

**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

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>01/05/2010</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	01/05/2010		M <sup>(1)</sup>		500	A	\$1.2	18,916	D	
Common Stock	01/05/2010		S <sup>(2)</sup>		500	D	\$3.11	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	01/05/2010		M			500	05/21/2003 <sup>(5)</sup>	05/21/2013	Common Stock	500	\$0	34,000	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 L. Blum

01/06/2010

\*\* 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.**