

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 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Blum Robert I</u> _____ (Last) (First) (Middle) <u>280 EAST GRAND AVENUE</u> _____ (Street) <u>SOUTH SAN FRANCISCO CA 94080</u> _____ (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>CYTOKINETICS INC [ CYTK ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>President &amp; CEO</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>12/15/2009</u>	
4. If Amendment, Date of Original Filed (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	12/15/2009		M <sup>(1)</sup>		500	A	\$1.2	18,916	D	
Common Stock	12/15/2009		S <sup>(2)</sup>		500	D	\$3.05	18,416	D	
Common Stock								12,500	I	by Trust 1 <sup>(3)</sup>
Common Stock								12,500	I	by Trust 2 <sup>(4)</sup>

**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
Incentive Stock Option (right to buy)	\$1.2	12/15/2009		M			500	05/21/2003 <sup>(5)</sup>	05/21/2013	Common Stock	500	\$0	34,500	D	
Incentive Stock Option (right to buy)	\$0.58							01/14/2000 <sup>(6)</sup>	11/14/2010	Common Stock	12		12	D	
Incentive Stock Option (right to buy)	\$1.2							07/10/2002 <sup>(7)</sup>	07/10/2012	Common Stock	18,833		18,833	D	
Incentive Stock Option (right to buy)	\$1.85							03/26/2009 <sup>(8)</sup>	02/26/2019	Common Stock	50,333		50,333	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				
Incentive Stock Option (right to buy)	\$2							12/18/2003 <sup>(9)</sup>	12/18/2013	Common Stock	27,500		27,500	D	
Incentive Stock Option (right to buy)	\$3.37							03/29/2008 <sup>(10)</sup>	02/28/2018	Common Stock	8,334		8,334	D	
Incentive Stock Option (right to buy)	\$6.59							04/11/2005 <sup>(11)</sup>	04/11/2015	Common Stock	45,000		45,000	D	
Incentive Stock Option (right to buy)	\$6.81							04/01/2007 <sup>(12)</sup>	03/14/2017	Common Stock	22,806		22,806	D	
Incentive Stock Option (right to buy)	\$7.15							03/01/2006 <sup>(13)</sup>	03/01/2016	Common Stock	28,494		28,494	D	
Non-Qualified Stock Option (right to buy)	\$1.2							07/10/2002 <sup>(7)</sup>	07/10/2012	Common Stock	12,264		12,264	D	
Non-Qualified Stock Option (right to buy)	\$1.85							03/26/2009 <sup>(8)</sup>	02/26/2019	Common Stock	224,667		224,667	D	
Non-Qualified Stock Option (right to buy)	\$2							12/18/2003 <sup>(9)</sup>	12/18/2013	Common Stock	48,692		48,692	D	
Non-Qualified Stock Option (right to buy)	\$3.37							03/29/2008 <sup>(10)</sup>	02/28/2018	Common Stock	191,666		191,666	D	
Non-Qualified Stock Option (right to buy)	\$6.81							04/01/2007 <sup>(12)</sup>	03/14/2017	Common Stock	227,194		227,194	D	
Non-Qualified Stock Option (right to buy)	\$7.15							03/01/2006 <sup>(13)</sup>	03/01/2016	Common Stock	71,506		71,506	D	

**Explanation of Responses:**

- The exercise reported in this Form 4 was effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on February 13, 2009.
- The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on February 13, 2009.
- Shares held by The Bridget Blum 2003 Irrevocable Trust.
- Shares held by The Brittany Blum 2003 Irrevocable Trust.

5. This option is immediately exercisable upon grant and shall vest as to 781 shares on 04/01/03 and the balance of 36,719 divided into equal monthly installments thereafter such that the option shall be 100% vested on 03/01/07.
6. This option is immediately exercisable upon grant and shall vest as to 25,000 shares on 11/14/00 and the balance of 87,500 divided into equal monthly installments thereafter such that the option shall be 100% vested on 11/14/05.
7. When the ISO and NQ dated 07/10/02 are combined for a total grant of 150,000 shares, the option is immediately exercisable upon grant and shall vest as to 2,500 shares on 04/15/02 and the balance of 147,500 divided into equal monthly installments thereafter such that the option shall be 100% vested on 03/15/07.
8. When the ISO and NQ dated 02/26/2009 are combined for a total grant of 275,000 shares, the option shall vest and become exercisable as to 5,729 shares on 03/26/09 and the balance of 269,271 divided into equal monthly installments thereafter such that the option shall be 100% vested on 02/26/13.
9. When the ISO and NQ dated 12/18/03 are combined for a total grant of 141,925 shares, the option is immediately exercisable upon grant and shall vest as to 2,365 shares on 01/18/04 and the balance of 139,560 divided into equal monthly installments thereafter such that the option shall be 100% vested on 12/18/08.
10. When the ISO and NQ dated 02/29/2008 are combined for a total grant of 200,000 shares, the option shall vest and become exercisable as to 4,166 shares on 03/29/08 and the balance of 195,834 divided into equal monthly installments thereafter such that the option shall be 100% vested on 02/29/12.
11. This option shall vest and become exercisable as to 45,000 shares divided into equal monthly installments such that the option shall be 100% vested on 03/01/2009.
12. When the ISO and NQ dated 03/14/2007 are combined for a total grant of 250,000 shares, the option shall vest and become exercisable as to 5,208 shares on 04/01/07 and the balance of 244,792 divided into equal monthly installments thereafter such that the option shall be 100% vested on 03/01/11.
13. When the ISO and NQ dated 03/01/2006 are combined for a total grant of 100,000 shares, the option shall vest and become exercisable as to 100,000 shares divided into equal monthly installments such that the option shall be 100% vested on 03/01/2010.

Robert I. Blum

12/17/2009

\*\* 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.

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.**