

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

**SCHEDULE 13D**

(Amendment No. 1)\*

Under the Securities Exchange Act of 1934

**ZIOPHARM ONCOLOGY, INC.**

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

98973P101

(CUSIP Number)

Third Security, LLC  
1881 Grove Avenue  
Radford, Virginia 24141  
Attention: Marcus E. Smith, Esq.  
(540) 633-7900

(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

Copy to:  
Intrexon Corporation  
Attention: Legal  
20358 Seneca Meadows Parkway  
Germantown, Maryland 20876  
(301) 556-9809

February 3, 2011

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(b)(3) or (4), check the following box .

**NOTE:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  <b>Randal J. Kirk</b>		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF GROUP (a) <input type="radio"/> (b) <input checked="" type="radio"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	SOURCE OF FUNDS  <b>PF</b>		
<b>5</b>	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)		0
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  <b>United States</b>		
<b>NUMBER OF          SHARES          BENEFICIALLY          OWNED BY          EACH          REPORTING          PERSON WITH</b>	<b>7</b>	SOLE VOTING POWER  <b>25,000</b>	
	<b>8</b>	SHARED VOTING POWER  <b>7,973,161</b>	
	<b>9</b>	SOLE DISPOSITIVE POWER  <b>25,000</b>	
	<b>10</b>	SHARED DISPOSITIVE POWER  <b>7,973,161</b>	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON <b>7,998,161</b>		
<b>12</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		0
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) <b>12.2%</b>		
<b>14</b>	TYPE OF REPORTING PERSON <b>IN</b>		

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  <b>Intrexon Corporation</b> I.R.S. IDENTIFICATION NO.: 26-0084895	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF GROUP (a) <input type="radio"/> (b) <input checked="" type="radio"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  <b>WC</b>	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  <b>Virginia</b>	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7  SOLE VOTING POWER  <b>0</b>	
	8  SHARED VOTING POWER  <b>7,973,161</b>	
	9  SOLE DISPOSITIVE POWER  <b>0</b>	
	10  SHARED DISPOSITIVE POWER  <b>7,973,161</b>	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON <b>7,973,161</b>	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES	0
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) <b>12.1%</b>	
14	TYPE OF REPORTING PERSON <b>CO</b>	

This Amendment No. 1 (the "Amendment") amends and supplements the Statement on Schedule 13D, dated January 12, 2011 and filed on January 20, 2011 (the "Original Schedule 13D"), relating to the Common Stock, par value \$0.001 per share (the "Common Stock"), of ZIOPHARM Oncology, Inc., a Delaware corporation (the "Company"). Mr. Randal J. Kirk ("Mr. Kirk") and Intrexon Corporation, a Virginia corporation ("Intrexon" and, together with Mr. Kirk, the "Reporting Persons"), are filing this Amendment to disclose the acquisition by Intrexon of 1,910,000 shares of Common Stock in a public offering conducted by the Company (the "Offering"). Mr. Kirk could be deemed to have indirect beneficial ownership of the shares of Common Stock directly beneficially owned by Intrexon.

Except as set forth below, there are no changes to the information set forth in the Original Schedule 13D.

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**Item 3. Source and Amount of Funds or Other Consideration.**

Item 3 of the Original Schedule 13D is hereby amended and supplemented as follows:

On February 1, 2011, the Company and Intrexon entered into an amendment (the "Amendment") to the Stock Purchase Agreement (the "Stock Purchase Agreement") dated January 6, 2011, which amendment is included as Exhibit 3 hereto. Under the Stock Purchase Agreement, if requested by the Company and subject to certain restrictions and limitations, Intrexon has agreed to purchase securities in conjunction with future securities offerings of the Company that constitute "Qualified Financings," subject to an aggregate equity purchase commitment of \$50,000,000. Reference is made to the description of the Stock Purchase Agreement included as Exhibit 2 hereto. Under the Amendment, the parties agreed that in the event that Intrexon voluntarily elects to purchase securities in a Qualified Financing for which the Company does not request that Intrexon participate, the aggregate purchase price paid by Intrexon for such securities shall be applied against and reduce the then remaining maximum amount of Intrexon's \$50,000,000 aggregate equity purchase commitment. The foregoing descriptions of the Stock Purchase Agreement and the Amendment are qualified in their entirety by reference to such agreements, which are incorporated herein by reference.

**Item 5. Interest in Securities of the Issuer.**

Items 5(a) and (b) of the Original Schedule 13D are hereby amended and restated to read in its entirety as follows:

(a) and (b) See Items 11 and 13 of the cover pages to this Statement for the aggregate number of shares and percentage of issued and outstanding shares of Common Stock of the Company owned by the Reporting Persons. The percentage ownership is calculated based on 48,524,704 shares of Common Stock issued and outstanding as of the closing of the purchase of the Purchase Shares and the First Tranche Shares pursuant to the Stock Purchase Agreement on January 12, 2011, increased by (i) the 6,063,161 shares constituting the Purchase Shares and the First Tranche Shares, (ii) the 25,000 shares of restricted stock issued to Mr. Kirk in connection with his election to the Company's Board of Directors and (iii) the 11,040,000 shares issued in the Offering, including the overallotment option.

<b>Reporting Person</b>	<b>Amount of Common Stock Beneficially Owned</b>	<b>Percent of Class</b>	<b>Sole Power to Vote or Direct the Vote</b>	<b>Shared Power to Vote or Direct the Vote</b>	<b>Sole Power to Dispose or to Direct the Disposition</b>	<b>Shared Power to Dispose or to Direct the Disposition</b>
Randal J. Kirk	7,998,161	12.2%	25,000	7,973,161	25,000	7,973,161
Intrexon Corporation	7,973,161	12.1%	—	7,973,161	—	7,973,161

Mr. Kirk could be deemed to have indirect beneficial ownership of the shares of Common Stock directly beneficially owned by Intrexon.

**Item 7. Material to be Filed as Exhibits.**

- Exhibit 1 Exclusive Channel Partner Agreement by and between the Company and Intrexon dated as of January 6, 2011 (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, dated January 6, 2011, and incorporated herein by reference)\*\*
- Exhibit 2 Stock Purchase Agreement by and between the Company and Intrexon dated as of January 6, 2011 (filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, dated January 6, 2011, and incorporated herein by reference)
- Exhibit 3 Amendment to Stock Purchase Agreement dated February 1, 2011 between the Company and Intrexon (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, dated February 1, 2011, and incorporated herein by reference)
- Exhibit 4 Form of Registration Rights Agreement by and between the Company and Intrexon (incorporated by reference to Exhibit A to the Stock Purchase Agreement filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, dated January 6, 2011, and incorporated herein by reference)
- Exhibit 5 Joint Filing Agreement, dated as of February 11, 2011, by and between Mr. Kirk and Intrexon

\*\*Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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**SIGNATURES**

After reasonable inquiry and to the best of their knowledge and belief, the undersigned certify that the information set forth in this statement is true, complete and correct.

Date: February 11, 2011

/s/ Randal J. Kirk

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Randal J. Kirk

**INTREXON CORPORATION**

By: /s/ Randal J. Kirk

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Randal J. Kirk

Chief Executive Officer

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## EXHIBIT INDEX

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- Exhibit 4 Form of Registration Rights Agreement by and between the Company and Intrexon (incorporated by reference to Exhibit A to the Stock Purchase Agreement filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, dated January 6, 2011, and incorporated herein by reference)
- [Exhibit 5](#) Joint Filing Agreement, dated as of February 11, 2011, by and between Mr. Kirk and Intrexon

\*\*Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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**Joint Filing Agreement**

In accordance with Rule 13d-1(k) promulgated under the Securities Exchange Act of 1934, as amended, the persons named below agree to the joint filing on behalf of each of them a Statement on Schedule 13D (including amendments thereto) with regard to the common stock of ZIOPHARM Oncology, Inc., and further agree that this Joint Filing Agreement be included as an exhibit to such joint filings. In evidence thereof, the undersigned, being duly authorized, hereby execute this agreement as of the 11<sup>th</sup> day of February, 2011.

/s/ Randal J. Kirk

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Randal J. Kirk

**INTREXON CORPORATION**

By: /s/ Randal J. Kirk

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Randal J. Kirk  
Chief Executive Officer

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