PROSPECTUS

4,907,975 Shares

VERACYTE, INC.

Common Stock

The selling stockholders identified in this prospectus may sell up to an aggregate of 4,907,975 shares of our common stock.

Our registration of the shares of our common stock covered by this prospectus does not mean that the selling stockholders will offer or sell any of the shares of our common stock. The selling stockholders may sell the shares of our common stock covered by this prospectus in a number of different ways and at varying prices. For additional information on the possible methods of sale that may be used by the selling stockholders, you should refer to the information under the heading "Plan of Distribution" on page 4 of this prospectus. We will not receive any of the proceeds from the sale of the shares of our common stock by the selling stockholders.

Our common stock is listed on The NASDAQ Global Market under the symbol "VCYT." On March 22, 2016, the last reported sale price of our common stock on The NASDAQ Global Market was \$4.58 per share.

Investing in our securities involves risks. See the section entitled "Risk Factors" beginning on page 2 and in the documents we incorporate by reference in this prospectus before making your investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is March 22, 2016

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We have not authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus, any applicable prospectus supplement or any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information in this prospectus and any prospectus supplement, or incorporated by reference, is accurate only as of the dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

Unless the context otherwise requires, references in this prospectus to "Veracyte," the "company," "we," "us" and "our" refer to Veracyte, Inc. and its subsidiaries.

Veracyte, Afirma, Percepta, the Veracyte logo and the Afirma logo are our trademarks or registered trademarks. This prospectus and the documents incorporated by reference into this prospectus may also contain trademarks and trade names that are the property of their respective owners. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply relationships with, or endorsements or sponsorship of us by, these other companies.

When we refer to the selling stockholders in this prospectus, we are referring to the stockholders identified in the table under the heading "Selling Stockholders" herein as well as their donees, pledgees, transferees or other successors-in-interest that received shares of our common stock after the date of this prospectus from the selling stockholders pursuant to a gift, a pledge, a partnership distribution or other transfer (other than a public sale).

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RISK FACTORS

Investing in our common stock involves risk. Prior to making a decision about investing in our common stock, you should carefully consider all of the information appearing or incorporated by reference in this prospectus, including the risk factors incorporated by reference to our most recent Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. The occurrence of any of these risks or additional risks and uncertainties that are not currently known to us or that we currently consider immaterial may cause you to lose all or part of your investment in our common stock.

VERACYTE, INC.

We are a molecular diagnostics company that uses novel genomics to resolve the critical healthcare problem of diagnostic ambiguity. We believe that diagnostic ambiguity results in hundreds of thousands of patients undergoing unnecessary, invasive procedures and wasting billions of healthcare dollars each year. We target diseases in which large numbers of patients undergo invasive and costly diagnostic procedures that could be avoided with a more accurate diagnosis from a cytology sample taken preoperatively. By improving diagnosis preoperatively, we help patients avoid such unnecessary invasive procedures and surgeries while reducing healthcare costs. Our first commercial solution, the Afirma Thyroid FNA Analysis, was launched in 2011 for use in thyroid cancer diagnosis, and we launched the Percepta Bronchial Genomic Classifier, designed to improve the preoperative diagnosis of lung cancer, in April 2015. We plan to expand our footprint in pulmonology with the launch of a product designed to preoperatively identify idiopathic pulmonary fibrosis, among patients presenting with a suspected interstitial lung disease, in the fourth quarter of 2016.

We were incorporated in Delaware as Calderome, Inc. in August 2006. Calderome operated as an incubator until early 2008. We changed our name to Veracyte, Inc. in March 2008. Our principal executive offices are located at 6000 Shoreline Court, Suite 300, South San Francisco, California 94080 and our telephone number is (650) 243-6300. Our website address is www.veracyte.com. We do not incorporate the information on, or accessible through, our website into this prospectus, and you should not consider any information on, or accessible through, our website as part of this prospectus.

FORWARD-LOOKING STATEMENTS

When used in this prospectus, the words "expects," "believes," "anticipates," "estimates," "may," "could," "intends," and similar expressions are intended to identify forward-looking statements. These statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those projected or otherwise implied by the forward-looking statements. These forward-looking statements speak only as of the date of this prospectus. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We will discuss many of these risks and uncertainties in greater detail in any prospectus supplement under the heading "Risk Factors." Additional cautionary statements or discussions of risks and uncertainties that could affect our results or the achievement of the expectations described in forward-looking statements may also be contained in the documents we incorporate by reference into this prospectus.

These forward-looking statements speak only as of the date of this prospectus. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based. You should, however, review additional disclosures we make in our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K filed with the SEC.

USE OF PROCEEDS

We will not receive any proceeds from the sale of the shares by the selling stockholders. All proceeds from the sale of the shares will be for the accounts of the selling stockholders. See "Selling Stockholders" and "Plan of Distribution."

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SELLING STOCKHOLDERS

On April 28, 2015, we sold to the selling stockholders 4,907,975 shares of our common stock in a private placement, pursuant to a securities purchase agreement with the selling stockholders. The registration statement to which this prospectus relates is being filed pursuant to a registration rights agreement we entered into with the selling stockholders.

The following table sets forth, to our knowledge, certain information as of March 7, 2016 regarding the beneficial ownership of our common stock by the selling stockholders and the shares being offered by the selling stockholders. Unless otherwise indicated, information with respect to beneficial

ownership is based upon information obtained from the selling stockholders as of March 11, 2016. Information with respect to shares owned beneficially after the offering assumes the sale of all of the shares offered and no other purchases or sales of our common stock. The selling stockholders may offer and sell some, all or none of their shares.

	Shares Beneficially Owned Prior to Offering(1)(2)		Shares Being Offered	Shares Beneficially Owned After Offering(1)	
Name and Address	Number	Percent	Number	Number	Percent
Deerfield Special Situations Fund, L.P. (3)	736,196	2.6%	736,196	_	_
Entities affiliated with Acuta Capital Partners, LLC (4)	2,394,964	8.6%	613,497	1,781,467	6.4%
2B LLC (5)	45,988	*	42,945	3,043	*
venBio Select Fund LLC (6)	663,684	2.4%	570,552	93,132	*
Entities affiliated with Camber Capital Management,					
LLC (7)	1,226,994	4.4%	1,226,994	_	_
P Consonance Opportunities LTD (8)	61,350	*	61,350	_	_
Altairis Offshore Levered (9)	429,447	1.5%	429,447	_	_
Eventide Asset Management, LLC (10)	2,252,000	8.1%	490,798	1,761,202	6.3%
Broadfin Healthcare Master Fund, LTD (11)	736,196	2.6%	736,196	_	_

- * Less than 1%.
- (1) Based on 27,854,567 shares of our common stock outstanding as of March 7, 2016.
- (2) To our knowledge, the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them, subject to community property laws, where applicable, and the information contained in the footnotes to this table.
- (3) James E. Flynn has voting and investment power over of all of the shares held by Deerfield Special Situations Fund, L.P. Mr. Flynn disclaims beneficial ownership over all of the shares held by Deerfield Special Situations Fund, L.P., except to the extent of his pecuniary interest therein. The address for Deerfield Special Situations Fund, L.P. is 780 Third Avenue, 37th Floor, New York, New York 10017.
- (4) Shareholdings consist of 1,538,285 shares held by Acuta Capital Fund, LP, 459,124 shares held by Acuta Opportunity Fund, LP and 397,555 shares held by 2B LLC. Shares offered consist of 429,448 shares held by Acuta Capital Fund, LP and 184,049 shares held by Acuta Opportunity Fund, LP. Richard Lin is the Managing Member of Acuta Capital Partners, LLC, the general partner of Acuta Capital Fund, LP and Acuta Opportunity Fund, LP and an investment manager for 2B LLC and has voting and investment power over all of the shares held by Acuta Capital Fund, LP and Acuta Opportunity Fund, LP and the 397,555 shares held by 2B LLC but does not have voting or investment power over the shares held by 2B LLC described in footnote 5 below. Mr. Lin disclaims beneficial ownership over all of the shares held by Acuta Capital Fund, LP, Acuta Opportunity Fund, LP and 2B LLC, except to the extent of his pecuniary interest therein.
- (5) J. Darius Bikoff, a Member of 2B LLC, has voting and investment control over all the shares held by 2B LLC. Mr. Bikoff disclaims beneficial ownership over all the shares held by 2B LLC, except to the extent of his pecuniary interest therein.
- (6) Behzad Aghazadeh, the portfolio manager of venBio Select Fund LLC, has voting and investment power over all of the shares held by venBio Select Fund LLC. Mr. Aghazadeh disclaims beneficial ownership over all of the shares held by venBio Select Fund LLC, except to the extent of his pecuniary interest therein.
- (7) Shareholdings consist of 1,181,718 shares held by Camber Capital Master Fund, LP, 8,834 shares held by Camber Capital Fund II, LP, and 36,442 shares held by Arthur J. Remillard Jr. Trust. Camber Capital Management, LLC has voting and investment power over all of the shares held by Camber Capital Master Fund, LP, Camber Capital Fund II, LP and Arthur J. Remillard Jr. Trust. Camber Capital Management, LLC disclaims beneficial ownership over all of the shares held by Camber Capital Master Fund, LP, Camber Capital Fund II, LP and Arthur J. Remillard Jr. Trust, except to the extent of any pecuniary interest therein.
- (8) Consonance Capital Opportunity Fund Management LP has voting and investment power over all the shares held by P Consonance Opportunities LTD. Consonance Capital Opportunity Fund Management LP disclaims beneficial ownership over all of the shares held

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- by P Consonance Opportunities LTD, except to the extent of any pecuniary interest therein.
- (9) Polar Securities Inc. serves as investment advisor to Altairis Offshore Levered and has voting and investment control over all the shares held by Altairis Offshore Levered. Polar Securities Inc. disclaims beneficial ownership over all of the shares held by Altairis Offshore Levered except to the extent of its pecuniary interest therein.
- (10) Shares owned prior to the offering are based upon a Schedule 13G filed by Eventide Asset Management, LLC on February 12, 2016. As of May 11, 2015, shareholdings consist of 1,193,431 shares held by Eventide Gilead Fund and 814,867 shares held by Eventide Healthcare & Life Sciences Fund, each of which is a registered investment company for which Eventide Asset Management, LLC acts as investment adviser. Eventide Asset Management, LLC has voting and investment power with respect to all of such shares. The address of Eventide Asset Management, LLC is One International Place, 35th Floor, Boston, Massachusetts 02110. Of the shares offered, Eventide Gilead Fund holds 381,731 shares and Eventide Healthcare & Life Sciences Fund holds 109,067 shares.
- (11) Broadfin Capital, LLC serves as investment adviser to Broadfin Healthcare Master Fund, LTD with the power to direct investments and/or sole power to vote the shares owned by Broadfin Healthcare Master Fund, LTD. Kevin Kotler is the Managing Member of Broadfin Capital, LLC. Mr. Kotler has voting and dispositive power over the shares held by Broadfin Healthcare Master Fund, LTD. Mr. Kotler disclaims beneficial ownership of all shares beneficially owned, except to the extent of his pecuniary interests in such shares.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling stockholders to permit the resale of these shares of common stock by the holders of the shares of common stock from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold on any

national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- · ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- · purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- · an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- · a combination of any such methods of sale; and
- · any other method permitted pursuant to applicable law.

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The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and if such short sale shall take place after the date that this registration statement is declared effective by the Securities and Exchange Commission, or SEC, the selling stockholders may deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, or the Exchange Act.

Each selling stockholder has informed us that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. Upon a selling stockholder notifying us in writing that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of common

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stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8.0%).

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

Each selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock pursuant to the registration rights agreement, including, without limitation, SEC filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that each selling stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We will indemnify the selling stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with the registration rights agreement, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, in accordance with the registration rights agreement, or we may be entitled to contribution.

LEGAL MATTERS

The validity of the common stock offered by this prospectus is being passed upon for us by Pillsbury Winthrop Shaw Pittman LLP, San Francisco and Palo Alto, California.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements as of and for each of the two years in the period ended December 31, 2015 included in our Annual Report on Form 10-K for the year ended December 31, 2015, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

The financial statements for the year ended December 31, 2013 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2015 have been so incorporated in reliance on the report of PricewaterhouseCoopers 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 have filed a registration statement on Form S-3 with the SEC under the Securities Act. This prospectus is part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. We file annual, quarterly and current reports, proxy statements and other information with

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the SEC. You may read and copy the registration statement and any other document we file with the SEC at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains reports, proxy and information statements and other information regarding companies, such as ours, that file documents electronically with the SEC. The address of that site on the world wide web is http://www.sec.gov. The information on the SEC's web site is not part of this prospectus, and any references to this web site or any other web site are inactive textual references only.

The SEC permits us to "incorporate by reference" the information contained in documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. We have filed with the SEC, and incorporate by reference in this prospectus:

- · our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC on March 14, 2016;
- · our Current Report on Form 8-K filed with the SEC on March 4, 2016; and
- the description of our common stock contained in our Registration Statement on Form 8-A filed on October 28, 2013 including any amendment or report filed for the purpose of updating such description.

We are not, however, incorporating any documents or information that we are deemed to furnish and not file in accordance with SEC rules.

You may request a copy of any or all of the documents incorporated by reference but not delivered with this prospectus, at no cost, by writing or telephoning us at the following address and number: Investor Relations, Veracyte, Inc., 6000 Shoreline Court, Suite 300, South San Francisco, California 94080. We will not, however, send exhibits to those documents, unless the exhibits are specifically incorporated by reference in those documents. These documents are also available on our website at www.veracyte.com.