UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT

Under
The Securities Act of 1933

CYTOKINETICS, INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 94-3291317 (I.R.S. Employer Identification Number)

280 East Grand Avenue South San Francisco, CA 94080 (650) 624-3000

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

James Sabry, M.D., Ph.D. Chief Executive Officer Cytokinetics, Incorporated 280 East Grand Avenue South San Francisco, CA 94080 (650) 624-3000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Michael O'Donnell, Esq. Martin Waters, Esq. Gavin McCraley, Esq. Wilson Sonsini Goodrich & Rosati Professional Corporation 650 Page Mill Road Palo Alto, CA 94304 (650) 493-9300

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. \square

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

333-125786

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. \Box

If this Form is post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413 (b) under the Securities Act, check the following box.

Title of Each Class of	Amount to be	Proposed Maximum Offering Price	Proposed Maximum Offering	Amount of Registration
Securities to be Registered	Registered	per Unit	Price(1)	Fee
Common Stock, \$0.001 par value per share(2)		_		_
Preferred Stock, \$0.001 par value per share(2)	_	_		_
Warrants(3)	_	_	_	_
Total(4) \$	13,400,000 (4)	100%(5)	\$13,400,000	\$1,434

- (1) These figures are estimates made solely for the purpose of calculating the registration fee pursuant to Rule 457 under the Securities Act of 1933, as amended.
- (2) In addition to any securities that may be registered hereunder, we are also registering an indeterminate number of shares of common stock or preferred stock as may be issued upon conversion or exchange of the securities issued directly hereunder. No separate consideration will be received for any shares of common stock or preferred stock so issued upon conversion or exchange.
- (3) Includes warrants to purchase common stock and warrants to purchase preferred stock.

(4) The securities registered hereunder may be sold separately, or as units with other securities registered hereby. The proposed maximum offering price per unit will be determined by us in connection with the issuance of the securities. The Registrant previously registered shares of its common stock having a proposed maximum aggregate offering price of \$100,000,000 pursuant to a Registration Statement on Form S-3 (File No. 333-125786), which was declared effective on July 14, 2005, and for which a fee of \$11,770.00 was paid. Of these shares, the Registrant sold 5,000,000 shares of its common stock at an aggregate offering price of approximately \$33,000,000.00 pursuant to a Prospectus Supplement dated January 20, 2006, filed pursuant to Rule 424(b). In no event will the aggregate offering price of all securities issued from time to time pursuant to this Registration Statement exceed \$13,400,000.

(3)	we will determine the proposed maximum offering price per unit in connection with the issuance of the securities.

TABLE OF CONTENTS

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS
SIGNATURES
EXHIBIT INDEX
EXHIBIT 5.1
EXHIBIT 23.1

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This registration statement is being filed with respect to the registration of additional shares of common stock, par value \$0.001 per share, of the registrant pursuant to Rule 462(b) under the Securities Act of 1933, as amended.

The registrant hereby incorporates by reference into this registration statement in its entirety the registration statement on Form S-3, as amended (File No. 333-125786), filed with the Securities and Exchange Commission, and declared effective on or about July 14, 2005 (the "Prior Registration Statement"), by the Securities and Exchange Commission, including each of the documents filed by the registrant with the Securities and Exchange Commission and incorporated or deemed to be incorporated by reference therein.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 17. Undertakings.

- (a) The undersigned registrant hereby undertakes:
 - (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act.
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) If the registrant is relying on Rule 430B:
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the Registration Statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such

Table of Contents

- effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or
- (ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.
- (d) The undersigned registrant hereby undertakes that:

Table of Contents

- (1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (2) For purposes of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such at that time shall be deemed to be the initial bona fide offering thereof.

Attorney-in-Fact

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3, and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, state of California on October 30, 2006.

CYTOKINETICS, INCORPORATED

By: /s/ James H. Sabry, M.D., Ph.D.

James H. Sabry, M.D., Ph.D.
Chief Executive Officer

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
/s/ James H. Sabry, M.D., Ph.D.	Chief Executive Officer and Director	October 30, 2006
James H. Sabry, M.D., Ph.D.	(Principal Executive Officer)	
/s/ Sharon Surrey-Barbari	Chief Financial Officer	October 30, 2006
Sharon Surrey-Barbari	(Principal Financial and Accounting Officer)	
/s/ A. Grant Heidrich*	Director	October 30, 2006
A. Grant Heidrich /s/ James A. Spudich, Ph.D.*	Director	October 30, 2006
James A. Spudich, Ph.D. /s/ Charles Homey, M.D.*	Director	October 30, 2006
Charles Homey, M.D. /s/ Stephen Dow*	Director	October 30, 2006
Stephen Dow		
•	Director	
Michael Schmertzler		
/s/ Mark McDade*	Director	October 30, 2006
Mark McDade		
*By: /s/ James H. Sabry, M.D., Ph.D. James H. Sabry, M.D., Ph.D.		

The Power of Attorney granted by each director was filed as an exhibit to the Prior Registration Statement.

EXHIBIT INDEX

Exhibit Number	Description of Document
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
23.1	Consent of PricewaterhouseCoopers, LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1).
24.1*	Power of Attorney of certain directors and officers of Cytokinetics, Incorporated (included on the signature page of the Prior Registration
	Statement).

^{*} Incorporated by reference from our registration statement on Form S-3, registration number 333-125786, declared effective by the Securities and Exchange Commission on July 14, 2005.

October 30, 2006

Cytokinetics, Incorporated 280 East Grand Avenue South San Francisco, CA 94080

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

At your request, we have examined the Registration Statement on Form S-3 (the "Registration Statement"), filed by Cytokinetics, Incorporated, a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") in connection with the registration pursuant to the Securities Act of 1933, as amended (the "Act"), of the Securities (as defined below).

The Registration Statement relates to the proposed issuance and sale, from time to time, pursuant to Rule 415 under the Act, as set forth in the Registration Statement, the prospectus contained therein (the "Prospectus") and the supplements to the prospectus referred to therein (each a "Prospectus Supplement"), of up to an aggregate offering price of \$13,400,000, or the equivalent thereof, of shares of the Company's common stock, \$0.001 par value per share (the "Common Stock"), shares of the Company's preferred stock, \$0.001 par value per share (the "Preferred Stock"), and warrants (the "Warrants") to purchase any of the securities described above (the Common Stock, the Preferred Stock and the Warrants are collectively referred to herein as the "Securities").

The Securities are to be sold from time to time as set forth in the Registration Statement, the Prospectus contained therein and the Prospectus Supplements. The Securities are to be sold pursuant to a purchase, underwriting or similar agreement in substantially the form to be filed under a Current Report on Form 8-K.

We have examined instruments, documents, certificates and records that we have deemed relevant and necessary for the basis of our opinions hereinafter expressed. In such examination, we have assumed: (i) the authenticity of original documents and the genuineness of all signatures; (ii) the conformity to the originals of all documents submitted to us as copies; (iii) the truth, accuracy and completeness of the information, representations and warranties contained in the records, documents, instruments and certificates we have reviewed; (iv) that the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective under the Act; (v) that a Prospectus Supplement will have been filed with the Commission describing the Securities offered thereby; (vi) that all Securities will be issued and sold in compliance with applicable U.S. federal and state securities laws and in the manner stated in the Registration Statement and the applicable prospectus supplement; (vii) that a definitive

Cytokinetics, Incorporated October 30, 2006 Page 2

purchase, underwriting or similar agreement with respect to any Securities offered will have been duly authorized and validly executed and delivered by the Company and the other parties thereto; (viii) that any Securities issuable upon conversion, exchange, redemption or exercise of any Securities being offered will be duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange, redemption or exercise; and (ix) with respect to shares of Common Stock or Preferred Stock offered, that there will be sufficient shares of Common Stock or Preferred Stock authorized under the Company's organizational documents and not otherwise reserved for issuance.

Based on such examination, we are of the opinion that:

- 1. With respect to shares of Common Stock, when both: (a) the Board of Directors of the Company or a duly constituted and acting committee thereof (such Board of Directors or committee being hereinafter referred to as the "Board") has taken all necessary corporate action to approve the issuance of and the terms of the offering of the shares of Common Stock and related matters; and (b) certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Common Stock, upon payment of the consideration therefor (not less than the par value of the Common Stock) provided for therein or (ii) upon conversion or exercise of any other Security, in accordance with the terms of such Security or the instrument governing such Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (not less than the par value of the Common Stock), then the shares of Common Stock will be validly issued, fully paid and nonassessable;
- 2. With respect to any particular series of shares of Preferred Stock, when both: (a) the Board has taken all necessary corporate action to approve the issuance and terms of the shares of Preferred Stock, the terms of the offering thereof, and related matters, including the adoption of a certificate of designation relating to such Preferred Stock conforming to the Delaware General Corporation Law (a "Certificate") and the filing of the Certificate with the Secretary of State of the State of Delaware; and (b) certificates representing the shares of Preferred Stock have been duly executed, countersigned, registered and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Preferred Stock, upon payment of the consideration therefor (not less than the par value of the Preferred Stock) provided for therein or (ii) upon conversion or exercise of such Security or the instrument governing such Security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (not less than the par value of the Preferred Stock), then the shares of Preferred Stock will be validly issued, fully paid and nonassessable; and

Cytokinetics, Incorporated October 30, 2006 Page 3

3. With respect to the Warrants, when both: (a) the Board has taken all necessary corporate action to approve the issuance of and the terms of the Warrants and related matters; and (b) the Warrants have been duly executed and delivered against payment therefor, pursuant to the applicable definitive purchase, underwriting, warrant or similar agreement duly authorized, executed and delivered by the Company and a warrant agent, and the certificates for the Warrants have been duly executed and delivered by the Company and such warrant agent, then the Warrants will be validly issued and will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with its terms.

Our opinion that any document is legal, valid and binding is qualified as to:

- (a) limitations imposed by bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium or other laws relating to or affecting the rights of creditors generally;
 - (b) rights to indemnification and contribution, which may be limited by applicable law or equitable principles; and
- (c) general principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing, and the possible unavailability of specific performance or injunctive relief and limitation of rights of acceleration, regardless of whether such enforceability is considered in a proceeding in equity or at law.

Attorneys at our Firm are admitted to the practice of law in the State California, and we express no opinion as to the laws of any other jurisdiction, other than the Federal laws of the United States of America and the General Corporation Law of the State of Delaware.

[Remainder of this page intentionally left blank].

Cytokinetics, Incorporated October 30, 2006 Page 4

We hereby consent to the filing of this opinion as an exhibit to the above-referenced Registration Statement and to the use of our name wherever it appears in the Registration Statement, the Prospectus, any Prospectus Supplement, and in any amendment or supplement thereto. In giving such consent, we do not believe that we are "experts" within the meaning of such term as used in the Act or the rules and regulations of the Commission issued thereunder with respect to any part of the Registration Statement, including this opinion as an exhibit or otherwise.

Sincerely,

/s/ WILSON SONSINI GOODRICH & ROSATI WILSON SONSINI GOODRICH & ROSATI Professional Corporation

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 8, 2006, relating to the financial statements, management's assessment of the effectiveness of internal control over financial reporting, which appears in Cytokinetics Incorporated's Annual Report on Form 10-K for the year ended December 31, 2005. We also consent to the reference to us under the headings "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP San Jose

October 30, 2006