

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

SCHEDULE 13D

(Amendment No. 4)*

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

November 7, 2012

(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 o.

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).

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS Randal J. Kirk	
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 PF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) 0	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 50,911
	8	SHARED VOTING POWER 14,879,624
	9	SOLE DISPOSITIVE POWER 50,911
	10	SHARED DISPOSITIVE POWER 14,879,624
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 14,930,535	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES 0	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 17.9%	
14	TYPE OF REPORTING PERSON IN	

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS Intrexon Corporation 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 WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e) 0	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Virginia	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 13,533,162
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 13,533,162
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 13,533,162	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES 0	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.3%	
14	TYPE OF REPORTING PERSON CO	

This Amendment No. 4 (the "Amendment") amends and supplements the Statement on Schedule 13D, dated January 12, 2011 and filed on January 20, 2011, as amended by Amendment No. 1 dated February 3, 2011 and filed on February 11, 2011, Amendment No. 2 dated August 9, 2011 and filed on August 16, 2011, and Amendment No. 3 dated January 20, 2012 and filed on January 25, 2012 (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, an affiliate of Mr. Kirk, of 3,636,926 shares of Common Stock in a private placement in connection with the satisfaction of a contingency contained in the Exclusive Channel Partner Agreement between Intrexon and the Company dated January 6, 2011 (the "Channel Agreement"). Mr. Kirk could be deemed to have indirect beneficial ownership of the shares of Common Stock directly beneficially owned by Intrexon and Kapital Joe, LLC ("Kapital Joe"), an affiliate of Mr. Kirk that also owns shares of Common Stock disclosed herein.

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

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

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

In the Channel Agreement the Company agreed to issue additional shares of Common Stock to Intrexon upon dosing of the first patient in a ZIOPHARM-conducted Phase II clinical trial in the United States, or similar study as the parties may agree in a country other than the United States, of a product that is created, produced, developed or identified directly or indirectly by the Company during the term of the Channel Agreement and that, subject to certain exceptions, involves DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer. Upon satisfaction of such contingency, the Company issued to Intrexon on November 7, 2012 an additional 3,636,926 shares of Common Stock (the "Second Tranche Shares"), in accordance with the Channel Agreement.

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 their 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 79,619,597 shares of Common Stock issued and outstanding as of October 26, 2012, based upon the number of shares disclosed by the Company as of such date in its Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2012, plus 3,636,926 shares issued as the Second Tranche Shares and 8,334 shares of Common Stock issuable upon exercise of stock options directly owned by Mr. Kirk that are currently exercisable.

Reporting Person	Amount of Common Stock Beneficially Owned	Percent of Class	Sole Power to Vote or Direct the Vote	Shared Power to Vote or Direct the Vote	Sole Power to Dispose or to Direct the Disposition	Shared Power to Dispose or to Direct the Disposition
Randal J. Kirk	14,930,535	17.9%	50,911	14,879,624 ⁽¹⁾	50,911	14,879,624 ⁽¹⁾
Intrexon Corporation	13,533,162	16.3%	—	13,533,162	—	13,533,162

⁽¹⁾ Includes 13,533,162 shares of Common Stock held by Intrexon and 1,346,462 shares of Common Stock held by Kapital Joe.

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

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

The Reporting Persons' responses to Items 3 and 4 are incorporated herein by reference.

Item 7. Material to be Filed as Exhibits.

Exhibit 1 Joint Filing Agreement, dated as of November 9, 2012, by and between Mr. Kirk and Intrexon

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: November 9, 2012

/s/ Randal J. Kirk

Randal J. Kirk

INTREXON CORPORATION

By: /s/ Randal J. Kirk

Randal J. Kirk

Chief Executive Officer

EXHIBIT INDEX

[Exhibit 1](#) Joint Filing Agreement, dated as of November 9, 2012, by and between Mr. Kirk and Intrexon

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 9th day of November, 2012.

/s/ Randal J. Kirk

Randal J. Kirk

INTREXON CORPORATION

By: /s/ Randal J. Kirk

Randal J. Kirk

Chief Executive Officer
