

# ACHILLION PHARMACEUTICALS INC

## FORM S-3

(Securities Registration Statement (simplified form))

Filed 02/23/17

Address	300 GEORGE STREET NEW HAVEN, CT 06511
Telephone	203-624-7000
CIK	0001070336
Symbol	ACHN
SIC Code	2834 - Pharmaceutical Preparations
Industry	Biotechnology & Medical Research
Sector	Healthcare
Fiscal Year	12/31

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

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**FORM S-3**  
**REGISTRATION STATEMENT**  
*UNDER*  
*THE SECURITIES ACT OF 1933*

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**ACHILLION PHARMACEUTICALS, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**52-2113479**  
(I.R.S. Employer  
Identification Number)

**300 George Street**  
**New Haven, Connecticut 06511-6624**  
**(203) 624-7000**  
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

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**Milind S. Deshpande, Ph.D.**  
**President and Chief Executive Officer**  
**Achillion Pharmaceuticals, Inc.**  
**300 George Street**  
**New Haven, Connecticut 06511-6624**  
**Phone: (203) 624-7000**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*  
**Steven D. Singer, Esq.**  
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**Wilmer Cutler Pickering Hale and Dorr LLP**  
**60 State Street**  
**Boston, MA 02109**  
**Telephone: (617) 526-6000**

**Approximate date of commencement of proposed sale to the public** : From time to time after this registration statement becomes effective.

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

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, as amended, or the Securities Act, 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:

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.

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.

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," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company) Smaller reporting company

#### CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Amount of Registration Fee
<b>Primary Offering:</b>				
Common Stock, par value \$0.001 per share	(1)	(1)	(1)	(1)
Preferred Stock, par value \$0.01 per share	(1)	(1)	(1)	(1)
Warrants	(1)	(1)	(1)	(1)
Units	(1)	(1)	(1)	(1)
Total for Primary offering	\$250,000,000(2)	(1)	\$250,000,000(2)	\$28,975
<b>Secondary Offering:</b>				
Common Stock, par value \$0.001 per share	18,367,346(3)	\$4.27(4)	\$78,428,567.42(4)	\$9,090
<b>Total:</b>			\$328,428,567.42	\$38,065

- (1) Pursuant to Form S-3 General Instruction II.D information is not required to be included. With respect to the primary offering, an indeterminate amount of the securities of each identified class is being registered as may from time to time be offered hereunder at indeterminate prices, along with an indeterminate number of securities that may be issued upon exercise, settlement, exchange or conversion of securities offered or sold hereunder as shall have aggregate initial offering price not to exceed an aggregate of \$250,000,000. With respect to the primary offering, pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or pursuant to anti-dilution provisions of any such securities. Separate consideration may or may not be received for securities that are issuable upon conversion, exercise or exchange of other securities.
- (2) The total amount to be registered and the proposed maximum aggregate offering price for the primary offering are estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act.
- (3) With respect to the secondary offering, pursuant to Rule 416 under the Securities Act, this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or pursuant to anti-dilution provisions of any such securities.
- (4) The proposed maximum offering price per unit and the proposed maximum aggregate offering price for the secondary offering are estimated solely for purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act, based on the average high and low prices per share of the common stock as reported on the NASDAQ Global Select Market on February 17, 2017.

**The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

## EXPLANATORY NOTE

This registration statement contains two prospectuses:

- a base prospectus which covers both (a) the offering, issuance and sale by the Registrant of up to \$250,000,000 of the Registrant's common stock, preferred stock, warrants and/or units and (b) the offering and sale by the selling stockholder of up to a maximum of 18,367,346 shares of the Registrant's common stock; and
- a sales agreement prospectus covering the offering, issuance and sale by the Registrant of up to \$75,000,000 of the Registrant's common stock that may be issued and sold under a sales agreement with Cantor Fitzgerald & Co.

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus will be specified in a prospectus supplement to the base prospectus. The sales agreement prospectus immediately follows the base prospectus. The common stock that may be offered, issued and sold by the Registrant under the sales agreement prospectus is included in the \$250,000,000 of securities that may be offered, issued and sold by the Registrant under the base prospectus. Upon termination of the sales agreement with Cantor Fitzgerald & Co., any portion of the \$75,000,000 included in the sales agreement prospectus that is not sold pursuant to the sales agreement will be available for sale in other offerings pursuant to the base prospectus, and if no shares are sold under the sales agreement, the full \$250,000,000 of securities may be sold in other offerings pursuant to the base prospectus and an accompanying prospectus supplement.

The information in this prospectus is not complete and may be changed. Neither we nor the selling stockholder may sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and neither we nor the selling stockholder are soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

**SUBJECT TO COMPLETION, DATED FEBRUARY 23, 2017**

PROSPECTUS

# **Achillion Pharmaceuticals, Inc.**



**\$250,000,000**

**of**

**Common Stock**

**Preferred Stock**

**Warrants**

**Units**

**And**

**18,367,346 Shares**

**of**

**Common Stock Offered by the Selling Stockholder**

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We may offer and sell securities from time to time in one or more offerings of up to \$250,000,000 in aggregate offering price. This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide the specific terms of these securities in supplements to this prospectus. The prospectus supplements will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this document. You should read this prospectus and any applicable prospectus supplement before you invest.

In addition to the primary offering of securities described above, the selling stockholder identified in this prospectus may from time to time sell up to 18,367,346 shares of common stock. We will not receive any proceeds from the sale, if any, of common stock by the selling stockholder. Unless otherwise set forth in a prospectus supplement, the selling stockholders will pay any underwriting discounts and commissions and transfer taxes incurred by the selling stockholder in disposing of the shares of common stock.

We or the selling stockholder may offer such securities in amounts, at prices and on terms determined at the time of offering. The securities may be sold directly to you, through agents, or through underwriters and dealers. If agents, underwriters or dealers are used to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Our common stock is listed on the NASDAQ Global Select Market under the symbol "ACHN."

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**Investing in these securities involves certain risks. See “[Risk Factors](#)” on page 5 of this prospectus and in any accompanying prospectus supplement and in the documents incorporated by reference herein and therein for a discussion of the factors you should carefully consider before deciding to purchase these securities.**

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

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**The date of this prospectus is \_\_\_\_\_, 2017.**

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, which we refer to as the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings for an aggregate initial offering price of up to \$250,000,000. In addition to the primary offering of securities, the selling stockholder may from time to time sell up to 18,367,346 shares of our common stock described in this prospectus in one or more secondary offerings.

This prospectus provides you with a general description of the securities we or the selling stockholder may offer. Each time we or the selling stockholder sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and the accompanying prospectus supplement together with the additional information described under the heading “Where You Can Find More Information” beginning on page 2 of this prospectus.

You should rely only on the information contained in or incorporated by reference in this prospectus, any accompanying prospectus supplement or in any related free writing prospectus filed by us with the SEC. Neither we, nor the selling stockholder (nor any of our or their respective affiliates) have authorized anyone to provide you with different information. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Unless otherwise stated, all references to “us,” “our,” “Achillion,” “we,” the “Company” and similar designations refer to Achillion Pharmaceuticals, Inc. Our logo, trademarks and service marks are the property of Achillion. Other trademarks or service marks appearing in this prospectus are the property of their respective holders.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. Copies of certain information filed by us with the SEC are also available on our website at <http://www.achillion.com>. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus. You may also read and copy any document we file at the SEC's Public Reference Room, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

This prospectus is part of a registration statement we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

## INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

This prospectus incorporates by reference the documents listed below (File No. 001-33095) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2016, including the information specifically incorporated by reference into the Annual Report on Form 10-K from our definitive proxy statement for the 2017 Annual Meeting of Stockholders; and
- The description of our common stock contained in our Registration Statement on Form 8-A filed on October 18, 2006, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Achillion Pharmaceuticals, Inc.  
Attention: Investor Relations  
300 George Street  
New Haven, Connecticut 06511-6624  
Phone: (203) 624-7000

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These statements are based on current expectations, estimates, forecasts and projections about the industry in which we operate and the beliefs and assumptions of our management. Words such as “expects,” “anticipates,” “targets,” “goals,” “projects,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “continues,” and “may” and variations of such words and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections regarding our future financial performance, clinical development plans and timelines; our anticipated growth and trends in our businesses; our capital needs and capital expenditures; competitive changes in the marketplace for our product candidates; our ability to innovate new products and technologies; our collaborations with third parties; intellectual property and litigation matters; potential acquisitions and divestitures; key personnel; the effect of new accounting pronouncements and other characterizations of future events or circumstances are forward-looking statements. You are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are referenced in the section of any accompanying prospectus supplement entitled “Risk Factors.” You should also carefully review the risk factors and cautionary statements described in the other documents we file from time to time with the SEC, specifically our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make. We undertake no obligation to revise or update any forward-looking statements, except to the extent required by law.

## ABOUT ACHILLION PHARMACEUTICALS, INC.

We are a science-driven, patient-focused biopharmaceutical company seeking to leverage our believed strengths across the continuum from discovery through commercialization by discovering and developing small molecule therapeutics to meet the needs of patients with infectious and complement-mediated diseases in our goal of providing better treatments for people with serious diseases. We employ a highly-disciplined discovery and development approach that has allowed us to pursue best-in-class oral antiviral therapy for chronic hepatitis C and build a platform of potent and specific complement inhibitor drug candidates. We are seeking to rapidly advance our efforts to become a fully-integrated pharmaceutical company with a goal of bringing life-saving medicines to patients with complement-mediated diseases.

### **Corporate Information**

We were incorporated in Delaware in August 1998. Our principal executive office is located at 300 George Street, New Haven, Connecticut 06511, and our telephone number is (203) 624-7000. Our internet address is <http://www.achillion.com>. The information on our web site is not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus. Our internet address is included in this prospectus as an inactive textual reference only.

## **RISK FACTORS**

Investing in our securities involves significant risks. Before deciding whether to invest in our securities, you should consider carefully the risks, uncertainties and assumptions described in this prospectus and any accompanying prospectus supplement, including the risk factors set forth in our filings with the SEC that are incorporated by reference herein and therein, including the risk factors in our most recent Annual Report on Form 10-K, as revised or supplemented by our most recent Quarterly Reports on Form 10-Q, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. If any of these risks actually occurs, our business, business prospects, financial condition or results of operations could be seriously harmed. Please also read carefully the section above entitled “Cautionary Note Regarding Forward-Looking Statements.”

## USE OF PROCEEDS

We intend to use the net proceeds from the sale of any securities offered by us under this prospectus for general corporate purposes unless otherwise indicated in the applicable prospectus supplement. General corporate purposes may include research and development expenditures, the acquisition of companies or businesses, the acquisition or licensing of intangible assets, repayment and refinancing of debt, working capital and capital expenditures. We may temporarily invest such net proceeds in investment-grade, interest-bearing securities until they are used for their stated purpose. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of net proceeds.

We will not receive any proceeds from the sale, if any, of common stock by the selling stockholder.

The selling stockholder will pay any underwriting discounts and commissions and expenses incurred by it for brokerage, accounting, tax or legal services or any other expenses incurred by it in disposing of its shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, Nasdaq Global Select Market listing fees and fees and expenses of our counsel and our accountants.

## RATIO OF COMBINED FIXED CHARGES AND PREFERENCE DIVIDENDS TO EARNINGS

The following table sets forth our ratio of combined fixed charges and preference dividends to earnings for each of the periods indicated. You should read this table in conjunction with the financial statements and notes incorporated by reference in this prospectus.

	Fiscal Year Ended				
	December 31, 2016	December 31, 2015	December 31, 2014	December 31, 2013	December 31, 2012
Ratio of combined fixed charges and preference dividends to earnings	N/A	N/A	N/A	N/A	N/A

We have computed the ratio of combined fixed charges and preference dividends to earnings set forth above by dividing pre-tax loss before fixed charges and preference dividends by fixed charges and preference dividends. Fixed charges are the sum of the following:

- interest expensed and capitalized;
- amortized premiums related to indebtedness; and
- an estimate of the interest within rental expense.

We did not pay any cash dividends on any shares of our capital stock during the periods set forth above.

We did not record earnings for any of the fiscal years ended December 31, 2016, 2015, 2014, 2013, and 2012. Accordingly, our earnings were insufficient to cover fixed charges for such periods and we are unable to disclose a ratio of combined fixed charges and preference dividends to earnings for such periods. The dollar amount of the deficiency in earnings available for fixed charges and preference dividends for the fiscal years ended December 31, 2016, 2015, 2014, 2013 and 2012 was approximately \$61.7 million, \$5.0 million, \$69.0 million, \$58.9 million and \$47.1 million, respectively.

## DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is intended as a summary only. This description is based upon, and is qualified by reference to, our certificate of incorporation, our by-laws and applicable provisions of Delaware corporate law. You should read our certificate of incorporation and by-laws, which are filed as exhibits to the registration statement of which this prospectus forms a part, for the provisions that are important to you.

Our authorized capital stock consists of 200,000,000 shares of our common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.01 per share.

### Common Stock

*Annual Meeting.* Annual meetings of our stockholders are held on the date designated in accordance with our by-laws. Special meetings of our stockholders may be called for any purpose by our board of directors, our chairman of the board, our chief executive officer or our president, but such special meetings may not be called by any other person or persons. Notice of annual or special meetings must be given, in a manner specified in our by-laws and consistent with the General Corporation Law of the State of Delaware, to each stockholder entitled to vote at such meeting not less than ten nor more than 60 days before the date of the meeting. The presence in person or by proxy of the holders of record of a majority of our issued and outstanding shares entitled to vote at such meeting constitutes a quorum for the transaction of business at meetings of the stockholders. Notice must state the place, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. Except as otherwise provided by law, our certificate of incorporation or our by-laws, all elections shall be decided by a plurality of the votes cast by the stockholders entitled to vote on the election, and all other questions shall be decided by the affirmative vote of the holders of a majority of voting power of the shares of stock present or represented and voting on the matter (or if there are two or more classes of stock entitled to vote as separate classes, then in the case of each such class, the holders of a majority in voting power of the shares of stock of that class present or represented and voting on such matter) at a duly held meeting of stockholders at which a quorum is present.

*Voting Rights.* Each holder of common stock is entitled to one vote for each share held on all matters to be voted upon by stockholders.

*Dividends.* The holders of common stock, after any preferences of holders of any preferred stock, are entitled to receive dividends when and if declared by the board of directors out of legally available funds.

*Liquidation and Dissolution.* If we are liquidated or dissolved, the holders of the common stock will be entitled to share in our assets available for distribution to stockholders in proportion to the amount of common stock they own. The amount available for common stockholders is calculated after payment of liabilities. Holders of any preferred stock will receive a preferential share of our assets before the holders of the common stock receive any assets.

*Other Rights.* Holders of the common stock have no right to:

- convert the stock into any other security;
- have the stock redeemed; or
- purchase additional stock or to maintain their proportionate ownership interest.

The common stock does not have cumulative voting rights. Holders of shares of the common stock are not required to make additional capital contributions.

*Transfer Agent and Registrar.* Computershare Trust Company, N.A. is our transfer agent and registrar for the common stock.

## Preferred Stock

The terms of any series of preferred stock may differ from the terms described below. The specific terms of any series of preferred stock offered pursuant to this prospectus will be described in the prospectus supplement relating to that series of preferred stock.

We are authorized to issue “blank check” preferred stock, which may be issued in one or more series upon authorization of our board of directors. Our board of directors is authorized to fix the designation of the series, the number of authorized shares of the series, dividend rights and terms, conversion rights, voting rights, redemption rights and terms, liquidation preferences and any other rights, powers, preferences and limitations applicable to each series of preferred stock. The authorized shares of our preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. If the approval of our stockholders is not required for the issuance of shares of our preferred stock, our board may determine not to seek stockholder approval.

A series of our preferred stock could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt. Our board of directors will make any determination to issue preferred shares based upon its judgment as to the best interests of our stockholders. Our directors, in so acting, could issue preferred stock having terms that could discourage an acquisition attempt through which an acquirer may be able to change the composition of our board of directors, including a tender offer or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of the stock.

The preferred stock has the terms described below unless otherwise provided in the prospectus supplement relating to a particular series of preferred stock. You should read the prospectus supplement relating to the particular series of preferred stock being offered for specific terms, including:

- the designation and stated value per share of the preferred stock and the number of shares offered;
- the amount of liquidation preference per share;
- the price at which the preferred stock will be issued;
- the dividend rate, or method of calculation of dividends, the dates on which dividends will be payable, whether dividends will be cumulative or noncumulative and, if cumulative, the dates from which dividends will commence to accumulate;
- any redemption or sinking fund provisions;
- if other than the currency of the United States, the currency or currencies including composite currencies in which the preferred stock is denominated and/or in which payments will or may be payable;
- any conversion provisions; and
- any other rights, preferences, privileges, limitations and restrictions on the preferred stock.

The preferred stock will, when issued, be fully paid and non-assessable. Unless otherwise specified in the prospectus supplement, each series of preferred stock will rank equally as to dividends and liquidation rights in all respects with each other series of preferred stock. The rights of holders of shares of each series of preferred stock will be subordinate to those of our general creditors.

*Rank.* Unless otherwise specified in the prospectus supplement, the preferred stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up of our affairs, rank:

- senior to our common stock and to all equity securities ranking junior to such preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs;

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- on a parity with all equity securities issued by us, the terms of which specifically provide that such equity securities rank on a parity with the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs; and
- junior to all equity securities issued by us, the terms of which specifically provide that such equity securities rank senior to the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs.

The term “equity securities” does not include convertible debt securities.

*Dividends.* Holders of the preferred stock of each series will be entitled to receive, when, as and if declared by our board of directors, cash dividends at such rates and on such dates described in the prospectus supplement. Different series of preferred stock may be entitled to dividends at different rates or based on different methods of calculation. The dividend rate may be fixed or variable or both. Dividends will be payable to the holders of record as they appear on our stock books on record dates fixed by our board of directors, as specified in the applicable prospectus supplement.

Dividends on any series of preferred stock may be cumulative or noncumulative, as described in the applicable prospectus supplement. If our board of directors does not declare a dividend payable on a dividend payment date on any series of noncumulative preferred stock, then the holders of that noncumulative preferred stock will have no right to receive a dividend for that dividend payment date, and we will have no obligation to pay the dividend accrued for that period, whether or not dividends on that series are declared payable on any future dividend payment dates. Dividends on any series of cumulative preferred stock will accrue from the date we initially issue shares of such series or such other date specified in the applicable prospectus supplement.

No dividends may be declared or paid or funds set apart for the payment of any dividends on any parity securities unless full dividends have been paid or set apart for payment on the preferred stock. If full dividends are not paid, the preferred stock will share dividends pro rata with the parity securities.

No dividends may be declared or paid or funds set apart for the payment of dividends on any junior securities unless full dividends for all dividend periods terminating on or prior to the date of the declaration or payment will have been paid or declared and a sum sufficient for the payment set apart for payment on the preferred stock.

*Liquidation Preference.* Upon any voluntary or involuntary liquidation, dissolution or winding up of our affairs, then, before we make any distribution or payment to the holders of any common stock or any other class or series of our capital stock ranking junior to the preferred stock in the distribution of assets upon any liquidation, dissolution or winding up of our affairs, the holders of each series of preferred stock shall be entitled to receive out of assets legally available for distribution to stockholders, liquidating distributions in the amount of the liquidation preference per share set forth in the prospectus supplement, plus any accrued and unpaid dividends thereon. Such dividends will not include any accumulation in respect of unpaid noncumulative dividends for prior dividend periods. Unless otherwise specified in the prospectus supplement, after payment of the full amount of their liquidating distributions, the holders of preferred stock will have no right or claim to any of our remaining assets. Upon any such voluntary or involuntary liquidation, dissolution or winding up, if our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding preferred stock and the corresponding amounts payable on all other classes or series of our capital stock ranking on parity with the preferred stock and all other such classes or series of shares of capital stock ranking on parity with the preferred stock in the distribution of assets, then the holders of the preferred stock and all other such classes or series of capital stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be entitled.

Upon any such liquidation, dissolution or winding up and if we have made liquidating distributions in full to all holders of preferred stock, we will distribute our remaining assets among the holders of any other classes or series of capital stock ranking junior to the preferred stock according to their respective rights and preferences and, in each case, according to their respective number of shares. For such purposes, our consolidation or merger with or into any other corporation, trust or entity, or the sale, lease or conveyance of all or substantially all of our property or assets will not be deemed to constitute a liquidation, dissolution or winding up of our affairs.

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*Redemption.* If so provided in the applicable prospectus supplement, the preferred stock will be subject to mandatory redemption or redemption at our option, as a whole or in part, in each case upon the terms, at the times and at the redemption prices set forth in such prospectus supplement.

The prospectus supplement relating to a series of preferred stock that is subject to mandatory redemption will specify the number of shares of preferred stock that shall be redeemed by us in each year commencing after a date to be specified, at a redemption price per share to be specified, together with an amount equal to all accrued and unpaid dividends thereon to the date of redemption. Unless the shares have a cumulative dividend, such accrued dividends will not include any accumulation in respect of unpaid dividends for prior dividend periods. We may pay the redemption price in cash or other property, as specified in the applicable prospectus supplement. If the redemption price for preferred stock of any series is payable only from the net proceeds of the issuance of shares of our capital stock, the terms of such preferred stock may provide that, if no such shares of our capital stock shall have been issued or to the extent the net proceeds from any issuance are insufficient to pay in full the aggregate redemption price then due, such preferred stock shall automatically and mandatorily be converted into the applicable shares of our capital stock pursuant to conversion provisions specified in the applicable prospectus supplement. Notwithstanding the foregoing, we will not redeem any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on the preferred stock for all past dividend periods and the then-current dividend period; or
- if such series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends for the then-current dividend period.

In addition, we will not acquire any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on all outstanding shares of such series of preferred stock for all past dividend periods and the then-current dividend period; or
- if that series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends on the preferred stock of such series for the then-current dividend period.

However, at any time we may purchase or acquire preferred stock of that series (1) pursuant to a purchase or exchange offer made on the same terms to holders of all outstanding preferred stock of such series or (2) by conversion into or exchange for shares of our capital stock ranking junior to the preferred stock of such series as to dividends and upon liquidation.

If fewer than all of the outstanding shares of preferred stock of any series are to be redeemed, we will determine the number of shares that may be redeemed pro rata from the holders of record of such shares in proportion to the number of such shares held or for which redemption is requested by such holder or by any other equitable manner that we determine. Such determination will reflect adjustments to avoid redemption of fractional shares.

Unless otherwise specified in the prospectus supplement, we will mail notice of redemption at least 30 days but not more than 60 days before the redemption date to each holder of record of preferred stock to be redeemed at the address shown on our stock transfer books. Each notice shall state:

- the redemption date;
- the number of shares and series of preferred stock to be redeemed;
- the redemption price;

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- the place or places where certificates for such preferred stock are to be surrendered for payment of the redemption price;
- that dividends on the shares to be redeemed will cease to accrue on such redemption date;
- the date on which the holder's conversion rights, if any, as to such shares shall terminate; and
- the specific number of shares to be redeemed from each such holder if fewer than all the shares of any series are to be redeemed.

If notice of redemption has been given and we have set aside the funds necessary for such redemption in trust for the benefit of the holders of any shares called for redemption, then from and after the redemption date, dividends will cease to accrue on such shares, and all rights of the holders of such shares will terminate, except the right to receive the redemption price.

*Voting Rights* . Holders of preferred stock will not have any voting rights, except as required by law or as indicated in the applicable prospectus supplement.

Unless otherwise provided for under the terms of any series of preferred stock, no consent or vote of the holders of shares of preferred stock or any series thereof shall be required for any amendment to our certificate of incorporation that would increase the number of authorized shares of preferred stock or the number of authorized shares of any series thereof or decrease the number of authorized shares of preferred stock or the number of authorized shares of any series thereof (but not below the number of authorized shares of preferred stock or such series, as the case may be, then outstanding).

*Conversion Rights* . The terms and conditions, if any, upon which any series of preferred stock is convertible into our common stock will be set forth in the applicable prospectus supplement relating thereto. Such terms will include the number of shares of common stock into which the shares of preferred stock are convertible, the conversion price, rate or manner of calculation thereof, the conversion period, provisions as to whether conversion will be at our option or at the option of the holders of the preferred stock, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption.

*Transfer Agent and Registrar* . The transfer agent and registrar for the preferred stock will be set forth in the applicable prospectus supplement.

#### **Provisions of Our Certificate of Incorporation and By-laws and Delaware Law That May Have Anti-Takeover Effects**

*Board of Directors* . Our certificate of incorporation and by-laws provide for a board of directors divided as nearly equally as possible into three classes. Each class is elected to a term expiring at the annual meeting of stockholders held in the third year following the year of such election. The number of directors comprising our board of directors is fixed from time to time by the board of directors.

*Removal of Directors by Stockholders* . Our by-laws provide that, subject to the rights of holders of any series of preferred stock, members of our board of directors may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes which all the stockholders would be entitled to cast in an election of directors.

*Stockholder Nomination of Directors* . Our by-laws provide that a stockholder must notify us in writing of any stockholder nomination of a director not earlier than the 120<sup>th</sup> day and not later than the 90<sup>th</sup> day prior to the first anniversary of the preceding year's annual meeting; provided, that if the date of the annual meeting is advanced by more than 20 days, or delayed by more than 60 days from such anniversary date, notice by the stockholder to be timely must be so delivered not earlier than the 120<sup>th</sup> day prior to the date of such annual meeting and not later than the close of business, on the later of (1) the 90<sup>th</sup> day prior to the date of such meeting and (2) the 10<sup>th</sup> day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting is first made by us.

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*No Action By Written Consent* . Our certificate of incorporation provides that our stockholders may not act by written consent and may only act at duly called meetings of stockholders.

*Super-Majority Voting* . The General Corporation Law of the State of Delaware, which we refer to as the DGCL, provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless a corporation's certificate of incorporation or by-laws, as the case may be, requires a greater percentage. Our by-laws may be amended, altered or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any annual election of directors or class of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any annual election of directors or class of directors is required to amend or repeal or to adopt, any provisions inconsistent with any of the provisions of our certificate of incorporation described above.

*Delaware Business Combination Statute*. Section 203 of the DGCL is applicable to us. Section 203 of the DGCL restricts some types of transactions and business combinations between a corporation and a 15% stockholder. A 15% stockholder is generally considered by Section 203 to be a person owning 15% or more of the corporation's outstanding voting stock. Section 203 refers to a 15% stockholder as an "interested stockholder." Section 203 restricts these transactions for a period of three years from the date the stockholder acquires 15% or more of our outstanding voting stock. With some exceptions, unless the transaction is approved by the board of directors and the holders of at least two-thirds of the outstanding voting stock of the corporation, Section 203 prohibits significant business transactions such as:

- a merger with, disposition of significant assets to or receipt of disproportionate financial benefits by the interested stockholder, and
- any other transaction that would increase the interested stockholder's proportionate ownership of any class or series of our capital stock.

The shares held by the interested stockholder are not counted as outstanding when calculating the two-thirds of the outstanding voting stock needed for approval.

The prohibition against these transactions does not apply if:

- prior to the time that any stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction in which such stockholder acquired 15% or more of our outstanding voting stock, or
- the interested stockholder owns at least 85% of our outstanding voting stock as a result of a transaction in which such stockholder acquired 15% or more of our outstanding voting stock. Shares held by persons who are both directors and officers or by some types of employee stock plans are not counted as outstanding when making this calculation.

### **Directors' Liability**

Our certificate of incorporation limits the personal liability of directors for breach of fiduciary duty to the maximum extent permitted by the DGCL and provides that no director will have personal liability to us or to our stockholders for monetary damages for breach of fiduciary duty as a director. However, these provisions do not eliminate or limit the liability of any of our directors:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- for voting or assenting to unlawful payments of dividends, stock repurchases or other distributions; or
- for any transaction from which the director derived an improper personal benefit.

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Any amendment to or repeal of these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to such amendment or repeal. If the DGCL is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the DGCL.

Our certificate of incorporation provides that we must indemnify our directors and officers and we must advance expenses, including attorneys' fees, to our directors and officers in connection with legal proceedings, subject to very limited exceptions.

We maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

## DESCRIPTION OF WARRANTS

We may issue warrants to purchase preferred stock or common stock. We may offer warrants separately or together with one or more additional warrants, preferred stock or common stock, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. If we issue warrants as part of a unit, the accompanying prospectus supplement will specify whether those warrants may be separated from the other securities in the unit prior to the expiration date of the warrants. The applicable prospectus supplement will also describe the following terms of any warrants:

- the specific designation and aggregate number of, and the offering price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants are to be sold separately or with other securities as parts of units;
- whether the warrants will be issued in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- the designation and terms of any equity securities purchasable upon exercise of the warrants;
- if applicable, the designation and terms of the preferred stock or common stock with which the warrants are issued and, the number of warrants issued with each security;
- if applicable, the date from and after which any warrants issued as part of a unit and the related preferred stock or common stock will be separately transferable;
- the number of shares of preferred stock or the number of shares of common stock purchasable upon exercise of a warrant and the price at which those shares may be purchased;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of, and other provisions for changes to or adjustment in the exercise price of, the warrants, if any;
- any redemption or call provisions; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange or exercise of the warrants.

## DESCRIPTION OF UNITS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms summarized below will apply generally to any units that we may offer, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any units offered under that prospectus supplement may differ from the terms described below. Specific unit agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement that includes this prospectus.

### General

We may issue units consisting of common stock, preferred stock, or warrants, for the purchase of common stock and/or preferred stock in one or more series, in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

We may issue units in such amounts and in such numbers of distinct series as we determine.

The provisions described in this section, as well as those described under “Description of Capital Stock” and “Description of Warrants” will apply to each unit, as applicable, and to any common stock, preferred stock or warrant included in each unit, as applicable.

### Unit Agent

The name and address of the unit agent for any units we offer will be set forth in the applicable prospectus supplement.

### Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

## FORMS OF SECURITIES

Each warrant and unit will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of securities. Unless the applicable prospectus supplement provides otherwise, certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the warrants or units represented by these global securities. The depositary maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

### Registered Global Securities

We may issue the warrants and units in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or nominee. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depositary for the registered global security, the nominees of the depositary or any successors of the depositary or those nominees.

If not described below, any specific terms of the depositary arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the issuance of a registered global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary, or its nominee, is the registered owner of a registered global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the applicable warrant agreement or unit agreement. Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable warrant agreement or unit agreement. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable warrant agreement or unit agreement. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the applicable warrant agreement or unit agreement, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

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Any payments to holders with respect to warrants or units represented by a registered global security registered in the name of a depositary or its nominee will be made to the depositary or its nominee, as the case may be, as the registered owner of the registered global security. None of us, the warrant agents, the unit agents or any other agent of ours, or agent of the warrant agents or unit agents will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depositary for any of the securities represented by a registered global security, upon receipt of any payment to holders of principal, premium, interest or other distribution of underlying securities or other property on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depositary. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depositary for any of the securities represented by a registered global security is at any time unwilling or unable to continue as depositary or ceases to be a clearing agency registered under the Exchange Act, and a successor depositary registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the registered global security that had been held by the depositary. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depositary gives to the relevant warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depositary's instructions will be based upon directions received by the depositary from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depositary.

## SELLING STOCKHOLDER

This prospectus also relates to the possible sale by Johnson & Johnson Innovation-JJDC, Inc., who we refer to in this prospectus as the “selling stockholder,” of up to 18,367,346 shares of our common stock (plus an indeterminate number of shares of our common stock that may be issued upon stock splits, stock dividends or similar transactions in accordance with Rule 416 under the Securities Act) that were issued and outstanding prior to the original date of filing of the registration statement of which this prospectus forms a part.

The selling stockholder shall not sell any shares of our common stock pursuant to this prospectus until we have identified the shares of common stock being offered for resale by the selling stockholder in a subsequent prospectus supplement. However, except as described below under “—Restriction on Disposition,” the selling stockholder may sell or transfer all or a portion of its shares of our common stock pursuant to any available exemption from the registration requirements of the Securities Act.

The following table sets forth the name of the selling stockholder, the number of shares and percentage of our total outstanding common stock beneficially owned by the selling stockholder as of February 15, 2017, the number of shares that may be offered under this prospectus by the selling stockholder, and the number of shares and percentage of our total outstanding common stock beneficially owned by the selling stockholder, assuming all of the shares of common stock registered for resale by the selling stockholder hereby are sold. Beneficial ownership is determined in accordance with Section 13(d) of the Exchange Act. The number of shares in the column “Number of Shares of Common Stock Being Offered” represents all of the shares of common stock that the selling stockholder may offer and sell from time to time under this prospectus. The percentage of shares of common stock owned prior to and after the offering is based on 136,721,929 shares of common stock outstanding as of February 15, 2017.

Name of Selling Stockholder	Shares of Common Stock Beneficially Owned Prior to Offering (1)		Number of Shares of Common Stock Being Offered	Shares of Common Stock to be Beneficially Owned After Offering (1)	
	Number	Percentage		Number	Percentage
	Johnson & Johnson Innovation-JJDC, Inc.(1)	18,367,346		13.43%	18,367,346

- (1) The selling stockholder is a wholly-owned subsidiary of Johnson & Johnson. The selling stockholder has shared voting and dispositive power with Johnson & Johnson with respect to all 18,367,346 shares being offered. Johnson & Johnson may be deemed to indirectly beneficially own the shares of common stock that are directly beneficially owned by the selling stockholder. The address for Johnson & Johnson is One Johnson & Johnson Plaza, New Brunswick, NJ 08933.

### Relationship with the Selling Stockholder

#### *Collaboration and License Agreement*

In May 2015, we entered into an exclusive collaboration and license agreement with Janssen Pharmaceuticals, Inc., which we refer to as Janssen, a subsidiary of Johnson & Johnson, and its affiliate, the selling stockholder. We refer to this agreement as the Janssen Agreement. Under the Janssen Agreement we granted Janssen exclusive worldwide rights to develop and commercialize products that contain one or more of our drug candidates for the treatment of HCV, namely odalasvir, a second-generation NS5A inhibitor, ACH-3422, a NS5B HCV polymerase inhibitor, and sovalprevir, a NS3/4A HCV protease inhibitor. The Janssen Agreement became effective June 29, 2015 upon the early termination of applicable waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, or the HSR Act. For more information, see the additional documents described under the heading “Where You Can Find More Information” in this prospectus.

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*Stock Purchase Agreement*

On July 1, 2015, pursuant to the terms of a stock purchase agreement by and between ourselves and the selling stockholder, which we refer to as the JJDC Stock Purchase Agreement, we issued and sold 18,367,346 shares of our common stock to the selling stockholder at a price per share of \$12.25.

*Investor Agreement*

In connection with the closing of the transactions contemplated by the JJDC Stock Purchase Agreement, we and the selling stockholder entered into an Investor Agreement on July 1, 2015, which we refer to as the Investor Agreement. For more information on the terms of the Investor Agreement, see the additional documents described under the heading “Where You Can Find More Information” in this prospectus.

*Restriction on Disposition*

In connection with the filing of the registration statement of which this prospectus forms a part, the selling stockholder agreed, subject to limited exceptions, to restrict its dispositions of our common stock.

Except with respect to the foregoing, the selling stockholder does not have, and within the past three years has not had, any position, office or other material relationship with us.

## PLAN OF DISTRIBUTION

We or the selling stockholder may sell securities:

- through underwriters, brokers or dealers;
- through agents;
- directly to one or more purchasers in negotiated sales or competitively bid transactions;
- through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction; or
- through a combination of any of these methods of sale.

In addition, we may issue securities as a dividend or distribution or in a subscription rights offering to our existing security holders. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We or the selling stockholder may directly solicit offers to purchase securities, or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act, and describe any commissions that we or the selling stockholder must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price, or prices, which may be changed from time to time;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price and the proceeds we or the selling stockholder will receive from the sale of the securities;
- any discounts and commissions to be allowed or re-allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or re-allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we and/or the selling stockholder will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we and/or the selling stockholder will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

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If a dealer is utilized in the sale of the securities in respect of which this prospectus is delivered, we and/or the selling stockholder will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Remarketing firms, agents, underwriters, dealers and other persons may be entitled under agreements which they may enter into with us to indemnification by us and the selling stockholder against certain civil liabilities, including liabilities under the Securities Act, and may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

We may pay expenses incurred with respect to the registration of the shares of common stock owned by the selling stockholder.

If so indicated in the applicable prospectus supplement, we or the selling stockholder will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and
- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery. The underwriters and other persons acting as our agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Certain agents, underwriters and dealers, and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or one or more of our respective affiliates or the selling stockholder in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may overallocate in connection with the offering, creating a short position for their own accounts. In addition, to cover overallocations or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in three business days, unless the parties to any such trade expressly agree otherwise. The applicable prospectus supplement may provide that the original issue date for your securities may be more than three scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle more than three scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

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The securities may be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

## **LEGAL MATTERS**

Unless the applicable prospectus supplement indicates otherwise, the validity of the securities in respect of which this prospectus is being delivered will be passed upon by Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York. Any underwriters will also be advised about the validity of the securities and other legal matters by their own counsel, which will be named in the applicable prospectus supplement.

## **EXPERTS**

The financial statements and management's assessment of the effectiveness of 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, 2016 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.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED FEBRUARY 23, 2017

PROSPECTUS



## Achillion Pharmaceuticals, Inc.

Up to \$75,000,000  
Common Stock

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We have entered into a Controlled Equity Offering <sup>SM</sup> sales agreement with Cantor Fitzgerald & Co. relating to shares of our common stock, \$0.001 par value per share, offered by this prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$75,000,000 from time to time through Cantor Fitzgerald & Co., acting as agent.

Our common stock is listed on the NASDAQ Global Select Market under the symbol "ACHN." On February 22, 2017, the closing sale price of our common stock on the NASDAQ Global Select Market was \$4.20 per share.

Sales of our common stock, if any, under this prospectus may be made in sales deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act. Cantor Fitzgerald & Co. will act as sales agent and use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, on mutually agreed terms between Cantor Fitzgerald & Co. and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Cantor Fitzgerald & Co. will be entitled to compensation at a fixed commission rate of up to 3.0% of the gross sales price per share sold. In connection with the sale of our common stock on our behalf, Cantor Fitzgerald & Co. will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Cantor Fitzgerald & Co. will be deemed to be underwriting commissions or discounts.

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**Investing in our common stock involves significant risks. See "[Risk Factors](#)" beginning on page SA-7 of this prospectus, and in the documents incorporated herein by reference for the factors you should carefully consider before deciding to purchase shares of our common stock.**

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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.



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The date of this prospectus is \_\_\_\_\_, 2017.

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a shelf registration process. Under the shelf registration process, we may offer shares of our common stock having an aggregate offering price of up to \$75,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering. In connection with such offers and when accompanied by the base prospectus included in the registration statement of which this prospectus forms a part, this prospectus will be deemed a prospectus supplement to such base prospectus.

This prospectus describes the specific terms of the common stock we are offering and also adds to and updates information contained in the documents incorporated by reference into this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference into this prospectus that was filed with the SEC before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference into this prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We have not, and Cantor Fitzgerald & Co. has not, authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and Cantor Fitzgerald & Co. take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and Cantor Fitzgerald & Co. is not, making an offer to sell or soliciting an offer to buy our securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus, the documents incorporated by reference into this prospectus, and in any free writing prospectus prepared by or on behalf of us that we have authorized for use in connection with this offering is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, the documents incorporated by reference into this prospectus, and any free writing prospectus prepared by or on behalf of us that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation by Reference.”

Other than in the United States, no action has been taken by us or Cantor Fitzgerald & Co. that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Unless otherwise stated, all references to “us,” “our,” “Achillion,” “we,” the “Company” and similar designations refer to Achillion Pharmaceuticals, Inc. Our logo, trademarks and service marks are the property of Achillion. Other trademarks or service marks appearing in this prospectus are the property of their respective holders.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. Copies of certain information filed by us with the SEC are also available on our website at <http://www.achillion.com>. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus. You may also read and copy any document we file at the SEC's Public Reference Room, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

This prospectus is part of a registration statement we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

## IN CORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

This prospectus incorporates by reference the documents listed below (File No. 001-33095) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2016, including the information specifically incorporated by reference into the Annual Report on Form 10-K from our definitive proxy statement for the 2017 Annual Meeting of Stockholders; and
- The description of our common stock contained in our Registration Statement on Form 8-A filed on October 18, 2006, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Achillion Pharmaceuticals, Inc.  
Attention: Investor Relations  
300 George Street  
New Haven, Connecticut 06511-6624  
Phone: (203) 624-7000

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These statements are based on current expectations, estimates, forecasts and projections about the industry in which we operate and the beliefs and assumptions of our management. Words such as “expects,” “anticipates,” “targets,” “goals,” “projects,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “continues,” and “may” and variations of such words and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections regarding our future financial performance, clinical development plans and timelines; our anticipated growth and trends in our businesses; our capital needs and capital expenditures; competitive changes in the marketplace for our product candidates; our ability to innovate new products and technologies; our collaborations with third parties; intellectual property and litigation matters; potential acquisitions and divestitures; key personnel; the effect of new accounting pronouncements and other characterizations of future events or circumstances are forward-looking statements. You are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are referenced in the section of any accompanying prospectus supplement entitled “Risk Factors.” You should also carefully review the risk factors and cautionary statements described in the other documents we file from time to time with the SEC, specifically our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make. We undertake no obligation to revise or update any forward-looking statements, except to the extent required by law.

## ABOUT ACHILLION PHARMACEUTICALS, INC.

We are a science-driven, patient-focused biopharmaceutical company seeking to leverage our believed strengths across the continuum from discovery through commercialization by discovering and developing small molecule therapeutics to meet the needs of patients with infectious and complement-mediated diseases in our goal of providing better treatments for people with serious diseases. We employ a highly-disciplined discovery and development approach that has allowed us to pursue best-in-class oral antiviral therapy for chronic hepatitis C and build a platform of potent and specific complement inhibitor drug candidates. We are seeking to rapidly advance our efforts to become a fully-integrated pharmaceutical company with a goal of bringing life-saving medicines to patients with complement-mediated diseases.

### **Corporate Information**

We were incorporated in Delaware in August 1998. Our principal executive office is located at 300 George Street, New Haven, Connecticut 06511, and our telephone number is (203) 624-7000. Our internet address is <http://www.achillion.com>. The information on our web site is not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus. Our internet address is included in this prospectus as an inactive textual reference only.

## THE OFFERING

This summary highlights selected information about our common stock and this offering. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of our company and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus, including the information incorporated by reference into this prospectus.

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$75,000,000.
Common stock to be outstanding after this offering	Up to 154,579,071 shares, assuming sales at a price of \$4.20 per share, which was the closing price of our common stock on the NASDAQ Global Select Market on February 22, 2017. The actual number of shares issued will vary depending on the sales price under this offering.
Manner of offering	“At the market offering” that may be made from time to time through our sales agent, Cantor Fitzgerald & Co. See “Plan of Distribution” on page SA-12 of this prospectus.
Use of Proceeds	<p>We intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes. Although we have not yet identified specific uses for these proceeds, we currently anticipate using the proceeds for some or all of the following purposes: research and development expenses, potential acquisitions of companies or businesses, potential acquisitions or licensing of intangible assets, repayment and refinancing of debt, working capital and capital expenditures.</p> <p>We may temporarily invest the net proceeds in short-term, investment-grade, interest-bearing instruments and U.S. government securities until they are used for their stated purpose. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of the net proceeds. See “Use of Proceeds” on page SA-9 of this prospectus.</p>
Risk Factors	Investing in our common stock involves a high degree of risk. Please read the information contained in and incorporated by reference under the heading “Risk Factors” on page SA-7 of this prospectus, and under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus.
NASDAQ Global Select Market symbol	“ACHN”

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The number of shares of our common stock that will be outstanding immediately after this offering is based on 136,721,929 shares outstanding as of December 31, 2016. The number of shares outstanding as of December 31, 2016, as used throughout this prospectus, unless otherwise indicated, excludes:

- 10,394,351 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2016, at a weighted average exercise price of \$7.04 per share;
- 6,838,931 shares of our common stock reserved for future issuance as of December 31, 2016 under our 2015 Stock Incentive Plan;
- 1,665,307 shares of our common stock reserved for future issuance as of December 31, 2016 under our 2006 Employee Stock Purchase Plan, as amended; and
- 2,832,612 shares of our common stock issuable upon the exercise of warrants outstanding as of December 31, 2016, at a weighted average exercise price of \$3.12 per share.

## RISK FACTORS

*An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks described below and discussed under the section captioned "Risk Factors" included in our most recent annual report on Form 10-K, as revised or supplemented by our most recent quarterly report on Form 10-Q, each of which are on file with the SEC and are incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in future. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.*

### **Additional Risks Related to This Offering**

**We have broad discretion in how we use the net proceeds of this offering, and we may not use these proceeds effectively or in ways with which you agree.**

We have not designated any portion of the net proceeds from this offering to be used for any particular purpose. Our management will have broad discretion as to the application of the net proceeds of this offering and could use them for purposes other than those contemplated at the time of this offering. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not increase the market price of our common stock.

### **You may experience immediate and substantial dilution.**

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 17,857,142 shares of our common stock are sold at a price of \$4.20 per share pursuant to this prospectus, which was the last reported sale price of our common stock on the NASDAQ Global Select Market on February 22, 2017, for aggregate gross proceeds of \$75.0 million, after deducting commissions and estimated aggregate offering expenses payable by us, you would experience immediate dilution of \$1.35 per share, representing the difference between our as adjusted net tangible book value per share as of December 31, 2016 after giving effect to this offering and the assumed offering price. The exercise of outstanding stock options and warrants may result in further dilution of your investment. See "Dilution" in this prospectus for a more detailed illustration of the dilution you would incur if you participate in this offering.

### **You may experience future dilution as a result of future equity offerings.**

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by any investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by any investors in this offering.

### **We do not intend to pay dividends in the foreseeable future.**

We have never paid cash dividends on our common stock. We currently intend to retain our future earnings, if any, to finance the operation and growth of our business and currently do not plan to pay any cash dividends in the foreseeable future. As a result, only appreciation of the price of our common stock will provide a return to stockholders for the foreseeable future.

**Sales of a significant number of shares of our common stock in the public markets, or the perception that such sales could occur, could depress the market price of our common stock.**

Sales of a substantial number of shares of our common stock in the public markets, or the perception that such sales could occur, could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. We have agreed, without the prior written consent of Cantor Fitzgerald & Co. and subject to certain exceptions set forth in the sales agreement, not to sell or otherwise dispose of any common stock or securities convertible into or exchangeable for shares of common stock, warrants or any rights to purchase or acquire common stock during the period beginning on the fifth trading day immediately prior to the delivery of any placement notice delivered by us to Cantor Fitzgerald & Co. and ending on the fifth trading day immediately following the final settlement date with respect to the shares sold pursuant to such notice. We have further agreed, subject to certain exceptions set forth in the sales agreement, not to sell or otherwise dispose of any common stock or securities convertible into or exchangeable for shares of common stock, warrants or any rights to purchase or acquire common stock in any other “at the market offering” or continuous equity transaction prior to the termination of the sales agreement with Cantor Fitzgerald & Co. Therefore, it is possible that we could issue and sell additional shares of our common stock in the public markets. We cannot predict the effect that future sales of our common stock would have on the market price of our common stock.

## USE OF PROCEEDS

We intend to use the net proceeds from the sale of any shares of common stock offered under this prospectus for general corporate purposes. Although we have not yet identified specific uses for these proceeds, we currently anticipate using the proceeds for some or all of the following purposes:

- research and development expenses;
- potential acquisitions of companies or businesses;
- potential acquisitions or licensing of intangible assets;
- repayment and refinancing of debt;
- working capital; and
- capital expenditures.

The amounts and timing of our use of the net proceeds from the sale of our common stock in this offering will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any collaborative or strategic partnering efforts, and the competitive environment for our planned products. Accordingly, our management will have broad discretion in the timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments and U.S. government securities.

## DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share and the as adjusted net tangible book value per share of our common stock after this offering.

Our net tangible book value as of December 31, 2016 was approximately \$368.1 million, or \$2.69 per share. We calculate net tangible book value per share by dividing the net tangible book value, which is tangible assets less total liabilities, by the number of outstanding shares of our common stock. Dilution represents the difference between the portion of the amount per share paid by purchasers of shares in this offering and the as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering.

After giving effect to the assumed sale by us of shares of our common stock in the aggregate amount of \$75.0 million in this offering at an assumed offering price of \$4.20 per share, which was the last reported sale price of our common stock on the NASDAQ Global Select Market on February 22, 2017, and after deducting commissions and estimated aggregate offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2016 would have been approximately \$440.7 million, or \$2.85 per share of common stock. This represents an immediate increase in net tangible book value per share of \$0.16 to our existing stockholders and an immediate dilution in net tangible book value per share of \$1.35 to new investors purchasing common stock in this offering. The following table illustrates this dilution on a per share basis to new investors participating in this offering.

Assumed offering price per share		\$4.20
Net tangible book value per share as of December 31, 2016	\$2.69	
Increase in as adjusted net tangible book value per share attributable to new investors purchasing shares in this offering	<u>\$0.16</u>	
As adjusted net tangible book value per share after giving effect to this offering		\$2.85
Dilution per share to new investors in this offering		<u>\$1.35</u>

The table above assumes, for illustrative purposes, that an aggregate of 17,857,142 shares of our common stock are sold at a price of \$4.20 per share, the last reported sale price of our common stock on the NASDAQ Global Select Market on February 22, 2017, for aggregate gross proceeds of \$75.0 million. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$4.20 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$75.0 million during the term of the sales agreement with Cantor Fitzgerald & Co. is sold at that price, would increase our as adjusted net tangible book value per share after the offering to \$2.92 per share and would increase the dilution in net tangible book value per share to new investors to \$2.28 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$4.20 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$75.0 million during the term of the sales agreement with Cantor Fitzgerald & Co. is sold at that price, would decrease our as adjusted net tangible book value per share after the offering to \$2.75 per share and would decrease the dilution in net tangible book value per share to new investors to \$0.45 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only and may differ based on the actual offering price and the actual number of shares offered.

The above discussion and table are based on 136,721,929 shares of our common stock outstanding as of December 31, 2016 and exclude:

- 10,394,351 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2016, at a weighted average exercise price of \$7.04 per share;
- 6,838,931 shares of our common stock reserved for future issuance as of December 31, 2016 under our 2015 Stock Incentive Plan;

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- 1,665,307 shares of our common stock reserved for future issuance as of December 31, 2016 under our 2006 Employee Stock Purchase Plan, as amended; and
- 2,832,612 shares of our common stock issuable upon the exercise of warrants outstanding as of December 31, 2016, at a weighted average exercise price of \$3.12 per share.

To the extent that options or warrants are exercised, investors purchasing shares in this offering could experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or equity-based securities, the issuance of these securities could result in further dilution to our stockholders.

## PLAN OF DISTRIBUTION

We have entered into a Controlled Equity Offering SM sales agreement with Cantor Fitzgerald & Co., or Cantor, under which we may issue and sell shares of our common stock having an aggregate gross sales price of up to \$75.0 million from time to time through Cantor acting as agent. Sales of the shares of common stock, if any, may be made on The NASDAQ Global Select Market at market prices and such other sales as agreed upon by us and Cantor. The sales agreement has been filed as an exhibit to our registration statement on Form S-3 of which this prospectus forms a part.

Upon delivery of a placement notice and subject to the terms and conditions of the sales agreement, Cantor may offer and sell shares of our common stock by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act. We may instruct Cantor not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time. We or Cantor may suspend or terminate the offering of our common stock upon notice and subject to other conditions.

We will pay Cantor commissions, in cash, for its services in acting as agent in the sale of our common stock. Cantor will be entitled to compensation at a commission rate of up to 3.0% of the aggregate gross proceeds from each sale of our common stock. Because there is no minimum offering amount required as a condition to this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have also agreed, under certain circumstances, to reimburse a portion of Cantor’s expenses, including legal fees, in connection with this offering up to a maximum of \$50,000. We estimate that the total expenses for the offering, excluding commissions and expense reimbursement payable to Cantor under the terms of the sales agreement, will be approximately \$176,000.

Settlement for sales of shares of our common stock will occur on the third business day that is also a trading day following the date on which any sales are made, or on some other date that is agreed upon by us and Cantor in connection with a particular transaction, in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement. Sales of our common stock as contemplated in this prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and Cantor may agree upon.

Cantor will act as sales agent and use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Global Select Market. In connection with the sale of the common stock on our behalf, Cantor will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Cantor will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to Cantor against certain civil liabilities, including liabilities under the Securities Act.

The offering of shares of our common stock pursuant to the sales agreement will terminate upon the termination of the sales agreement as permitted therein. We and Cantor may each terminate the sales agreement at any time upon ten days’ prior notice.

Cantor and its affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, Cantor will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus.

This prospectus in electronic format may be made available on a website maintained by Cantor and Cantor may distribute this prospectus electronically.

## **LEGAL MATTERS**

The validity of the issuance of the common stock offered by this prospectus will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York. Cantor Fitzgerald & Co. is being represented in connection with this offering by Cooley LLP, New York, New York.

## **EXPERTS**

The financial statements and management's assessment of the effectiveness of 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, 2016 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.



## **Achillion Pharmaceuticals, Inc.**

**Up to \$75,000,000  
Common Stock**

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**PROSPECTUS**

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, 2017

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**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution**

Set forth below are estimates (except in the case of the SEC registration fee) of the amount of fees and expenses to be incurred in connection with the issuance and distribution of the offered securities, other than underwriting discounts and commissions.

<u>Description</u>	<u>Amount</u>
SEC registration fee	\$38,065
Accounting fees and expenses	*
Printing and engraving fees	*
Legal fees and expenses	*
Transfer agent's fees and expenses	*
Miscellaneous expenses	*
Total Expenses	*

\* These fees are calculated based on the securities offered and the number of issuances and, accordingly, cannot be estimated at this time.

**Item 15. Indemnification of Directors and Officers**

Section 145 of the General Corporation Law of the State of Delaware ("DGCL") provides, generally, that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (except actions by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation against all expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. A corporation may similarly indemnify such person for expenses actually and reasonably incurred by such person in connection with the defense or settlement of any action or suit by or in the right of the corporation, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in the case of claims, issues and matters as to which such person shall have been adjudged liable to the corporation, provided that a court shall have determined, upon application, that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

Section 102(b)(7) of the DGCL provides, generally, that the certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its shareholders for monetary damages for breach of fiduciary duty as a director, provided that such provision may not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its shareholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit. No such provision may eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision became effective.

The Registrant's certificate of incorporation provides that it will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Registrant) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the Registrant, or is or was serving, or has agreed to serve, at the request of the Registrant, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to

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have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by or on behalf of the Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if the Indemnitee acted in good faith and in a manner which the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Registrant, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, will not, of itself, create a presumption that the Indemnitee did not act in good faith and in a manner which the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Registrant, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

The Registrant's certificate of incorporation also provides that the Registrant will indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Registrant to procure a judgment in its favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer of the Registrant, or is or was serving, or has agreed to serve, at the request of the Registrant, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred by or on behalf of the Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Registrant, except that no indemnification will be made in respect of any claim, issue or matter as to which the Indemnitee shall have been adjudged to be liable to the Registrant, unless, and only to the extent, that the Court of Chancery of Delaware determines upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware deems proper.

Notwithstanding the foregoing, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to above, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, such Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of the Indemnitee in connection therewith. Without limiting the foregoing, if any action, suit or proceeding is disposed of, on the merits or otherwise (including a disposition without prejudice), without (i) the disposition being adverse to the Indemnitee, (ii) an adjudication that the Indemnitee was liable to the Registrant, (iii) a plea of guilty or nolo contendere by the Indemnitee, (iv) an adjudication that the Indemnitee did not act in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Registrant, and (v) with respect to any criminal proceeding, an adjudication that the Indemnitee had reasonable cause to believe his conduct was unlawful, the Indemnitee will be considered for to have been wholly successful with respect to such action, suit or proceeding.

The Registrant maintains a general liability insurance policy which covers certain liabilities of its directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

**Item 16. Exhibits**

The exhibits to this Registration Statement are listed in the exhibit index, which appears elsewhere herein and is incorporated herein by reference.

**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, as amended (the "Securities Act");

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- (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 Securities and Exchange Commission (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; and
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this 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, as amended (the “Exchange Act”), 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 this registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act, 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 to any purchaser:
  - (i) 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
  - (ii) 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 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 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.
- (5) That, for the purpose of determining liability of the Registrant under the Securities Act 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

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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, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) 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) That, for purposes of determining any liability under the Securities Act:
- (i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the 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 the registration statement as of the time it was declared effective; and
  - (ii) 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 securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (8) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the indemnification provisions described herein, 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.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 New Haven, State of Connecticut, on February 23, 2017.

ACHILLION PHARMACEUTICALS, INC.

By: /s/ Milind S. Deshpande, Ph.D.  
Milind S. Deshpande, Ph.D.  
President and Chief Executive Officer

**SIGNATURES AND POWER OF ATTORNEY**

We, the undersigned officers and directors of Achillion Pharmaceuticals, Inc., hereby severally constitute and appoint Milind S. Deshpande, Ph.D. and Mary Kay Fenton and each of them singly, our true and lawful attorneys with full power to any of them, and to each of them singly, to sign for us and in our names in the capacities indicated below the registration statement on Form S-3 filed herewith and any and all pre-effective and post-effective amendments to said registration statement and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same with all exhibits thereto, and the other documents in connection therewith, with the Securities and Exchange Commission, and generally to do all such things in our name and behalf in our capacities as officers and directors to enable Achillion Pharmaceuticals, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Milind S. Deshpande, Ph.D.</u> Milind S. Deshpande, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	February 23, 2017
<u>/s/ Mary Kay Fenton</u> Mary Kay Fenton	Executive Vice President and Chief Financial Officer (Principal Financial Officer and Accounting Officer)	February 23, 2017
<u>/s/ David I. Scheer</u> David I. Scheer	Chairman of the Board	February 23, 2017
<u>/s/ Jason S. Fisherman, M.D.</u> Jason S. Fisherman, M.D.	Director	February 23, 2017
<u>/s/ Gary E. Frashier</u> Gary E. Frashier	Director	February 23, 2017
<u>/s/ Kurt Graves</u> Kurt Graves	Director	February 23, 2017
<u>/s/ Michael D. Kishbauch</u> Michael D. Kishbauch	Director	February 23, 2017
<u>/s/ Robert L. Van Nostrand</u> Robert L. Van Nostrand	Director	February 23, 2017
<u>/s/ Frank Verwiel, M.D.</u> Frank Verwiel, M.D.	Director	February 23, 2017
<u>/s/ Nicole Vitullo</u> Nicole Vitullo	Director	February 23, 2017

**EXHIBIT INDEX**

<b><u>Exhibit Number</u></b>	<b><u>Description</u></b>
1.1*	Form of Underwriting Agreement.
1.2	Controlled Equity Offering SM Sales Agreement dated February 23, 2017 by and between the Registrant and Cantor Fitzgerald & Co. (previously filed as exhibit 10.27 to the Registrant's annual report on Form 10-K filed with the SEC on February 23, 2017 (File No. 001-33095) and incorporated herein by reference)
3.1	Amended and Restated Certificate of Incorporation of the Registrant, as amended (previously filed as exhibit 3.1 to the Registrant's annual report on Form 10-K filed with the SEC on March 8, 2012 (File No. 001-33095) and incorporated herein by reference).
3.2	Amended and Restated By-laws of the Registrant (previously filed as exhibit 3.2 to the Registrant's annual report on Form 10-K filed with the SEC on March 29, 2007 (File No. 001-33095) and incorporated herein by reference).
4.1	Specimen Common Stock Certificate (previously filed as exhibit 4.1 to the Registrant's Registration Statement on Form S-1/A filed with the SEC on September 22, 2006 (File No. 333-132921) and incorporated herein by reference).
4.2*	Form of Warrant Agreement.
4.3*	Form of Unit Agreement.
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant.
12.1	Computation of Ratio of Combined Fixed Charges and Preference Dividends to Earnings.
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
23.2	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).

\* To be filed by amendment or as an exhibit to a Current Report on Form 8-K.

February 23, 2017

Achillion Pharmaceuticals, Inc.  
300 George Street  
New Haven, Connecticut 06511

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

This opinion is furnished to you in connection with the Registration Statement on Form S-3 (the "Registration Statement") filed by Achillion Pharmaceuticals, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") for the purpose of registering with the Commission under the Securities Act of 1933, as amended (the "Securities Act"), the following securities of the Company (the "Securities"):

1. common stock, par value \$0.001 per share (the "Common Stock");
2. preferred stock, par value \$0.01 per share (the "Preferred Stock");
3. warrants to purchase Common Stock or Preferred Stock (the "Warrants"); and
4. units consisting of any combination of the foregoing (the "Units");

all of which may be issued from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act as set forth in the Registration Statement, the base prospectus contained therein (the "Prospectus") and any amendments or supplements thereto at an aggregate initial offering price not to exceed \$250,000,000. In addition to the foregoing, there are being registered under the Registration Statement 18,367,346 shares of Common Stock (the "Selling Stockholder Shares") that may be sold by a certain stockholder of the Company (the "Selling Stockholder") from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act.

We are acting as counsel for the Company in connection with the registration for sale of the Securities, including in connection with an offering of shares of Common Stock as set forth in the Registration Statement and the sales agreement prospectus contained therein (the "Sales Agreement Prospectus") having an aggregate offering price of up to \$75,000,000 of shares of Common Stock that may be issued and sold (the "Sales Agreement Shares") under a Controlled Equity Offering SM Sales Agreement, dated February 23, 2017, between the Company and Cantor Fitzgerald & Co. (the "Sales Agreement"). We are acting as counsel for the Company in connection with the registration for resale by the Selling Stockholder of the Selling Stockholder Shares.

Wilmer Cutler Pickering Hale and Dorr LLP, 7 World Trade Center, 250 Greenwich Street, New York, New York 10007  
Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Oxford Palo Alto Washington

The preferences, limitations and relative rights of shares of any series of Preferred Stock will be set forth in a Certificate of Designation (a "Certificate of Designation") with respect thereto. Any Warrants will be issued pursuant to a warrant agreement (the "Warrant Agreement") between the Company and a bank or trust company as warrant agent. Any Units will be issued pursuant to a unit agreement (the "Unit Agreement") between the Company and a bank or trust company as unit agent.

We have examined and relied upon signed copies of the Registration Statement as filed with the Commission, including the exhibits thereto. We have also examined and relied upon the Sales Agreement, the Certificate of Incorporation of the Company (as amended or restated from time to time, the "Certificate of Incorporation"), the By-laws of the Company (as amended or restated from time to time, the "By-laws") and minutes of meetings of the stockholders and the Board of Directors of the Company as provided to us by the Company.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal capacity of all signatories to such documents.

We have relied as to certain matters on information obtained from public officials and officers of the Company, and we have assumed that (i) other than for the Sales Agreement Shares, one or more prospectus supplements will have been prepared and filed with the Commission describing the Securities offered thereby; (ii) all Securities will be issued and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement, the Prospectus, the Sales Agreement Prospectus and any applicable prospectus supplement; (iii) any Warrant Agreement will be duly authorized, executed and delivered by all parties thereto other than the Company; (iv) any Unit Agreement will be duly authorized, executed and delivered by all parties thereto other than the Company; (v) other than for the Sales Agreement Shares, a definitive purchase, underwriting or similar agreement with respect to any Securities offered will be duly authorized, executed and delivered by all parties thereto other than the Company; (vi) any Securities issuable upon conversion, exchange or exercise of any Security being offered will be duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange or exercise; (vii) with respect to shares of Common Stock or Preferred Stock offered, there will be sufficient shares of Common Stock or Preferred Stock authorized under the Certificate of Incorporation and not otherwise reserved for issuance; and (viii) the Company will be validly existing as a corporation and in good standing under the laws of the State of Delaware.

We are expressing no opinion herein as to the application of any federal or state law or regulation to the power, authority or competence of any party to any agreement with respect to any of the Securities other than the Company. We have assumed that such agreements are, or will be, the valid and binding obligations of each party thereto other than the Company, and enforceable against each such other party in accordance with their respective terms.

Achillion Pharmaceuticals, Inc.

February 23, 2017

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We have assumed for purposes of our opinions below that no authorization, approval or other action by, and no notice to or filing with, any governmental authority or regulatory body or any other third party is required for the due execution, delivery or performance by the Company or, if any such authorization, approval, consent, action, notice or filing is required, it will have been duly obtained, taken, given or made and will be in full force and effect. We have also assumed that the execution and delivery by the Company of the Warrant Agreement, the Unit Agreement and the Securities and the performance by the Company of its obligations thereunder do not and will not violate, conflict with or constitute a default under (i) any agreement or instrument to which the Company or any of its properties is subject, (ii) any law, rule, or regulation to which the Company or any of its properties is subject or (iii) any judicial or regulatory order or decree of any governmental authority.

We have also assumed that there will not have occurred, prior to the date of issuance of the Securities, any change in law affecting the validity or enforceability of such Securities and that at the time of the issuance and sale of the Securities, the Board of Directors of the Company (or any committee thereof acting pursuant to authority properly delegated to such committee by the Board of Directors) shall not have taken any action to rescind or otherwise reduce its prior authorization of the issuance of the Securities.

Our opinion in paragraph 6 below, insofar as it relates to the Selling Stockholder Shares being fully paid, is based solely on an officer's certificate of the Company confirming the Company's receipt of the consideration called for by the applicable resolutions authorizing the issuance of such shares.

Our opinions below are qualified to the extent that they may be subject to or affected by (i) applicable bankruptcy, insolvency, reorganization, moratorium, usury, fraudulent conveyance or similar laws relating to or affecting the rights or remedies of creditors generally, (ii) duties and standards imposed on creditors and parties to contracts, including, without limitation, requirements of materiality, good faith, reasonableness and fair dealing and (iii) general equitable principles. Furthermore, we express no opinion as to the availability of any equitable or specific remedy upon any breach of any of the agreements as to which we are opining herein, or any of the agreements, documents or obligations referred to therein, or to the successful assertion of any equitable defenses, inasmuch as the availability of such remedies or the success of any equitable defenses may be subject to the discretion of a court. We express no opinion herein as to the laws of any state or jurisdiction other than the state laws of the State of New York, the General Corporation Law of the State of Delaware and the federal laws of the United States of America. We also express no opinion herein with respect to compliance by the Company with the securities or "blue sky" laws of any state or other jurisdiction of the United States or of any foreign jurisdiction. In addition, we express no opinion and make no statement herein with respect to the antifraud laws of any jurisdiction.

Achillion Pharmaceuticals, Inc.

February 23, 2017

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We also express no opinion herein as to any provision of any agreement (i) that may be deemed to or construed to waive any right of the Company, (ii) to the effect that rights and remedies are not exclusive, that every right or remedy is cumulative and may be exercised in addition to or with any other right or remedy and does not preclude recourse to one or more other rights or remedies, (iii) relating to the effect of invalidity or unenforceability of any provision of any agreement on the validity or enforceability of any other provision thereof, (iv) that is in violation of public policy, (v) relating to indemnification and contribution with respect to securities law matters, (vi) which provides that the terms of any agreement may not be waived or modified except in writing, (vii) purporting to indemnify any person against his, her or its own negligence or intentional misconduct, (viii) requiring the payment of penalties, consequential damages or liquidated damages or (ix) relating to choice of law or consent to jurisdiction.

Based upon and subject to the foregoing, we are of the opinion that:

1. With respect to the Common Stock (other than the Sales Agreement Shares), when (i) specifically authorized for issuance by proper action of the Board of Directors of the Company or an authorized committee thereof (the "Authorizing Resolutions"), (ii) the Registration Statement has become effective under the Securities Act, (iii) the terms of the issuance and sale of the Common Stock have been duly established in conformity with the Certificate of Incorporation and By-laws, (iv) the shares of Common Stock have been issued and sold as contemplated by the Registration Statement, the Prospectus and the applicable prospectus supplement and (v) the Company has received the consideration provided for in the Authorizing Resolutions and such consideration per share is not less than the par value per share of the Common Stock, the Common Stock will be validly issued, fully paid and nonassessable.
2. With respect to shares of any series of the Preferred Stock, when (i) the Authorizing Resolutions have specifically authorized the issuance and terms of the shares of the series, the terms of the offering thereof and related matters, including resolutions establishing and designating the series and fixing and determining the preferences, limitations and relative rights thereof and the filing of a Certificate of Designation with respect to the series with the Secretary of State of the State of Delaware, and such Certificate of Designation has been duly filed, (ii) the Registration Statement has become effective under the Securities Act, (iii) the terms of the issuance and sale of the series of Preferred Stock have been duly established in conformity with the Certificate of Incorporation and By-laws, (iv) the shares of the series of Preferred Stock have been issued and sold as

contemplated by the Registration Statement, the Prospectus and the applicable prospectus supplement and (v) the Company has received the consideration provided for in the Authorizing Resolutions and such consideration per share is not less than the par value per share of the Preferred Stock, the shares of such series of Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to the Warrants, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement has become effective under the Securities Act, (iii) the applicable Warrant Agreement relating to the Warrants has been duly authorized, executed and delivered, (iv) the terms of the Warrants and of their issuance and sale have been duly established in conformity with the applicable Warrant Agreement and the Authorizing Resolutions, (v) the Warrants have been duly executed and delivered in accordance with the applicable Warrant Agreement and issued and sold as contemplated by the Registration Statement, the Prospectus and the applicable prospectus supplement and (vi) the Company has received the consideration provided for in the Authorizing Resolutions, such Warrants will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.
4. With respect to the Units, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement has become effective under the Securities Act, (iii) the applicable Unit Agreement relating to the Units has been duly authorized, executed and delivered, (iv) the terms of the Units and of their issuance and sale have been duly established in conformity with the applicable Unit Agreement and the Authorizing Resolutions, (v) the Units have been duly executed and delivered in accordance with the applicable Unit Agreement and issued and sold as contemplated by the Registration Statement, the Prospectus and the applicable prospectus supplement and (vi) the Company has received the consideration provided for in the Authorizing Resolutions, such Units will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.
5. With respect to the Sales Agreement Shares, such Sales Agreement Shares have been duly authorized for issuance and, when (i) the Registration Statement has become effective under the Securities Act, and (ii) when the Sales Agreement Shares have been issued and paid for in accordance with the terms and conditions of the Sales Agreement, the Sales Agreement Shares will be validly issued, fully paid and non-assessable.

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6. The Selling Stockholder Shares have been duly authorized and are validly issued, fully paid and nonassessable.

It is understood that this opinion is to be used only in connection with the offer and sale of the Securities and the Selling Stockholder Shares while the Registration Statement is in effect.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b) (5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus, Sales Agreement Prospectus and in any prospectus supplement under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

WILMER CUTLER PICKERING  
HALE AND DORR LLP

By: /s/ Steven D. Singer

Steven D. Singer, a Partner

## Ratio of Combined Fixed Charges and Preference Dividends to Earnings

	Year Ended December 31,				
	2016	2015	2014	2013	2012
<b>Earnings:</b>					
Loss from Operations before income taxes	(\$ 61,706)	(\$ 5,030)	(\$ 69,008)	(\$ 58,947)	(\$ 47,127)
<b>Add:</b>					
Interest portion of rental expense (1)	\$ 264	\$ 208	\$ 204	\$ 204	\$ 204
Interest expensed and capitalized	60	50	45	44	62
Amortized premiums related to indebtedness	—	—	—	—	—
Amortization of capitalized interest	9	5	1	8	6
<b>Less:</b>					
Interest Capitalized	(13)	—	(10)	—	(5)
<b>Total Earnings</b>	<u>\$ (61,386)</u>	<u>\$ (4,767)</u>	<u>\$ (68,768)</u>	<u>\$ (58,691)</u>	<u>\$ (46,860)</u>
<b>Fixed Charges and Preference Dividends:</b>					
Interest portion of rental expense (1)	\$ 264	\$ 208	\$ 204	\$ 204	\$ 204
Interest expensed and capitalized	60	50	45	44	62
Amortized premiums related to indebtedness	—	—	—	—	—
<b>Total Fixed Charges</b>	<u>\$ 324</u>	<u>\$ 258</u>	<u>\$ 249</u>	<u>\$ 248</u>	<u>\$ 266</u>
Ratio of earnings to fixed charges and preference dividends	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>
Coverage deficiency (2)	<u>\$ (61,710)</u>	<u>\$ (5,025)</u>	<u>\$ (69,017)</u>	<u>\$ 58,939</u>	<u>\$ (47,126)</u>

(1) Computation of interest factor of rent expense

Operating rental expense	\$ 801	\$ 629	\$ 617	\$ 617	\$ 617
Interest factor (*)	33%	33%	33%	33%	33%
<b>Total</b>	<u>\$ 264</u>	<u>\$ 208</u>	<u>\$ 204</u>	<u>\$ 204</u>	<u>\$ 204</u>

\* Calculated as 33% of rent expense, which management believes is a reasonable approximation of the interest factor.

(2) In each of the years presented, we incurred losses from operations and as a result our earnings were insufficient to cover over fixed charges. The amount shown represents the amount of the coverage deficiency in each such period

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 February 23, 2017 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in Achillion Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP  
Hartford, Connecticut  
February 23, 2017