As filed with the Securities and Exchange Commission on September 16, 2009

Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

VIVUS, Inc.

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

94-3136179 (I.R.S. Employer Identification Number)

1172 Castro Street Mountain View, CA 94040 (650) 934-5200 (Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

LELAND F. WILSON President and Chief Executive Officer and Director VIVUS, Inc. 1172 Castro Street Mountain View, CA 94040 (650) 934-5200

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

Copies to:

JOHN SLEBIR General Counsel VIVUS, Inc. 1172 Castro Street Mountain View, CA 94040 (650) 934-5200 MARIO M. ROSATI MARK REINSTRA JON LAYMAN Wilson Sonsini Goodrich & Rosati 650 Page Mill Road Palo Alto, CA 94034 (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. o

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. o

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. o

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.

If this Form is a 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. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. o

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per unit	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, \$0.001 par value	(1)	(1)	(1)	\$0(2)

(1) Omitted pursuant to Form S-3 General Instruction II.E. Such indeterminate number of shares of common stock is being registered as may from time to time be sold at indeterminate prices.

(2) The registrant is deferring payment of all registration fees in accordance with Rules 456(b) and 457(r).

VIVUS, Inc.

Common Stock

From time to time, we may offer and sell shares of common stock in amounts, at prices and on terms described in one or more supplements to this prospectus.

This prospectus describes some of the general terms that may apply to an offering of our common stock. The specific terms and any other information relating to a specific offering will be set forth in a post-effective amendment to the registration statement of which this prospectus is a part or in a supplement to this prospectus, or may be set forth in one or more documents incorporated by reference into this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with a specific offering. You should read this prospectus, the applicable prospectus supplement and any related free writing prospectuses that we have authorized for use in connection with a specific offering, as well as any documents incorporated by reference in this prospectus and the applicable prospectus supplement, carefully before you invest.

We may offer and sell shares of common stock to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. The supplements to this prospectus will provide the specific terms of the plan of distribution. The net proceeds we expect to receive from sales by us will be set forth in the applicable prospectus supplement.

Our common stock is listed on The NASDAQ Global Market under the trading symbol "VVUS." On September 15, 2009, the last reported sale price of our common stock was \$11.23 per share.

Investing in our common stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and in any related free writing prospectuses that we have authorized for use in connection with a specific offering, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is September 16, 2009

Table of contents

	Page
About this prospectus	1
Risk factors	2
Forward-looking statements	2
Use of proceeds	3
Description of common stock	4
Validity of common stock	5
Experts	5
Where you can find more information	6

About this prospectus

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using the "shelf" registration process. By using a shelf registration statement, we may offer and sell from time to time in one or more offerings the common stock described in this prospectus. No limit exists on the aggregate number of shares of common stock we may sell pursuant to the registration statement.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses that we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different information. This document may only be used where it is legal to sell these securities. You should not assume that the information contained in this prospectus, in any applicable prospectus supplement or in any related free writing prospectus, is accurate as of any date other than its date regardless of the time of delivery of the prospectus, prospectus supplement or related free writing prospectus, or any sale of the common stock. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you should rely on the information in the prospectus supplement.

This prospectus supplement contains references to a number of our trademarks that are registered or are subject to pending applications or to which we have common law rights. These include, but are not limited to, the following: VIVUS®, Qnexa[™], Luramist[™], Evamist[™], MDTS® and MUSE®. Each trademark, trade name or service mark of any other company appearing in this prospectus supplement or the accompany prospectus belongs to its holder.

We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus that we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading "Where You Can Find More Information," before deciding whether to invest in any of the common stock being offered.

References in this prospectus to "VIVUS," "we," "us" and "our" refer to VIVUS, Inc., a Delaware corporation. Our principal executive offices are located at 1172 Castro Street, Mountain View, California and our telephone number is (650) 934-5200. Our web site address is www.vivus.com. The information contained in, or that can be accessed through, our web site is not part of, and is not incorporated by reference in, this prospectus.

Risk factors

Investing in our common stock involves a high degree of risk. You should consider carefully the risk factors identified in any applicable prospectus supplement and in any related free writing prospectuses that we have authorized for use in connection with a specific offering, as well as in our most recent annual and quarterly filings with the SEC, in addition to the other information contained in this prospectus, any applicable prospectus supplement, the documents incorporated by reference herein or therein, and in any free writing prospectuses that we have authorized for use in connection with a specific offering, before deciding whether to purchase any of our common stock. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock, and you may lose all or part of your investment.

Forward-looking statements

This prospectus and the documents incorporated by reference contain forward-looking statements that are based on our management's beliefs and assumptions and on information currently available to our management. Discussions containing these forward-looking statements may be found, among other places, in "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" incorporated by reference from our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Forward-looking statements include, but are not limited to, statements about:

- the development of our product candidates;
- the success and timing of our preclinical studies and clinical trials, and the commencement of future clinical trials;
- the submission and timing of applications for regulatory approvals;
- the establishment and development of collaborative partnerships;
- our ability to identify new potential product candidates;
- our ability to demonstrate through clinical testing the safety and effectiveness of our clinical investigational drug candidates;
- our ability to build our commercial infrastructure;
- our ability to achieve commercial acceptance of our product candidates if approved for commercial sale;
- our ability to scale-up our manufacturing capabilities and facilities;
- the use of proceeds from any offering;
- our projected financial and operating results;
- our projected capital expenditures; and
- our liquidity.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential" and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other factors in greater detail under the heading "Risk Factors" contained in the applicable prospectus supplement, in any related free writing prospectuses that we have authorized for use in connection with a specific offering, and in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectuses that we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading "Where You Can Find More Information," completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify all of our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons that actual results could differ materially from those antici

Use of proceeds

Except as described in any prospectus supplement or in any related free writing prospectus that we have authorized for use in connection with a specific offering, we anticipate using the net proceeds to us from the sale of our common stock to fund our research and development efforts, including manufacturing activities and clinical trials for our proprietary product candidates and investment in select pre-commercial and commercial activities, and for general corporate purposes, including working capital. Although we currently have no commitments or agreements to acquire or invest in complementary businesses, technologies, product candidates or other intellectual property, our management will have broad discretion as to the allocation of the net proceeds received in any offering and may use these proceeds for that purpose in the future. Pending use of the net proceeds, we intend to invest the net proceeds in interest-bearing, investment-grade securities.

Description of common stock

Our certificate of incorporation authorizes us to issue up to 200,000,000 shares of common stock, \$0.001 par value. As of September 11, 2009, there were 70,124,078 shares of common stock issued and outstanding. We may issue shares of our common stock from time to time in one or more offerings. We will set forth in the applicable prospectus supplement a description of the terms of the offering of common stock, including the offering price, the net proceeds to us, and other offering material relating to such offering.

The holders of shares of our common stock are entitled to one vote per share on all matters to be voted on by stockholders. Common stock holders are entitled to receive dividends declared by the board of directors out of funds legally available for the payment of dividends, subject to the rights, if any, of preferred stock holders. We have never paid a dividend and we do not anticipate paying a dividend in the foreseeable future. Upon any liquidation, dissolution or winding up of our business, the holders of common stock are entitled to share equally in all assets available for distribution after payment of all liabilities and provision for liquidation preference of shares of preferred stock then outstanding. The holders of common stock have no preemptive rights and no rights to convert their common stock into any other securities. There are also no redemption or sinking fund provisions applicable to our common stock. All outstanding shares of common stock are fully paid and nonassessable.

Anti-takeover effects of Delaware law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law, which, subject to certain exceptions, prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the time that such stockholder became an interested stockholder, unless:

- prior to such time, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder,
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned:
 - by persons who are directors and also officers, and
 - by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer, or
- at or subsequent to such time, the business combination is approved by the board of directors and is authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66²/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines "business combination" to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder, or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an "interested stockholder" as any entity or person who or which beneficially owns (or within three years did own) 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by such entity or person.

The existence of this provision would be expected to have an anti-takeover effect with respect to transactions not approved in advance by our board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare Investor Services, 2 N. LaSalle Street, Chicago, Illinois 60602.

NASDAQ Global Market listing

Our common stock is listed on The NASDAQ Global Market under the symbol "VVUS."

Validity of common stock

The validity of the shares of common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California, and for any underwriters, dealers or agents by counsel named in the applicable prospectus supplement. John Slebir, an attorney at Wilson Sonsini Goodrich & Rosati, Professional Corporation, also serves as our General Counsel.

Experts

The financial statements and management's assessment of the effectiveness of our internal control over financial reporting (which is included in Management's Report on Internal Control Over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2008 have been so incorporated in reliance on the

report of Odenberg, Ullakko, Muranishi & Co. LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

Where you can find more information

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. This prospectus is part of a registration statement on Form S-3 filed by us with the SEC under the Securities Act of 1933, as amended. As permitted by the SEC, this prospectus does not contain all the information in the registration statement filed with the SEC. For a more complete understanding of an offering of our common stock, you should refer to the complete registration statement on Form S-3 that may be obtained from the location described below. You may read and copy the registration statement, as well as our reports, proxy statements and other information, at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including VIVUS, Inc. The SEC's Internet site can be found at http://www.sec.gov.

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus and any accompanying prospectus supplement. We incorporate by reference the following information or documents that we have filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2008 filed with the SEC on March 11, 2009;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2008 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 30, 2009;
- our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2009 and June 30, 2009 filed with the SEC on May 11, 2009 and July 31, 2009, respectively;
- our Current Reports on Form 8-K filed with the SEC on January 7, 2009, January 13, 2009, January 29, 2009, February 3, 2009, February 11, 2009, March 9, 2009, March 11, 2009, March 19, 2009, April 9, 2009, May 11, 2009, July 15, 2009, August 11, 2009, August 17, 2009, September 3, 2009, September 8, 2009, September 9, 2009 and September 14, 2009 (other than the portions of these reports furnished but not filed pursuant to SEC rules and the exhibits filed on such form that relate to such portions); and
- the description of our common stock contained in our Registration Statement on Form 8-A filed with the SEC on April 7, 1994, including any amendments or reports filed for the purpose of updating such description.

Any information in any of the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus or in a later filed document that is incorporated or deemed to be incorporated herein by reference modifies or replaces such information.

We also incorporate by reference any future filings (other than Current Reports on Form 8-K furnished under Item 2.02 or Item 7.01 thereof and exhibits filed on such form that are related to such items) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will provide to each person who so requests, including any beneficial owner to whom a prospectus is delivered, a copy of any and all of the documents incorporated by reference (including exhibits to these documents). You may request a copy of these filings, at no cost, by telephoning (650) 934-5200 or writing us at:

Office of the Chief Financial Officer VIVUS, Inc. 1172 Castro Street Mountain View, CA 94040

Part II

Information not required in the prospectus

Item 14. Other expenses of issuance and distribution

The following table sets forth the estimated costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the offering of the securities being registered. All the amounts shown are estimates.

	Amount
SEC registration fee	\$ *
NASDAQ Global Market listing fee	65,000**
Accounting fees and expenses	55,000**
Legal fees and expenses	100,000**
Transfer agent fees and expenses	5,000**
Printing and miscellaneous expenses	75,000**
Total	\$300,000**

* In accordance with Rules 456(b) and 457(r), the registrant is deferring payment of the registration fee for the securities offered by the prospectus that is a part of this registration statement.

** As an indeterminate amount of securities is covered by this registration statement, the expenses in connection with the issuance and distribution of the securities are not currently determinable. The amounts shown are estimates of expenses payable by us in connection with the filing of this registration statement and one offering of securities hereunder, but do not limit the amount of securities that may be offered.

Item 15. Indemnification of directors and officers

Section 145 of the Delaware General Corporation Law ("Delaware Law") authorizes a court to award or a corporation's board of directors to grant indemnification to directors and officers in terms that are sufficiently broad to permit indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933, as amended. Our bylaws provide for the mandatory indemnification of our directors and officers to the maximum extent permitted by Delaware law. Our bylaws also provide (i) that we may modify the scope of indemnification by individual contracts with our directors and officers, and (ii) that we shall not be required to indemnify any director or officer unless the indemnification is required by law, the proceeding in which indemnification is sought was authorized in advance by our board of directors, the indemnification is provided by us, in our sole discretion pursuant to powers vested in us under the General Corporation Law of Delaware or the indemnification is required by individual contract. In addition, our bylaws give us the power to indemnify our employees and agents to the maximum extent permitted by Delaware law.

Our amended and restated certificate of incorporation provides for the indemnification of directors to the fullest extent permitted under Delaware law.

We refer you to the form of underwriting agreement to be filed as an exhibit to this Registration Statement as incorporated by reference as an exhibit to a current Report on Form 8-K for certain provisions regarding indemnification of our officers and directors by the underwriters.

II-1

We have entered into indemnification agreements with our directors and executive officers, in addition to the indemnification provided for in our bylaws, and we intend to enter into indemnification agreements with any new directors and executive officers in the future.

Item 16. Exhibits

Exhibit	
Number	Description of Document
1.1*	Form of Underwriting Agreement.
2.1(1)†	Asset Purchase Agreement, by and among the Registrant and K-V Pharmaceutical Company, dated as of March 30, 2007.
4.1(2)	Specimen Common Stock Certificate.
4.2(3)	Preferred Stock Rights Agreement dated as of March 27, 2007 between the Registrant and Computershare Investor Services, LLC.
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
23.1	Consent of Odenberg, Ullakko, Muranishi & Co. LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Profession Corporation (included in Exhibit 5.1).
24.1	Power of Attorney of certain directors and officers of the Registrant (included in the signature page hereto).

* To be filed by amendment or as an exhibit to a current report on Form 8-K of the registrant and incorporated herein by reference, if applicable.

† Confidential portions of this exhibit have been redacted and filed separately with the Commission pursuant to a confidential treatment request in accordance with Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

(1) Incorporated by reference to the same numbered exhibit filed with the Registrant's Form 8-K (File No. 001-33389) filed with the Commission on May 21, 2007.

(2) Incorporated by reference to the same numbered exhibit filed with the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996, as amended.

(3) Incorporated by reference to Exhibit 4.1 filed with the Registrant's Registration Statement on Form 8-K (File No. 001-33389) filed with the Commission on March 28, 2007.

Item 17. Undertakings

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 of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent posteffective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the 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

II-2

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% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(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 (1)(i), (1)(ii) and (1)(iii) 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 the 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:

(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 of 1933 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 or made in a document 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 effective date, supersede or modify any statement that was made in the registration statement or made in any such document immediately prior to such effective date.

II-3

(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.

(6) 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 section 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 the 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.

(7) 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

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 Mountain View, State of California, on September 16, 2009.

VIVUS, Inc.

By: /s/ LELAND F. WILSON

Leland F. Wilson President and Chief Executive Officer

Power of attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Leland F. Wilson and Timothy E. Morris and each of them individually, as his true and lawful attorneys-in-fact and agents with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities to sign the Registration Statement filed herewith and any or all amendments to said Registration Statement (including post-effective amendments and registration statements filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and otherwise), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission granting unto said attorneys-in-fact and agents the full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the foregoing, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his or her substitute, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

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/ LELAND F. WILSON	President, Chief Executive Officer and Director (Principal Executive Officer)	September 16, 2009
Leland F. Wilson		
/s/ MARK B. LOGAN	Chairman of the Board and Director	September 16, 2009
Mark B. Logan		
	11-5	

Signature	Title	Date
/s/ TIMOTHY E. MORRIS	Vice President of Finance and Chief Financial Officer (Principal Financial Officer)	September 16, 2009
Timothy E. Morris		
/s/ LEE B. PERRY	Vice President and Chief Accounting Officer (Principal Accounting Officer)	September 16, 2009
Lee B. Perry	(Fincipal Accounting Officer)	
/s/ VIRGIL A. PLACE	Chief Scientific Officer and Director	September 16, 2009
Virgil A. Place		
/s/ GRAHAM STRACHAN	Director	September 16, 2009
Graham Strachan		
/s/ CHARLES J. CASAMENTO	Director	September 16, 2009
Charles J. Casamento		
/s/ LINDA M. DAIRIKI SHORTLIFFE, M.D.	Director	September 16, 2009
Linda M. Dairiki Shortliffe, M.D.		
	II-6	

Exhibit Index

Exhibit	
Number	Description of Document
1.1*	Form of Underwriting Agreement.
2.1(1)†	Asset Purchase Agreement, by and among the Registrant and K-V Pharmaceutical Company, dated as of March 30, 2007.
4.1(2)	Specimen Common Stock Certificate.
4.2(3)	Preferred Stock Rights Agreement dated as of March 27, 2007 between the Registrant and Computershare Investor Services, LLC.
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
23.1	Consent of Odenberg, Ullakko, Muranishi & Co. LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Profession Corporation (included in Exhibit 5.1).
24.1	Power of Attorney of certain directors and officers of the Registrant (included in the signature page hereto).

* To be filed by amendment or as an exhibit to a current report on Form 8-K of the registrant and incorporated herein by reference, if applicable.

Confidential portions of this exhibit have been redacted and filed separately with the Commission pursuant to a confidential treatment request in accordance with Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

(1) Incorporated by reference to the same numbered exhibit filed with the Registrant's Form 8-K (File No. 001-33389) filed with the Commission on May 21, 2007.

(2) Incorporated by reference to the same numbered exhibit filed with the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996, as amended.

(3) Incorporated by reference to Exhibit 4.1 filed with the Registrant's Registration Statement on Form 8-K (File No. 001-33389) filed with the Commission on March 28, 2007.

QuickLinks

Table of contentsAbout this prospectusRisk factorsForward-looking statementsUse of proceedsDescription of common stockValidity of common stockExpertsWhere you can find more informationPart II Information not required in the prospectus

Item 14. Other expenses of issuance and distribution Item 15. Indemnification of directors and officers Item 16. Exhibits Item 17. Undertakings

Signatures Power of attorney Exhibit Index September 16, 2009

VIVUS, Inc. 1172 Castro Street Mountain View, CA 94040

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to VIVUS, Inc., a Delaware corporation (the "*Company*"), in connection with the Registration Statement on Form S-3 (the "*Registration Statement*") under the Securities Act of 1933, as amended (the "*Securities Act*"), relating to the registration of an indeterminate number of shares (the "*Shares*") of the Company's common stock, par value \$0.001 per share (the "*Common Stock*"). The Shares are being registered for offering and sale from time to time pursuant to Rule 415 of the General Rules and Regulations promulgated under the Securities Act (the "*Securities Act Rules*").

In connection with this opinion, we have examined and relied upon the originals, or copies certified to our satisfaction, of such records, documents, certificates, opinions, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. As to certain factual matters, we have relied upon certificates of the officers of the Company and have not sought to independently verify such matters.

In rendering this opinion, we have assumed the genuineness and authenticity of all signatures on original documents; the authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents where authorization, execution and delivery are prerequisites to the effectiveness of such documents. We have also assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock is authorized and reserved or available for issuance and that the consideration for the issuance and sale of such shares of Common Stock is not less than the par value of the Common Stock, and that, prior to any offering and sale of the Shares, the Company's board of directors (the "**Board**"), including any appropriate committee appointed thereby, will duly authorize the price at which the Shares are to be issued and sold.

Our opinion herein is expressed solely with respect to the federal laws of the United States and the Delaware General Corporation Law. We express no opinion as to whether the laws of any jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing and in reliance thereon, and subject to the qualifications herein stated, we are of the opinion that, with respect to any offering of the Shares, provided that (i) the Registration Statement, as finally amended, has become effective; (ii) an appropriate prospectus supplement with respect to the Shares has been prepared, delivered and filed in compliance with the Securities Act and the applicable Securities Act Rules; (iii) the Board, including any appropriate committee appointed thereby, and appropriate officers of the Company have taken all necessary corporate action to approve the issuance of the Shares and related matters; and (iv) the issuance and sale of the Shares do not violate the operative

certificate of incorporation or bylaws of the Company, then the Shares, when issued and sold in accordance with any duly authorized, executed and delivered purchase, underwriting or similar agreement, will be duly authorized, validly issued, fully paid and nonassessable.

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 and any applicable 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 in the Act or the rules and regulations of the Securities and Exchange Commission issued thereunder with respect to any part of the Registration Statement, including this opinion as an exhibit or otherwise.

Very truly yours,

/s/ WILSON SONSINI GOODRICH & ROSATI

WILSON SONSINI GOODRICH & ROSATI Professional Corporation

QuickLinks

Exhibit 5.1

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 reports dated March 9, 2009 relating to the consolidated financial statements and financial statement schedule of VIVUS, Inc. and the effectiveness of internal control over financial reporting of VIVUS, Inc., included in its Annual Report on Form 10-K for the year ended December 31, 2008. We also consent to the reference to us under the heading "Experts" in this Registration Statement.

ODENBERG, ULLAKKO, MURANISHI & CO. LLP San Francisco, California September 16, 2009

QuickLinks

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM