective date of the merger or consolidation, any stockholder who has complied with the requirements of subsections (a) and (d) of this section hereof, upon written request, shall be entitled to receive from the corporation surviving the merger or resulting from the consolidation a statement setting forth the aggregate number of shares not voted in favor of the merger or consolidation and with respect to which demands for appraisal have been received and the aggregate number of holders of such shares. Such written statement shall be mailed to the stockholder within 10 days after such stockholder s written request for such a statement is received by the surviving or resulting corporation or within 10 days after expiration of the period for delivery of demands for appraisal under subsection (d) of this section hereof, whichever is later. Notwithstanding subsection (a) of this section, a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person may, in such person s own name, file a petition or request from the corporation the statement described in this subsection.

(f) Upon the filing of any such petition by a stockholder, service of a copy thereof shall be made upon the surviving or resulting corporation, which shall within 20 days after such service file in the office of the Register in Chancery in which the petition was filed a duly verified list containing the names and addresses of all stockholders who have demanded payment for their shares and with whom agreements as to the value of their shares have not been reached by the surviving or resulting corporation. If the petition shall be filed by the surviving or resulting corporation, the petition shall be accompanied by such a duly verified list. The Register in Chancery, if so ordered by the Court, shall give notice of the time and place fixed for the hearing of such petition by registered or certified mail to the surviving or resulting corporation and to the stockholders shown on the list at the addresses therein stated. Such notice shall also be given by 1 or more publications at least 1 week before the day of the hearing, in a newspaper of general circulation published in the City of Wilmington, Delaware or such publication as the Court deems advisable. The forms of the notices by mail and by publication shall be approved by the Court, and the costs thereof shall be borne by the surviving or resulting corporation.

(g) At the hearing on such petition, the Court shall determine the stockholders who have complied with this section and who have become entitled to appraisal rights. The Court may require the stockholders who have demanded an appraisal for their shares and who hold stock represented by certificates to submit their certificates of stock to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any stockholder fails to comply with such direction, the Court may dismiss the proceedings as to such stockholder. If immediately before the merger or consolidation the shares of the class or series of stock of the constituent corporation as to which appraisal

rights are available were listed on a national securities exchange, the Court shall dismiss the proceedings as to all holders of such shares who are otherwise entitled to appraisal rights unless

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(1) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, (2) the value of the consideration provided in the merger or consolidation for such total number of shares exceeds $1 million, or (3) the merger was approved pursuant to § 253 or § 267 of this title.

(h) After the Court determines the stockholders entitled to an appraisal, the appraisal proceeding shall be conducted in accordance with the rules of the Court of Chancery, including any rules specifically governing appraisal proceedings. Through such proceeding the Court shall determine the fair value of the shares exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation, together with interest, if any, to be paid upon the amount determined to be the fair value. In determining such fair value, the Court shall take into account all relevant factors. Unless the Court in its discretion determines otherwise for good cause shown, and except as provided in this subsection, interest from the effective date of the merger through the date of payment of the judgment shall be compounded quarterly and shall accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the effective date of the merger and the date of payment of the judgment. At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest shall accrue thereafter as provided herein only upon the sum of (1) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (2) interest theretofore accrued, unless paid at that time. Upon application by the surviving or resulting corporation or by any stockholder entitled to participate in the appraisal proceeding, the Court may, in its discretion, proceed to trial upon the appraisal prior to the final determination of the stockholders entitled to an appraisal. Any stockholder whose name appears on the list filed by the surviving or resulting corporation pursuant to subsection (f) of this section and who has submitted such stockholder s certificates of stock to the Register in Chancery, if such is required, may participate fully in all proceedings until it is finally determined that such stockholder is not entitled to appraisal rights under this section.

(i) The Court shall direct the payment of the fair value of the shares, together with interest, if any, by the surviving or resulting corporation to the stockholders entitled thereto. Payment shall be so made to each such stockholder, in the case of holders of uncertificated stock forthwith, and the case of holders of shares represented by certificates upon the surrender to the corporation of the certificates representing such stock. The Court s decree may be enforced as other decrees in the Court of Chancery may be enforced, whether such surviving or resulting corporation be a corporation of this State or of any state.

(j) The costs of the proceeding may be determined by the Court and taxed upon the parties as the Court deems equitable in the circumstances. Upon application of a stockholder, the Court may order all or a portion of the expenses incurred by any stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorney s fees and the fees and expenses of experts, to be charged pro rata against the value of all the shares entitled to an appraisal.

(k) From and after the effective date of the merger or consolidation, no stockholder who has demanded appraisal rights as provided in subsection (d) of this section shall be entitled to vote such stock for any purpose or to receive payment of dividends or other distributions on the stock (except dividends or other distributions payable to stockholders of record at a date which is prior to the effective date of the merger or consolidation); provided, however, that if no petition for an appraisal shall be filed within the time provided in subsection (e) of this section, or if such stockholder shall deliver to the surviving or resulting corporation a written withdrawal of such stockholder s demand for an appraisal and an acceptance of the merger or consolidation, either within 60 days after the effective date of the merger or consolidation as provided in subsection (e) of this section or thereafter with the written approval of the corporation, then the right of such stockholder to an appraisal shall cease. Notwithstanding the foregoing, no appraisal proceeding in the Court of Chancery shall be dismissed as to any stockholder without the approval of the Court, and such approval may be conditioned upon such terms as the Court deems just; provided, however that this provision

shall not affect the right of any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party to withdraw such stockholder s demand for appraisal and to accept the terms offered upon the merger or consolidation within 60 days after the effective date of the merger or consolidation, as set forth in subsection (e) of this section.

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(l) The shares of the surviving or resulting corporation to which the shares of such objecting stockholders would have been converted had they assented to the merger or consolidation shall have the status of authorized and unissued shares of the surviving or resulting corporation.

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Annex E

[Roth Letterhead]

January 24, 2017

Board of Directors

GenVec, Inc.

910 Clopper Road

Suite 220N

Gaithersburg, Maryland 20878

Dear Sirs:

You have requested our opinion as to the fairness, from a financial point of view, to the holders of common stock, par value $0.001 per share (Company Common Stock), of GenVec, Inc. (the Company) of the Consideration (as defined below) to be received by such holders pursuant to the terms of the proposed Agreement and Plan of Merger (the Merger Agreement) to be entered into by and among Intrexon Corporation (Intrexon), Intrexon GV Holding, Inc. (Merger Sub) and the Company. Capitalized terms used herein have the respective meanings ascribed thereto in the January 24, 2017 draft of the Merger Agreement provided to us by GenVec (the Draft Merger Agreement).

As more specifically set forth in the Merger Agreement, and subject to the terms, conditions and adjustments set forth therein, the Merger Agreement provides for the acquisition of the Company through the merger of Merger Sub with and into the Company with the Company as the surviving entity thereof (the Merger). By virtue of the Merger, each share of Company Common Stock issued and outstanding immediately prior to the effective time of the Merger (other than (i) shares held in the Company s treasury, (ii) shares held by Intrexon or Merger Sub immediately prior to the effective time of the Merger and (iii) any Dissenting Shares) will be converted into the right to receive (i) a number of shares of common stock, no par value, of Intrexon (Intrexon Common Stock) equal to the Exchange Ratio and (ii) one Contingent Payment Right which represents the right to receive a pro rata portion of the CPR Payment Amount (as such term is defined in the Contingent Payment Rights Agreement) (collectively, the Consideration).

In connection with our review of the proposed Merger, and in arriving at our opinion, we have: (i) reviewed the Draft Merger Agreement; (ii) reviewed certain information, including financial forecasts, relating to the business, earnings, cash flow, assets, liabilities and prospects of the Company that were furnished to us by the Company; (iii) conducted discussions with members of senior management and representatives of the Company concerning the matters described in clause (ii); (iv) reviewed publicly available information relating to the businesses of the Company and Intrexon; (v) discussed the past and current operations and financial condition and the prospects of the Company with members of senior management of the Company; (vi) reviewed the financial terms, to the extent publicly available, of certain acquisition and financing transactions that we deemed relevant; and (vii) performed such other analyses and considered such other factors as we deemed appropriate for the purpose of rendering our opinion.

We have relied upon and assumed, without assuming liability or responsibility for independent verification, the accuracy and completeness of all information that was publicly available or was furnished, or otherwise made available, to us or discussed with or reviewed by or for us. We have further assumed that the financial information

provided has been prepared on a reasonable basis in accordance with industry practice, and that management of the Company is not aware of any information or facts that would make any information provided to us incomplete or misleading. Without limiting the generality of the foregoing, for the purpose of this opinion, we have assumed that with respect to financial forecasts, estimates and other forward-looking information reviewed by us, that such information has been reasonably prepared based on assumptions reflecting the best

currently available estimates and judgments of the management of the Company as to the expected future results of operations and financial condition of the Company. We express no opinion as to any such financial forecasts, estimates or forward-looking information or the assumptions on which they were based.

In connection with our opinion, we have assumed and relied upon, without independent verification, the accuracy and completeness of all of the financial, legal, regulatory, tax, accounting and other information provided to, discussed with or reviewed by us. Our opinion does not address any legal, regulatory, tax or accounting issues.

In arriving at our opinion, we have assumed that the executed Merger Agreement will be in all material respects identical to the Draft Merger Agreement reviewed by us. We have relied upon and assumed, without independent verification, that (i) the representations and warranties of all parties set forth in the Merger Agreement and all related documents and instruments that are referred to therein are true and correct, (ii) each party to the Merger Agreement will fully and timely perform all of the covenants and agreements required to be performed by such party, (iii) the Merger will be consummated pursuant to the terms of the Merger Agreement without amendments thereto, and (iv) all conditions to the consummation of the Merger will be satisfied without waiver by any party of any conditions or obligations thereunder. Additionally, we have assumed that all the necessary regulatory approvals and consents required for the Merger, including the approval of the stockholders of the Company, will be obtained in a manner that will not adversely affect the Company or the contemplated benefits of the Merger.

In arriving at our opinion, we have not performed any appraisals or valuations of any specific assets or liabilities (fixed, contingent or other) of the Company, and have not been furnished or provided with any such appraisals or valuations. Without limiting the generality of the foregoing, we have undertaken no independent analysis of any pending or threatened litigation, regulatory action, possible unasserted claims or other contingent liabilities, to which the Company or any of its affiliates is a party or may be subject, and at the direction of the Board of Directors of the Company and with its consent, our opinion makes no assumption concerning, and therefore does not consider, the possible assertion of claims, outcomes or damages arising out of any such matters.

This opinion is necessarily based upon the information available to us and facts and circumstances as they exist and are subject to evaluation on the date hereof; events occurring after the date hereof could materially affect the assumptions used in preparing this opinion. We are not expressing any opinion herein as to the price at which shares of Intrexon Common Stock may trade following announcement of the Merger or at any future time. We have not undertaken to reaffirm or revise this opinion or otherwise comment upon any events occurring after the date hereof and do not have any obligation to update, revise or reaffirm this opinion.

We have been engaged by the Company to act as its financial advisor and we will receive a fee from the Company for providing such services, including the provision of this opinion. Our fee is not contingent upon the consummation of the Merger. The Company has also agreed to indemnify us against certain liabilities and reimburse us for certain expenses in connection with our services. In the ordinary course of business, we and our affiliates may acquire, hold or sell, for our and our affiliates own accounts and for the accounts of customers, equity, debt and other securities and financial instruments (including bank loans and other obligations) of the Company and the other parties to the Merger, and, accordingly, may at any time hold a long or a short position in such securities. We have not otherwise had a material relationship with, nor otherwise received fees from, the Company, Intrexon or any other parties to the Merger during the two years preceding the date hereof. In February 2014, the Company and we entered into an Equity Distribution Agreement (the EDA) relating to the establishment of a $10 million at-the-market program (the Program)

for the sale of common stock through us. Although the EDA remains in place, the Program was suspended in March 2014 and no further sales were made. In the future, we may provide financial advisory and investment banking services to Intrexon and its affiliates for which we would expect to receive compensation.

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Consistent with applicable legal and regulatory requirements, Roth Capital Partners, LLC has adopted policies and procedures to establish and maintain the independence of our research departments and personnel. As a result, our research analysts may hold views, make statements or investment recommendations and/or publish research reports with respect to Intrexon, the Company and/or the Merger that differ from the views of our investment banking personnel.

This opinion has been prepared for the information of the Board of Directors of the Company for its use in connection with its consideration of the Merger and is not intended to be and does not constitute a recommendation to any stockholder of the Company as to how such stockholder should vote on any matter relating to the Merger or any other matter. Except with respect to the inclusion of this opinion in the prospectus/proxy statement relating to the Merger in accordance with our engagement letter with the Company, this opinion shall not be disclosed, referred to or published (in whole or in part), nor shall any public references to us be made, without our prior written approval. This opinion has been approved for issuance by the Roth Capital Partners, LLC Fairness Opinion Committee.

This opinion addresses only the fairness, from a financial point of view, to the holders of Company Common Stock of the proposed Consideration to be received by such holders in the Merger and does not address the relative merits of the Merger or any alternatives to the Merger, the Company s underlying decision to proceed with or effect the Merger, or any other aspect of the Merger. This opinion does not address the fairness of the Merger to the holders of any other class of securities, creditors or other constituencies of the Company. This opinion is not a valuation of the Company or its assets or any class of its securities. We are not experts in, nor do we express an opinion on, legal, tax, accounting or regulatory issues. We do not express an opinion about the fairness of the amount or nature of any compensation payable or to be paid to any of the officers, directors or employees, of the Company, whether or not relative to the Merger.

Based upon and subject to the foregoing, it is our opinion that, as of the date hereof, the Consideration to be received by the holders of Company Common Stock in the Merger is fair, from a financial point of view, to such holders.

Sincerely,

/s/ Roth Capital Partners, LLC

Roth Capital Partners, LLC

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Part II

Information Not Required in Prospectus

Item 21. 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 statement schedules

Schedules have been omitted because the information required to be set forth herein is not applicable or is shown in the financial statements or notes thereto.

Item 22. Undertakings.

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement: (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933; (ii) to reflect in the prospectus any facts or events arising after the effective date of this 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 this 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% 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) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, if the Registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration

statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this Registration Statement, regardless of the

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underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) That prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this Registration Statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the registrant undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form.

(7) That every prospectus (i) that is filed pursuant to the immediately preceding paragraph, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to this Registration Statement and will not be used until such amendment has become effective, and that for the purpose of determining liabilities 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.

(8) 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 Securities 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 Securities Act and will be governed by the final adjudication of such issue.

(9) To respond to requests for information that is incorporated by reference into the prospectus pursuant to Items 4, 10(b), 11, or 13 of this Form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(10) To supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in this Registration Statement when it became effective.

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Signatures

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this amended registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of West Palm Beach, State of Florida, on May 11, 2017.

INTREXON CORPORATION

By: *
Randal J. Kirk

Chief Executive Officer and Chairman of the Board of Directors

Power of attorney

KNOW ALL PERSONS BY THESE PRESENTS, that Vinita Gupta, whose signature appears below, constitutes and appoints Randal J. Kirk, Rick Sterling and Donald P. Lehr and each of them, as her true and lawful attorneys-in-fact and agent, with full power of substitution and resubstitution, for her and in her name, place and stead, in any and all capacities, to sign the Registration Statement on Form S-4 of Intrexon Corporation, and any or all amendments (including post-effective amendments) thereto, and to file the same with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises hereby ratifying and confirming all that said attorneys-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
*	Chief Executive Officer and Chairman of the Board of Directors	*
Randal J. Kirk	(Principal Executive Officer)	
*	Chief Financial Officer (Principal Accounting and Financial Officer)	*
Rick L. Sterling		
*	Director	*
Cesar L. Alvarez		
*	Director	*

Steven Frank		
*	Director	*
Jeffrey B. Kindler		
*	Director	*
Dean J. Mitchell		

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Signature	Title	Date
*	Director	*
James S. Turley		
*	Lead Independent Director	*
Robert B. Shapiro		
*	Director	*
Fred Hassan		
/s/ Vinita Gupta	Director	May 11, 2017
Vinita Gupta		

* Pursuant to Power of Attorney

/s/ Donald P. Lehr	May 11, 2017
Donald P. Lehr, Attorney-in-fact	

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Exhibit index

Exhibit number	Description of exhibit
2.1#	Agreement and Plan of Merger, dated as of January 24, 2017, by and among Intrexon, GenVec and Intrexon GV Holding, Inc. (attached as Annex A to the proxy statement/prospectus included in this Registration Statement on Form S-4).
3.1*	Amended and Restated Articles of Incorporation (incorporated by reference to Exhibit 3.1 to Intrexon s Current Report on Form 8-K, filed on August 15, 2013 with the Securities and Exchange Commission).
3.2*	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to Intrexon s Current Report on Form 8-K, filed on March 14, 2016 with the Securities and Exchange Commission).
4.1*	Specimen certificate evidencing shares of common stock (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to Intrexon s Registration Statement on Form S-1, filed on July 29, 2013 with the Securities and Exchange Commission).
4.2*	Warrants to purchase shares of common stock (incorporated by reference to Exhibit 4.2 to Amendment No. 1 to Intrexon s Registration Statement on Form S-1, filed on July 29, 2013 with the Securities and Exchange Commission).
4.3*	Eighth Amended and Restated Investors Rights Agreement, dated March 1, 2013, by and among Intrexon and the holders of the Company s preferred stock and certain holders of Intrexon s common stock and Joinder thereto (incorporated by reference to Exhibit 4.3 to Intrexon s Registration Statement on Form S-1, filed on July 9, 2013 with the Securities and Exchange Commission).
5.1*	Opinion of Troutman Sanders LLP (incorporated by reference to Exhibit 5.1 to Intrexon s Registration Statement on Form S-4, filed on March 17, 2017 with the Securities and Exchange Commission).
10.1*	Research Collaboration and License Agreement, dated January 13, 2010, by and between GenVec, Inc. and Novartis Institutes for BioMedical Research, Inc. (incorporated by reference to Exhibit 10.1 to GenVec s Current Report on Form 8-K, filed with the Securities and Exchange Commission on January 19, 2010).
10.2*	Amendment, dated January 24, 2012, to Research Collaboration and License Agreement, dated January 13, 2010, by and between GenVec, Inc. and Novartis Institutes for BioMedical Research, Inc. (incorporated by reference to Exhibit 10.37 to GenVec s Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 15, 2012).
10.3*	Second Amendment, dated January 12, 2013, to Research Collaboration and License Agreement, dated January 13, 2010, by and between GenVec, Inc. and Novartis Institutes for BioMedical Research, Inc. (incorporated by reference to Exhibit 10.43 to GenVec s Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 22, 2013).
10.4*	Amendment No. 1, dated November 10, 2015, to Research Collaboration and License Agreement, dated January 13, 2010, by and between GenVec, Inc. and Novartis Institutes for BioMedical Research, Inc. (incorporated by reference to Exhibit 10.33 to GenVec s Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 9, 2016).
21.1*	List of Subsidiaries of Intrexon Corporation.

23.1	Consent of PricewaterhouseCoopers LLP.
23.2	Consent of RSM US, LLP.
23.3	Consent of Dixon Hughes Goodman LLP.

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Exhibit number	Description of exhibit
23.4	Consent of Stegman & Company.
23.5*	Consent of Troutman Sanders LLP (included in Exhibit 5.1).
24.1*	Power of Attorney.
99.1	Consent of Roth Capital Partners, LLC.
99.2	Form of Proxy Card of GenVec, Inc.

* Previously filed and incorporated by reference.
# Intrexon will furnish to the SEC, upon request, a copy of each schedule and exhibit to this agreement.