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**SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**SCHEDULE 13G**  
(Rule 13d-102)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO RULES 13d-1(b), (c) AND (d) AND AMENDMENTS THERETO FILED  
PURSUANT TO 13d-2(b)  
(Amendment No. 2)<sup>1</sup>**

**Cytokinetics, Inc.**

(Name of Issuer)

Common Stock  
(Title of Class of Securities)

23282W 10 0  
(CUSIP Number)

December 31, 2007  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

<sup>1</sup> 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 the disclosures provided in a prior cover page.

The information required in 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).

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CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Mayfield IX, a Delaware Limited Partnership	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-
	<b>6</b>	SHARED VOTING POWER  1,781,358
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-
	<b>8</b>	SHARED DISPOSITIVE POWER  1,781,358
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  1,781,358	
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  3.6%	
<b>12</b>	TYPE OF REPORTING PERSON  PN	

CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Mayfield IX Management, L.L.C.	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-
	<b>6</b>	SHARED VOTING POWER  1,875,113
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-
	<b>8</b>	SHARED DISPOSITIVE POWER  1,875,113
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  1,875,113	
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  3.8%	
<b>12</b>	TYPE OF REPORTING PERSON  OO	

CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Mayfield Associates Fund IV, a Delaware Limited Partnership	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-
	<b>6</b>	SHARED VOTING POWER  93,755
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-
	<b>8</b>	SHARED DISPOSITIVE POWER  93,755
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  93,755	
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0.2%	
<b>12</b>	TYPE OF REPORTING PERSON  PN	

CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Yogen K. Dalal		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-	
	<b>6</b>	SHARED VOTING POWER  2,031,713	
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-	
	<b>8</b>	SHARED DISPOSITIVE POWER  2,031,713	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,031,713		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  4.1%		
<b>12</b>	TYPE OF REPORTING PERSON  IN		

CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  F. Gibson Myers, Jr.		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-	
	<b>6</b>	SHARED VOTING POWER  2,031,713	
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-	
	<b>8</b>	SHARED DISPOSITIVE POWER  2,031,713	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,031,713		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  4.1%		
<b>12</b>	TYPE OF REPORTING PERSON  IN		

CUSIP No. Page  of 

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Kevin A. Fong		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-	
	<b>6</b>	SHARED VOTING POWER  2,031,713	
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-	
	<b>8</b>	SHARED DISPOSITIVE POWER  2,031,713	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,031,713		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  4.1%		
<b>12</b>	TYPE OF REPORTING PERSON  IN		

CUSIP No. Page  of 

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  William D. Unger		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-	
	<b>6</b>	SHARED VOTING POWER  2,031,713	
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-	
	<b>8</b>	SHARED DISPOSITIVE POWER  2,031,713	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,031,713		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  4.1%		
<b>12</b>	TYPE OF REPORTING PERSON  IN		



CUSIP No. Page  of 

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  Wendell G. Van Auken, III		
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  -0-	
	<b>6</b>	SHARED VOTING POWER  2,031,713	
	<b>7</b>	SOLE DISPOSITIVE POWER  -0-	
	<b>8</b>	SHARED DISPOSITIVE POWER  2,031,713	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,031,713		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  4.1%		
<b>12</b>	TYPE OF REPORTING PERSON  IN		

CUSIP No. Page  of .

<b>1</b>	NAME OF REPORTING PERSON I.R.S. Identification No. of Above Persons (Entities Only)  A. Grant Heidrich, III	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S.	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  54,040 (includes options to purchase 25,000 shares exercisable within 60 days of the date hereof.)
	<b>6</b>	SHARED VOTING POWER  1,875,113
	<b>7</b>	SOLE DISPOSITIVE POWER  54,040 (includes options to purchase 25,000 shares exercisable within 60 days of the date hereof.)
	<b>8</b>	SHARED DISPOSITIVE POWER  1,875,113
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  1,929,153 (includes options to purchase 25,000 shares exercisable within 60 days of the date hereof.)	
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  <input type="checkbox"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  3.9%	
<b>12</b>	TYPE OF REPORTING PERSON  IN	

**Item 1.**

**(a) Name of Issuer:**

Cytokinetics, Inc.

**(b) Address of Issuer's Principal Executive Offices:**

280 East Grand Avenue  
South San Francisco, CA 94080

**Item 2.**

**(a) Name of Persons Filing:**

Mayfield IX, a Delaware Limited Partnership  
Mayfield IX Management, L.L.C.  
Mayfield Associates Fund IV, a Delaware Limited Partnership  
Yogen K. Dalal  
F. Gibson Myers, Jr.  
Kevin A. Fong  
William D. Unger  
Wendell G. Van Auken, III  
A. Grant Heidrich, III

**(b) Address of Principal Business Office:**

c/o Mayfield Fund  
2800 Sand Hill Road, Suite 250  
Menlo Park, CA 94025

**(c) Citizenship:**

Mayfield IX, a Delaware Limited Partnership, and Mayfield Associates Fund IV, a Delaware Limited Partnership, are Delaware limited partnerships.

Mayfield IX Management, L.L.C. is a Delaware limited liability company.

The individuals listed in Item 2(a) are U.S. citizens.

**(d) Title of Class of Securities:**

Common Stock

**(e) CUSIP Number:**

23282W 10 0

**Item 3. If this statement is filed pursuant to Rule 13d-1(b), or 13d-2(b) or (c), check whether the person filing is a:**

Not applicable

**Item 4. Ownership.**

The information regarding ownership as set forth in Items 5-9 of Pages 2-10 hereto, is hereby incorporated by reference.

For a summary of total ownership by all Reporting Persons, see Exhibit 3 hereto.

**Item 5. Ownership of Five Percent or Less of a Class.**

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

**Item 6. Ownership of More than Five Percent on Behalf of Another Person.**

Not applicable.

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person.**

Not applicable.

**Item 8. Identification and Classification of Members of the Group.**

Not applicable.

**Item 9. Notice of Dissolution of Group.**

Not applicable.

**Item 10. Certification.**

Not applicable.

**SIGNATURES**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: February 14, 2008

MAYFIELD IX, A DELAWARE LIMITED PARTNERSHIP

By: Mayfield IX Management, L.L.C.  
Its General Partner

By: /s/ James T. Beck  
James T. Beck, Authorized Signatory

MAYFIELD IX MANAGEMENT, L.L.C.

By: /s/ James T. Beck  
James T. Beck, Authorized Signatory

MAYFIELD ASSOCIATES FUND IV,  
A DELAWARE LIMITED PARTNERSHIP

By: Mayfield IX Management, L.L.C.  
Its General Partner

By: /s/ James T. Beck  
James T. Beck, Authorized Signatory

YOGEN K. DALAL

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

F. GIBSON MYERS, JR.

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

KEVIN A. FONG

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

WILLIAM D. UNGER

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

WENDELL G. VAN AUKEN, III

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

A. GRANT HEIDRICH, III

By: /s/ James T. Beck  
James T. Beck, Attorney In Fact

**EXHIBIT INDEX**

- Exhibit 1 - "JOINT FILING AGREEMENT" is hereby incorporated by reference to Exhibit 1 to the Statement on Schedule 13G dated February 14, 2005.
- Exhibit 2 - "POWERS OF ATTORNEY" are hereby incorporated by reference to Exhibit 2 to the Statement on Schedule 13G dated February 14, 2005.
- Exhibit 3 - OWNERSHIP SUMMARY

**EXHIBIT 3**

<b>Name of Reporting Person</b>	<b>Number of Shares (Direct) (5)</b>	<b>Number of Shares (Indirect)</b>	<b>Percent of Class Beneficially Owned (1)</b>
Mayfield IX, a Delaware Limited Partnership	1,781,358(2)	-0-	3.6%
Mayfield IX Management, L.L.C.	-0-	1,875,113(2)(3)	3.8%
Mayfield Associates Fund IV, a Delaware Limited Partnership	93,755(3)	-0-	0.2%
Yogen K. Dalal	-0-	2,031,713(4)(6)	4.1%
F. Gibson Myers, Jr.	-0-	2,031,713(4)(6)	4.1%
Kevin A. Fong	-0-	2,031,713(4)(6)	4.1%
William D. Unger	-0-	2,031,713(4)(6)	4.1%
Wendell G. Van Auken, III	-0-	2,031,713(4)(6)	4.1%
A. Grant Heidrich, III	54,040(7)	1,875,113(4)	3.9%
Cell Trust	142,895		0.3%
Cell Trust II	13,705		0.0%
Total	2,085,753(7)		4.2%

- (1) The respective percentages set forth in this column were obtained by dividing the number of shares by the aggregate number of shares outstanding as reported in the Issuer's Form 10-Q for the period ended September 30, 2007. The percentages for Mr. Heidrich and the total are calculated by dividing the number of shares (including 25,000 shares issuable upon exercise of options exercisable within 60 days after the date hereof) by the number of outstanding shares plus 25,000.
- (2) Represents shares held directly by Mayfield IX, a Delaware Limited Partnership ("Mayfield IX") of which Mayfield IX Management, L.L.C. ("Mayfield IX Management") is the sole General Partner.
- (3) Represents shares held directly by Mayfield Associates Fund IV, a Delaware Limited Partnership ("Mayfield Associates IV") of which Mayfield IX Management is the sole General Partner.
- (4) Includes shares held directly by Mayfield IX and Mayfield Associates IV. The individual Reporting Persons listed are Managing Directors of Mayfield IX Management, which is the sole general partner of Mayfield IX and Mayfield Associates IV. The individual Reporting Persons may be deemed to have shared voting and dispositive power over the shares which are or may be deemed to be beneficially owned by Mayfield IX Management, Mayfield IX and Mayfield Associates IV, but disclaim such beneficial ownership.
- (5) Each individual Reporting Person expressly disclaims that he or she is the beneficial owner of any shares which are held by any other individual Reporting Person in his or her individual capacity.
- (6) Includes 142,895 shares held in Cell Trust and 13,705 shares held in Cell Trust II, each a trust for which the individual Reporting Persons, other than Mr. Heidrich, serve as trustees, and for each of which the individual Reporting Persons, other than Mr. Heidrich, or their family trusts are trustors and beneficiaries. The individual Reporting Persons, other than Mr. Heidrich, may be deemed to have shared voting and dispositive power over the shares held in Cell Trust and Cell Trust II, but disclaim such beneficial ownership.
- (7) Includes 29,040 shares held directly by the A. Grant and Jeanette Y. Heidrich Community Property Trust, of which Mr. Heidrich is a trustee and a beneficial owner. Also includes director options to purchase 25,000 shares held by Mr. Heidrich.