

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL	
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1. Name and Address of Reporting Person* MCINERNEY TIMOTHY			2. Issuer Name and Ticker or Trading Symbol ZIOPHARM ONCOLOGY INC [ZIOP]			5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)		
(Last)	(First)	(Middle)	3. Date of Earliest Transaction (Month/Day/Year) 09/15/2009			6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person		
ONE COVENTRY LANE			4. If Amendment, Date of Original Filed (Month/Day/Year)					
(Street)	HOPEWELL NJ 08525							
(City)	(State)	(Zip)						

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock, \$.001 par value	09/15/2009		P		50,000	A	\$1.825 ⁽⁶⁾	128,205	D	

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Warrants to Purchase Common Stock	\$4.75							09/13/2005	05/31/2012	Common Stock, \$.001 par value		20,767		D	
Director Stock Option (right to buy)	\$4.31							(1)	07/20/2015	Common Stock, \$.001 par value		15,029		D	
Director Stock Option (right to buy)	\$5.01							04/26/2006	04/26/2016	Common Stock		15,000		D	
Warrants to Purchase Common Stock	\$5.09							05/03/2006	05/03/2013	Common Stock, \$.001 par value		80,737		D	
Director Stock Option (right to buy)	\$6.49							(2)	12/13/2016	Common Stock		15,000		D	
Warrant	\$5.75							02/23/2007	02/23/2012	Common Stock		35,739		D	
Stock Option (right to buy)	\$4.85							(3)	06/18/2017	Common Stock		15,000		D	
Stock Option (right to buy)	\$2.73							(4)	12/12/2017	Common Stock		20,000		D	
Stock Option (right to buy)	\$0.7							(5)	05/13/2019	Common Stock		15,000		D	

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Warrants to purchase common stock	\$2.04	09/15/2009		P		50,000		09/15/2009	09/15/2014	Common Stock, \$.001 par value	50,000	(6)	50,000	D	
Warrants to purchase common stock	\$2.04	09/15/2009		J ⁽⁷⁾		40,298		09/15/2009	09/15/2014	Common Stock	40,298	(7)	40,298	D	

Explanation of Responses:

1. 7,515 shares vest on 7/20/06 and 7,514 shares vest on 7/20/07.
2. 5,000 shares vest on each of 12/13/07, 12/13/08 and 12/13/09.
3. 5,000 shares vest on each of 6/18/08, 6/18/09 and 6/18/10.
4. 6,667 shares vest on each of 12/12/08 and 12/12/09; 6,666 shares vest on 12/12/10.
5. 5,000 shares vest on each of 12/31/09, 6/30/2010 and 12/31/2010.
6. Shares and warrants purchased as Units in private placement offering.
7. Warrant issued for services rendered in connection with private placement.

/s/ Timothy McInerney

09/17/2009

** Signature of Reporting Person

Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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