

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

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

<b>1. Name and Address of Reporting Person *</b> Palmer Pamela P <hr/> (Last) (First) (Middle) C/O ACELRX PHARMACEUTICALS, INC., 575 CHESAPEAKE DRIVE <hr/> (Street) REDWOOD CITY CA 94063 <hr/> (City) (State) (Zip)	<b>2. Issuer Name and Ticker or Trading Symbol</b> ACELRX PHARMACEUTICALS INC [ACRX]	<b>5. Relationship of Reporting Person(s) to Issuer</b> (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) Chief Medical Officer
	<b>3. Date of Earliest Transaction</b> (Month/Day/Year) 03/02/2011	
	<b>4. If Amendment, Date of Original Filed</b> (Month/Day/Year)	

**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 <sup>(1)</sup>	03/02/2011		A		67,594	A	\$ 0	317,594	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 Underlying Securities (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 of Derivative Security: 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				
Stock Option (Right to Buy) (1)	\$ 3.45	03/02/2011		A		75,000		03/02/2012 <sup>(2)(3)</sup>	03/01/2021	Common Stock	75,000	\$ 0	75,000	D	
Stock Option (Right to Buy) (1)	\$ 3.45	03/02/2011		A		25,000		03/02/2012 <sup>(2)(3)</sup>	03/01/2021	Common Stock	25,000	\$ 0	25,000	D	

**Explanation of Responses:**

1. Issued pursuant to the 2011 Equity Incentive Plan.
2. The shares subject to the option vest as follows: 25% of the shares subject to the option vest on the 12 month anniversary of the Vesting Commencement Date (March 2, 2011) and the remaining shares subject to the stock option vest on an equal monthly basis over the following 36 months.
3. The shares have double-trigger acceleration on a change of control.

/s/ James Welch, Attorney- 03/04/2011  
in-fact

\*\* 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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