

Aimmune Therapeutics, Inc.
Form 424B5
February 20, 2018
Table of Contents

**Filed pursuant to Rule 424(b)(5)
Registration Statement No. 333-222333**

The information in this preliminary prospectus supplement and the accompanying base prospectus is not complete and may be changed. A registration statement relating to these securities has become effective under the Securities Act of 1933, as amended. This preliminary prospectus supplement and the accompanying base prospectus are not an offer to sell these securities and are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated February 20, 2018.

Preliminary Prospectus Supplement

(To Prospectus dated December 28, 2017)

\$150,000,000

Common Stock

We are offering \$150,000,000 of shares of our common stock.

Our common stock is listed on The Nasdaq Global Select Market under the symbol **AIMT**. The last reported sale price of our common stock on February 16, 2018 was \$37.20 per share.

Nestlé Health Science US Holdings, Inc., one of our existing holders of greater than 5% of our common stock and an affiliate of one of our directors, has indicated an interest in purchasing up to \$30.0 million of shares of the common stock offered hereby at the price offered to the public. However, because indications of interest are not binding agreements or commitments to purchase, such affiliate may determine to purchase fewer shares than it has indicated an interest in purchasing or not to purchase any shares in this offering. In addition, the underwriters may elect to sell fewer shares or not to sell any shares in this offering to such existing holder.

Investing in our common stock involves a high degree of risk. Before making an investment decision, please read the information under the heading Risk Factors beginning on page S-9 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$
Proceeds, before expenses, to us	\$	\$

(1) See Underwriting for additional disclosure regarding underwriting compensation and estimated offering expenses.

We expect to grant the underwriters an option for a period of 30 days to purchase up to an additional \$22.5 million of shares of our common stock.

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

The underwriters expect to deliver the shares of common stock to purchasers on or about , 2018.

BofA Merrill Lynch

Cantor

Piper Jaffray

Credit Suisse

February , 2018

RBC Capital Markets

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-1
<u>FORWARD-LOOKING STATEMENTS</u>	S-2
<u>PROSPECTUS SUPPLEMENT SUMMARY</u>	S-3
<u>THE OFFERING</u>	S-7
<u>SUMMARY CONSOLIDATED FINANCIAL DATA</u>	S-8
<u>RISK FACTORS</u>	S-9
<u>USE OF PROCEEDS</u>	S-14
<u>CAPITALIZATION</u>	S-15
<u>DILUTION</u>	S-16
<u>PRICE RANGE OF COMMON STOCK</u>	S-17
<u>DIVIDEND POLICY</u>	S-17
<u>MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS</u>	S-18
<u>UNDERWRITING</u>	S-21
<u>LEGAL MATTERS</u>	S-27
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	S-28

Prospectus

<u>About This Prospectus</u>	1
<u>Where You Can Find More Information: Incorporation By Reference</u>	2
<u>About Aimmune</u>	4
<u>Risk Factors</u>	5
<u>Use of Proceeds</u>	6
<u>Ratio of Earnings to Fixed Charges and Preference Dividends</u>	7
<u>Description of Capital Stock</u>	8
<u>Description of Debt Securities</u>	13
<u>Description of Other Securities</u>	21
<u>Global Securities</u>	22
<u>Plan of Distribution</u>	26
<u>Legal Matters</u>	27
<u>Experts</u>	27

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to both documents combined. If information in this prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. However, 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 in this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

We have not authorized anyone to provide you with any information or to make any representation, other than those contained or incorporated by reference in this prospectus supplement or in any free writing prospectus we have prepared. We take no responsibility for, and provide no assurance as to the reliability of, any other information that others may give you. Neither we or the underwriters are making an offer to sell or soliciting an offer to buy our securities in any jurisdiction where 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 supplement, the accompanying base prospectus, the documents incorporated by reference into this prospectus, and in any free writing prospectus that we may authorize 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 supplement, the accompanying base prospectus, the documents incorporated by reference into this prospectus, and any free writing prospectus that we may authorize 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 section of this prospectus supplement entitled “Where You Can Find More Information.”

We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying base prospectus and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying base prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement and the accompanying base prospectus outside the United States. This prospectus supplement and the accompanying base prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and accompanying base prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

When we refer to Aimmune, we, our, us and the Company in this prospectus supplement, we mean Aimmune Therapeutics, Inc., and our consolidated subsidiaries unless otherwise specified. When we refer to you, we mean prospective investors in the Company.

AimmuneTM and the Aimmune logo are some of our trademarks used in this prospectus supplement. This prospectus supplement also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, our trademarks and tradenames referred to in this prospectus supplement appear without the ® and symbol, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

S-1

Table of Contents

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying base prospectus, the documents incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering contain forward-looking statements concerning our business, operations and financial performance and condition, as well as our plans, objectives and expectations for our business, operations and financial performance and condition. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as aim, anticipate, assume, believe, contemplate, could, due, estimate, expect, goal, intend, may, objective, plan, predict, potential, positioned, would, and other similar expressions that are predictions or indicate future events and future trends, or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

our expectations and beliefs regarding the potential benefits of our product candidates and platform technology;

the timing or likelihood of regulatory filings and approvals for AR101 and our additional product candidates;

the timing of the completion of our ongoing clinical trials of AR101 and the timing and availability of clinical data from such clinical trials;

clinical and regulatory development plans with respect to AR101 and our additional product candidates;

our expectations regarding the potential market size and the size of the patient populations for AR101 and our additional product candidates, if approved for commercial use;

our ability to commercialize AR101 and our additional product candidates;

the pricing and reimbursement of AR101 and our additional product candidates, if approved;

our commercialization, marketing and manufacturing capabilities;

timing of commencement of future clinical trials and research and development programs;

our ability to develop, acquire and advance product candidates into, and successfully complete, clinical trials;

the implementation of our business model and strategic plans for our business, product candidates and technology;

our intention and our ability to establish additional collaboration partnerships;

the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates, including the projected terms of patent protection;

estimates of our expenses, future revenue, capital requirements, our needs for additional financing and our ability to obtain additional capital;

our anticipated use of proceeds from this offering;

our financial performance;

developments and projections relating to our competitors and our industry, including competing therapies; and

other risks and uncertainties, including those listed under the caption Risk Factors.

These forward-looking statements are based on management's current expectations, estimates, forecasts, and projections about our business and the industry in which we operate and involve known and unknown risks, uncertainties, and other factors that are in some cases beyond our control. As a result, any or all of our forward-looking statements in this prospectus may turn out to be inaccurate. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under Risk Factors and elsewhere in this prospectus. Potential investors are urged to consider these factors carefully in evaluating the forward-looking statements. These forward-looking statements speak only as of the date hereof and as of the dates indicated in these statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future. Given these risks and uncertainties, you are cautioned not to rely on such forward-looking statements as predictions of future events. You should, however, review the factors and risks we describe in the reports we will file from time to time with the SEC after the date of this prospectus. See Where You Can Find More Information.

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary provides a general overview of selected information and does not contain all of the information you should consider before buying our common stock. Therefore, you should read the entire prospectus supplement, accompanying base prospectus and any free writing prospectus that we have authorized for use in connection with this offering carefully, including the information incorporated by reference, before deciding to invest in our common stock. Investors should carefully consider the information set forth under Risk Factors beginning on page S-9 and incorporated by reference to our Annual Report on Form 10-K for the year ended December 31, 2017, or our 2017 Annual Report.

Overview

We are a clinical-stage biopharmaceutical company advancing a new therapeutic approach, including the development of proprietary product candidates, for the treatment of peanut and other food allergies. It is estimated that over 30 million people in the United States and Europe have a food allergy, with peanut allergy being the most prevalent and most commonly associated with severe outcomes and life-threatening events. There are currently no approved medical therapies to cure food allergies or prevent their symptoms. Patients with food allergies are typically counseled to practice strict dietary avoidance. When accidental exposure to food allergens invokes a serious allergic reaction, rescue therapies, such as antihistamines or injectable epinephrine, are the only recourse available. Our therapeutic approach, which we refer to as Characterized Oral Desensitization ImmunoTherapy, or CODIT™, is designed to desensitize patients to food allergens and thereby reduce the risk of having an allergic reaction upon accidental exposure, or reduce symptom severity should an allergic reaction occur. CODIT is intended to reduce meaningfully the burden and anxiety experienced by food-allergic patients and their families.

Our lead CODIT product candidate, AR101, is an investigational biologic for the treatment of patients with peanut allergy, which affects approximately three million patients in the United States and three million patients in Europe. AR101 has received Fast Track and Breakthrough Therapy Designations for the treatment of patients 4-17 years of age from the United States Food and Drug Administration, or FDA. Our initial target patient population is children and adolescents in the 4-17 age group, which we estimate will reach approximately 1.6 million patients in the United States alone during 2018.

In late 2015, we initiated a Phase 3 efficacy trial of AR101 in the United States, Canada and Europe, which we refer to as the PALISADE (Peanut Allergy Oral Immunotherapy Study of AR101 for Desensitization in Children and Adults) trial. We completed global enrollment of 554 patients between the ages of 4 and 49 in November 2016 and completed the final study for the PALISADE trial in December 2017. Patient demographics were generally balanced among patients ages 4-17 enrolled in the AR101 treatment arm as compared to those from the same age group enrolled in the placebo treatment arm.

After approximately one year of treatment, patients completed an exit double-blind, placebo-controlled food challenge (DBPCFC). Efficacy results for Intent-to-Treat, or ITT, group and for patients ages 4-17 who completed the AR101 treatment arm of the study, or Completers, are summarized in the charts below.

S-3

Table of Contents

A total of 496 patients ages 4–17, from both arms (372 AR101 and 124 placebo), were evaluable for safety. There were no deaths or suspected, unexpected serious adverse reactions. In both arms, the incidence of serious adverse events (SAEs) was low. An SAE is an adverse event that results in significant medical consequences, such as hospitalization, disability or death, and must be reported to the FDA. A total of 10 patients ages 4–17 experienced SAEs, none of which were considered life-threatening: nine of these patients were in the AR101 arm (2.4%) and one was in the placebo arm (0.8%). Of the nine AR101 patients that experienced an SAE, five patients experienced mild or moderate SAEs. The other four AR101-treated patients experienced severe SAEs, which, for two of these patients, were not related to treatment (a concussion and a viral asthmatic exacerbation). Of the two AR101-treated patients ages 4–17 who experienced severe SAEs related to treatment, both of whom had elevated baseline peanut-specific IgE levels greater than 100 kU/L, one experienced anaphylaxis and the other experienced wheezing on the first day of treatment. Both of these patients discontinued from the study. Of patients ages 4–17, 12.4% of patients from the AR101 treatment arm and 2.4% of patients from the placebo-treatment arm discontinued due to investigator-reported adverse events.

In December 2017, we completed enrollment of 388 eligible patients who had completed PALISADE into a related open-label roll-over trial, which we refer to as the ARC004 trial. In January 2018, we completed enrollment of 506 patients in our real-world experience safety trial of AR101 in the United States and Canada in patients ages 4–17, which we refer to as the RAMSES (Real-World AR101 Market-Supporting Experience Study in Peanut Allergic Children Ages 4–17 Years) trial. In addition, in July 2017, we began enrollment of our European Phase 3 efficacy trial designed with a higher efficacy bar of tolerating 1,000 mg of peanut protein in an exit food-challenge without anything more than mild, transient symptoms, which we refer to as the ARTEMIS (AR101 Trial in Europe Measuring Oral Immunotherapy Success) trial. We expect data from the ARC004 trial in the third quarter of 2018 and from the RAMSES and ARTEMIS trials in the second half of 2018.

We expect to submit a Biologics License Application, or BLA, in the United States in late 2018 and a Marketing Authorization Application, or MAA, with the European Medicines Agency, or EMA, in the first half of 2019. If we complete clinical testing and receive approval of a BLA for AR101 in-line with our current expected timing, we would expect to be able to commence commercial sales of AR101 around the end of 2019.

We maintain worldwide commercial rights to all of our product candidates, including AR101 and, if approved, currently intend to commercialize in the United States and Europe by developing a specialty sales force targeting a subset of the approximately 5,000 practicing allergists in the United States and allergy-focused clinicians in major European markets.

Our Strategy

Our goal is to build a biopharmaceutical company that develops and commercializes proprietary therapies to improve the lives of food-allergic patients and their families. We intend to achieve this goal by pursuing the following key strategic objectives:

Complete development and obtain approval of AR101 in the United States and Europe for the treatment of peanut allergy: We expect data from the ARC004 trial in the third quarter of 2018 and from the RAMSES trial in the second half of 2018. We expect the ARTEMIS trial to be completed by the end of 2018. We intend to file a BLA in the United States in late 2018 and a MAA in the European Union in the first half of 2019.

S-4

Table of Contents

Commercialize AR101 in the United States and Europe through our own specialty sales force: We own worldwide commercial rights to our product candidates. If AR101 is approved for the treatment of peanut allergy, we intend to commercialize it by developing a specialty sales force targeting a subset of the approximately 5,000 practicing allergists in the United States as well as allergy-focused clinicians in the major European markets. We anticipate that this sales force could also support the commercialization of additional CODIT product candidates, if approved.

Leverage the CODIT system to develop additional proprietary product candidates for the treatment of food allergies: Leveraging the expertise we have gained developing AR101, we have and expect to continue to conduct activities to support the filing of an Investigational New Drug, or IND, application for a product candidate for the treatment of egg allergy in 2018 and an IND for a product candidate for the treatment of walnut allergy in 2019.

AR101 Program Overview

Peanut allergy is a life-threatening disease with no approved medical treatment options. Based on a 2014 study published in the Journal of Allergy and Clinical Immunology, 40% to 50% of the people with peanut allergy in the United States are sensitive to an exposure of 100 mg or less of peanut protein, the equivalent of less than half of a peanut kernel (one peanut kernel typically contains approximately 250 mg to 300 mg of peanut protein). In addition, people with peanut allergy are often sensitive to as little as 10 mg of peanut protein. Strict dietary avoidance is hard to achieve and accidental exposure to food allergens is common, resulting in approximately 200,000 emergency room visits per year in the United States. The burden and anxiety for patients and their families is significant and a highly motivating force in seeking out therapy. There is a particularly high unmet need in young children who spend a significant portion of their day away at school where parental control is diminished and in adolescents who face peer pressure from their friends and classmates and may begin to engage in risk-taking behaviors.

Allergists have long used immunotherapy approaches to successfully treat patients with environmental allergies, and academic research supports the potential for extending immunotherapy approaches to treating patients with food allergy. Published studies have shown oral immunotherapy (OIT) to be a potentially promising approach to desensitizing patients with peanut, milk, egg, walnut and other food allergies. This approach involves gradual introduction of increasing amounts of food allergen by the oral route to reduce the immune response to that allergen, referred to as the build-up or up-dosing phase, and then daily ingestion of the target dose of allergen to maintain the achieved level of desensitization, referred to as the maintenance phase. Historically, OIT has been practiced by a small number of allergists using their own home-brew allergen formulations and desensitization protocols; however, no OIT-based products have been approved for the treatment of food allergies to date thereby limiting the widespread adoption of this approach. With CODIT, we believe that we are the first company to undertake systematic and rigorous development of an OIT-based therapeutic approach to treat food allergies. We believe that AR101 has the potential to fulfill the need for a consistent and scalable OIT-based approach to peanut allergy.

In December 2015, we initiated our Phase 3 PALISADE clinical efficacy trial of AR101, and we completed the study in December 2017. In the PALISADE trial, we measured subjects' change in levels of sensitivity to peanut protein using the DBPCFC at the beginning and the end of the approximately 12 months treatment period. A DBPCFC is generally considered the gold standard method of measuring a patient's sensitivity to peanuts or other foods. During the DBPCFC, subjects consume increasing amounts of a peanut protein until either the test is naturally concluded or until a dose-limiting reaction, typically moderate or severe, occurs at which point the subject is not permitted to proceed to the next step in the challenge and the test is halted.

The primary endpoint in PALISADE is different in the U.S. and European portions of the trial. In the United States, the primary efficacy endpoint was the single highest tolerated dose of 600 mg, which corresponds to a cumulative amount of 1,043 mg peanut protein. In addition, we were required to show superiority of AR101 over placebo with a 15% margin. In Europe, the primary efficacy endpoint was the single highest tolerated dose of 1,000 mg, which corresponds to a cumulative amount of 2,043 mg peanut protein, and we were not required to show superiority of AR101 over placebo with a 15% margin. Following discussions with the FDA and the EMA in the first half of 2017, we decided to conduct the primary efficacy analysis for the PALISADE trial in the 4-17 age group, in which we enrolled 498 patients, or 90% of the total number of patients enrolled in the PALISADE trial.

In May 2017, we initiated the RAMSES trial in the United States and Canada, which does not require a DBPCFC and therefore reflects our expectations for the real-world experience with AR101, where a DBPCFC is not required for diagnosis of peanut allergy. In January 2018, we completed enrollment of RAMSES trial. In July 2017, we initiated the ARTEMIS trial in children and adolescents in Europe, which is designed to evaluate a higher efficacy bar of tolerating a cumulative amount of 2,043 mg of peanut protein after nine months of AR101 therapy. We expect that enrollment of the ARTEMIS trial will be completed in the first quarter of 2018.

Based on discussions with the FDA, we anticipate that the safety database for a BLA will need to include data from at least 600 patients ages 4-17 treated with AR101 at the target maintenance dose of 300 mg per day. We expect to fulfill this requirement with patients from ARC001, ARC002, PALISADE, ARC004 and RAMSES. In Europe, we expect that data from PALISADE, ARC004 and ARTEMIS will form the basis for the MAA filing. We intend to file a BLA in the United States in late 2018 and an MAA in the European Union in the first half of 2019. If we complete clinical testing and receive approval of a BLA for AR101 in-line with our current expected timing, we would expect to be able to commence commercial sales of AR101 around the end of 2019.

Table of Contents

Risks Related to Our Business

Our business is subject to numerous risks, as more fully described in the section entitled "Risk Factors" and discussed under the section captioned "Risk Factors" contained in our 2017 Annual Report. These risks include, among others:

We have a limited operating history, have incurred significant losses since our inception and anticipate that we will continue to incur losses for the foreseeable future. We have only one product candidate in clinical trials and no product sales, which, together with our limited operating history, make it difficult to assess our future viability.

We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development, other operations or commercialization efforts.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance.

We are substantially dependent on the success of AR101 which will require additional clinical testing before we can seek regulatory approval and potentially commence commercial sales, and which may not be successful in clinical trials, receive regulatory approval or be successfully commercialized, even if approved.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and we may encounter substantial delays in our clinical trials. Furthermore, results of earlier studies may not be predictive of future studies' results.

In certain of our clinical trials, we utilize an oral food challenge procedure designed to trigger an allergic reaction, which could be severe or life threatening.

The regulatory approval process is lengthy, time-consuming and inherently unpredictable, and we may experience significant delays in obtaining regulatory approval of AR101, if at all, which would delay the commercialization of AR101, adversely impact our ability to generate revenue, and harm our business and our results of operations.

If we do not achieve our projected development and commercialization goals in the timeframes we announce and expect, the commercialization of AR101 or any additional product candidates may be delayed, and our business will be harmed.

Corporate Information

We were founded on June 24, 2011 as a Delaware corporation under the name Allergen Research Corporation. In May 2015, we changed our name to Aimmune Therapeutics, Inc. Our principal executive offices are located at 8000 Marina Blvd, Suite #300, Brisbane, California 94005, and our telephone number is (650) 614-5220. Our website address is <http://www.aimmune.com>. Except as otherwise specifically incorporated by reference in this prospectus supplement and the accompanying base prospectus, information contained in, or accessible through, our website is not a part of this prospectus supplement and the accompanying base prospectus.

S-6

Table of Contents

THE OFFERING

Issuer	Aimmune Therapeutics, Inc.
Common Stock Offered by Us	\$150.0 million of shares of common stock
Underwriters Option to Purchase Additional Shares	We expect to grant the underwriters a 30-day option to purchase up to an additional \$22.5 million of shares of common stock.
Common Stock to be Outstanding After the Offering	55,123,071 shares (55,727,910 shares if the underwriters exercise their option to purchase additional shares in full)
Use of Proceeds	We estimate that the net proceeds from this offering will be approximately \$139.6 million, or approximately \$160.8 million if the underwriters exercise their option to purchase additional shares in full, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use the net proceeds from this offering to fund our ongoing clinical development and additional clinical trials of AR101, regulatory activities related to the potential filing of a Biologics License Application and a Marketing Authorization Application for AR101, preparation for potential commercialization of AR101, research and development of additional CODIT product candidates, and for general corporate purposes. These expectations are subject to change. See **Use of Proceeds** on page S-9 for a more complete description of the intended use of proceeds from this offering.

Risk Factors	See Risk Factors and the other information included or incorporated by reference in this prospectus supplement and the accompanying base prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.
---------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Symbol on The Nasdaq Global Select Market	AIMT
--------------------------------------------------	------

The number of shares of common stock to be outstanding after this offering is based on 51,090,813 shares of common stock outstanding as of December 31, 2017, and excludes the following, in each case as of such date:

6,582,138 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2017 at a weighted-average exercise price of \$14.25 per share;

16,638 shares of common stock issuable upon vesting of restricted stock units outstanding as of December 31, 2017;

4,313,423 shares of common stock reserved for issuance pursuant to future awards under our 2015 Equity Incentive Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan; and

1,314,485 shares of common stock reserved for future issuance under our Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan.

Unless otherwise indicated, the number of shares of our common stock described above assumes no exercise of the underwriters' option to purchase additional shares.

Nestlé Health Science US Holdings, Inc., one of our existing holders of greater than 5% of our common stock and an affiliate of one of our directors, has indicated an interest in purchasing up to \$30.0 million of shares of the common stock offered hereby at the price offered to the public. However, because indications of interest are not binding agreements or commitments to purchase, such affiliate may determine to purchase fewer shares than it has indicated an interest in purchasing or not to purchase any shares in this offering. In addition, the underwriters may elect to sell fewer shares or not to sell any shares in this offering to such existing holder.

S-7

Table of Contents**SUMMARY CONSOLIDATED FINANCIAL DATA**

We derived the summary consolidated financial data for the three years ended December 31, 2015, 2016 and 2017 from our audited financial statements incorporated by reference in this prospectus from our 2017 Annual Report. Historical operating results presented herein are not necessarily indicative of the results that may be expected for any future period. The following information should be read in conjunction with our consolidated financial statements and related notes contained in our 2017 Annual Report, as well as the information under the caption Management's Discussion and Analysis of Financial Condition and Results of Operations appearing in our 2017 Annual Report, which is incorporated by reference herein. For more details on how you can obtain our SEC reports and other information, you should read the section of this prospectus supplement and the accompanying base prospectus entitled Where You Can Find More Information.

	Year Ended December 31,		
	2015	2016	2017
	(in thousands, except per share data)		
Statement of Operations Data:			
Operating expenses:			
Research and development	\$ 19,816	\$ 54,642	\$ 89,325
General and administrative	16,181	26,885	43,949
Total operating expenses	35,997	81,527	133,274
Loss from operations	(35,997)	(81,527)	(133,274)
Interest income, net	181	703	2,005
Loss before provision for income taxes	\$ (35,816)	\$ (80,824)	\$ (131,269)
Provision for income taxes			56
Net Loss	\$ (35,816)	\$ (80,824)	\$ (131,325)
Net loss per share, basic and diluted ⁽¹⁾	\$ (1.88)	\$ (1.89)	\$ (2.61)
Weighted-average shares used in computing net loss			
per share, basic and diluted ⁽¹⁾	19,041	42,751	50,401

(1) See Note 2 to our audited consolidated financial statements included in our 2017 Annual Report incorporated by reference herein for an explanation of the calculations of our basic and diluted net loss per common share. The table below presents our balance sheet data as of December 31, 2017:

on an actual basis; and

on an as adjusted basis to give further effect to the issuance and sale of \$150.0 million of shares of common stock in this offering at an assumed public offering price of \$37.20 per share, which was the last reported sale price of our common stock on February 16, 2018, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	December 31, 2017	
	As	
	adjusted	
	Actual	(unaudited)
	(in thousands)	
Balance Sheet Data:		
Cash, cash equivalents and short-term investments	\$ 182,430	\$ 322,030
Working capital	162,512	302,112
Total assets	206,934	346,534
Accumulated deficit	(265,482)	(265,482)
Total stockholders' equity	177,805	317,405

Table of Contents

RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should consider carefully the risks described below and discussed under the section captioned **Risk Factors** contained in our 2017 Annual Report, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, each of which is incorporated by reference in this prospectus in their entirety, together with other information in this prospectus, and the information and documents incorporated by reference in this prospectus, and any free writing prospectus that we have authorized for use in connection with this offering before you make a decision to invest in our common stock. If any of the following events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose all or part of your investment. The risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business operations.*

Risks Relating to this Offering

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a significant return.

We expect to receive net proceeds of \$139.6 million from this offering, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Our management will have broad discretion over the use of proceeds from this offering. We currently expect to use our existing cash and cash equivalents and the net proceeds from this offering to fund our ongoing clinical development and additional clinical trials of AR101, regulatory activities related to the potential filing of a Biologics License Application and a Marketing Authorization Application for AR101, preparation for potential commercialization of AR101, research and development of additional CODIT product candidates, and for general corporate purposes. However, our management will have considerable discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or enhance the value of our common stock.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares. You will experience further dilution if we issue additional equity securities in the future.

Investors purchasing shares of common stock in this offering will pay a price per share that substantially exceeds the as-adjusted book value per share of our tangible assets after subtracting our liabilities. As a result, investors purchasing shares of common stock in this offering will incur immediate dilution of \$31.44 per share, based on an assumed public offering price of \$37.20 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, and our as-adjusted net tangible book value as of December 31, 2017 after giving effect to this offering. For information on how the foregoing amounts were calculated, see **Dilution**.

This dilution is due to the substantially lower price paid by our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering, and the exercise of stock options granted to our employees. In addition, as of December 31, 2017, we had outstanding 16,638 restricted stock units and options to purchase 6,582,138 shares of our common stock; the vesting of the restricted stock units and the exercise of any of these options or warrants would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation.

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 convertible debt securities, the issuance of these securities could result in further dilution to our stockholders or result in downward pressure on the price of our common stock.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the market price of our common stock could decline. Based upon the number of shares of common stock outstanding as of December 31, 2017, and an assumed offering price per share of \$37.20, the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, upon the closing of this offering we will have outstanding a total of approximately 55,123,071 shares of common stock (assuming no exercise of the underwriters' option to purchase additional shares). Other than any shares held by our directors, officers and certain existing investors, all of these are currently freely tradable, and the shares to be sold in this offering, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable, without restriction, in the public market immediately following this offering. Merrill Lynch, Pierce, Fenner & Smith Incorporated, however, may, in their sole discretion, permit our officers, directors and certain existing investors who are subject to lock-up agreements to sell shares prior to the expiration of the lock-up agreements. Exceptions to the lock-up restrictions are described in more detail in this prospectus supplement under the caption, "Underwriting."

Table of Contents

Certain holders of shares of our common stock are entitled to rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

Risks Related to Our Common Stock

The price of our common stock may be volatile and our stockholders may not be able to resell shares of our common stock at or above the price they paid.

The trading price of our common stock is highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. Factors that could cause volatility in the market price of our common stock include, but are not limited to:

delays in commercializing or obtaining regulatory approval of AR101;

commercial success and market acceptance of our product candidates following regulatory approval;

manufacturing issues related to our product candidates for clinical trials or additional product candidates for commercialization;

announcements relating to our current development and commercialization program for AR101 and additional product candidates;

results from, or any delays in, clinical trials;

severe adverse events in our trials or in our competitors' trials as a result of exposure to the peanut allergen or other food allergens;

therapeutic innovations or new products developed by us or our competitors;

adverse actions taken by regulatory authorities with respect to our clinical trials, manufacturing supply chain or sales and marketing activities;

changes or developments in laws or regulations applicable to AR101 and our other product candidates;

any changes to our relationship with any manufacturers or suppliers;

the success or failure of our efforts to acquire, license or develop additional product candidates;

any intellectual property infringement actions in which we may become involved;

announcements concerning our competitors or the pharmaceutical industry in general;

achievement of expected product sales and profitability;

manufacturing, supply or distribution delays or shortages;

acquisitions or significant partnerships by us or our competitors;

actual or anticipated fluctuations in our operating results;

product liability claims related to our clinical trials or product candidates;

changes in financial estimates or recommendations by securities analysts;

S-10

Table of Contents

failure to meet financial projections that we or the investment community may provide;

trading volume of our common stock;

capital fundraising or other financing activities that contain onerous or unfavorable terms;

sales of our common stock by us, our executive officers and directors or our stockholders in the future;

general economic and market conditions and overall fluctuations in the United States equity markets;
and

additions or departures of any of our key scientific or management personnel.

In addition, the stock markets in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility that has been often unrelated to the operating performance of the issuer. These broad market fluctuations may adversely affect the trading price or liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the issuer. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the attention of our management would be diverted from the operation of our business, which could seriously harm our financial position. Any adverse determination in litigation could also subject us to significant liabilities.

If securities or industry analysts issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our clinical trials and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

As of December 31, 2017, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially owned approximately 50% of our outstanding common stock. In addition, Nestlé Health Science US Holdings, Inc., one of our existing holders of greater than 5% of our common stock and an affiliate of one of our directors, has indicated an interest in purchasing up to \$30.0 million of shares of the common stock offered hereby at the price offered to the public. Any such purchases, if completed, would be made on the same terms as the shares that are sold to the public generally and not pursuant to any pre-existing contractual rights or obligations. If Nestlé Health Science US Holdings, Inc. purchases all of the shares it has indicated interests in purchasing, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates will beneficially own approximately 49% of our outstanding common stock upon the completion of this offering (based on the assumed

public offering price of \$37.20 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, and assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options). Therefore, even after this offering, these stockholders will have the ability to influence us through this ownership position. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that our stockholders may feel are in their best interest.

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could significantly reduce the value of our shares to a potential acquirer or delay or prevent changes in control or changes in our management without the consent of our board of directors. The provisions in our charter documents include the following:

a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;

Table of Contents

no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;

the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;

the required approval of at least 66 $\frac{2}{3}$ % of the shares entitled to vote to remove a director for cause, and the prohibition on removal of directors without cause;

the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;

the ability of our board of directors to alter our bylaws without obtaining stockholder approval;

the required approval of at least 66 $\frac{2}{3}$ % of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;

a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

In addition, these provisions would apply even if we were to receive an offer that some stockholders may consider beneficial.

We are also subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the board of directors has approved the transaction.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. This provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. Alternatively, if a court were to find this provision in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

We provide broad indemnity to our directors and officers. Claims for such indemnification may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law. In addition, as permitted by Section 145 of the Delaware General Corporation Law, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

We will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person 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 registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful.

Table of Contents

We may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law.

We are required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification.

We will not be obligated pursuant to our amended and restated bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees, except with respect to proceedings authorized by our board of directors or brought to enforce a right to indemnification.

The rights conferred in our amended and restated bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons.

We may not retroactively amend our amended and restated bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an ownership change, generally defined as a greater than 50 percentage point change (by value) in its equity ownership over a rolling three-year period, the corporation's ability to use its pre-change net operating loss, or NOL, carryforwards to offset its post-change taxable income may be limited. Limitations may also apply to the utilization of other pre-change tax attributes as a result of an ownership change. As of December 31, 2017, we had generated NOL carryforwards for federal income tax purposes of \$177.9 million and for California income tax purposes of \$12.0 million. These federal and state NOL carryforwards will begin to expire in 2031, if not utilized. Following the equity investment by Nestle Health Science in November 2016, we performed a Section 382 analysis and determined that we experienced multiple ownership changes under Section 382 of the Code prior to July 31, 2017. Such annual limitations could affect the utilization of NOL and tax credit carryforwards in the future. We experienced no significant permanent losses of tax attributes due to these ownership changes.

In addition, we may experience more ownership changes under Section 382 of the Code as a result of future changes in our stock ownership, some of which may be outside our control. As a result, our ability to utilize NOL carryforwards or other tax attributes, such as research tax credits, in any taxable year may be further limited.

We do not currently intend to pay dividends on our common stock, and, consequently, our stockholders' ability to achieve a return on their investment will depend on appreciation in the price of our common stock.

We do not currently intend to pay any cash dividends on our common stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Since we do not intend to pay dividends, our stockholders' ability to receive a return on their investment in our common stock will depend on any future appreciation in the market value of our common stock. There is no guarantee that our common stock will appreciate or even maintain the price at which our holders have purchased it.

S-13

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds from the sale of \$150.0 million of shares of common stock in this offering will be approximately \$139.6 million, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, based on the assumed public offering price of \$37.20 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018. If the underwriters exercise their option to purchase up to an additional \$22.5 million of shares of common stock in full, we estimate that net proceeds will be approximately \$160.8 million after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use the net proceeds from this offering to fund our ongoing clinical development and additional clinical trials of AR101, regulatory activities related to the potential filing of a Biologics License Application, or BLA, and a Marketing Authorization Application, or MAA, for AR101, preparation for potential commercialization of AR101, research and development of additional CODIT product candidates, and for general corporate purposes.

The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the timing of our BLA and MAA for AR101, the timing of the completion of our RAMSES, ARTEMIS, ARC004 and other clinical trials for AR101, the status of our other research and development programs and the amount of cash used in our operations. We therefore cannot estimate with certainty the amount of net proceeds to be used for the purposes described above. We may find it necessary or advisable to use the net proceeds from this offering for other purposes, and we will have broad discretion in the application of the net proceeds.

Pending the use of the net proceeds from this offering as described above, we intend to invest the net proceeds in a variety of capital preservation investments, including short- and intermediate-term, interest-bearing obligations, investment-grade instruments or U.S. government securities.

Table of Contents**CAPITALIZATION**

The following table sets forth our cash, cash equivalents and short-term investments and capitalization as of December 31, 2017:

on an actual basis; and

on an as adjusted basis to give effect to the issuance and sale by us of \$150.0 million of shares of our common stock in this offering at an assumed public offering price of \$37.20 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information together with our financial statements and related notes incorporated by reference in this prospectus. For more details on how you can obtain our SEC reports and other information, you should read the section of the prospectus supplement entitled "Where You Can Find More Information."

	As of December 31, 2017	
	Actual	As adjusted (unaudited)
(In thousands, except share and per share data)		
Cash, cash equivalents and short-term investments	\$ 182,430	\$ 322,030
Stockholders' equity:		
Preferred stock, \$0.0001 par value per share; 10,000,000 shares authorized, zero shares issued and outstanding, actual and as adjusted		
Common stock, \$0.0001 par value per share; 290,000,000 shares authorized, 51,090,813 shares issued and outstanding, actual; 290,000,000 shares authorized, 55,123,071 shares issued and outstanding, as adjusted	5	5
Additional paid-in capital	443,390	582,990
Accumulated other comprehensive loss	(108)	(108)
Accumulated deficit	(265,482)	(265,482)
Total stockholders' equity	177,805	317,405
Total capitalization	\$ 177,805	\$ 317,405

The outstanding share information in the table above is based on 51,090,813 shares of common stock outstanding as of December 31, 2017 and excludes the following, in each case as of such date:

Edgar Filing: Aimmune Therapeutics, Inc. - Form 424B5

6,582,138 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2017 at a weighted-average exercise price of \$14.25 per share;

16,638 shares of common stock issuable upon vesting of restricted stock units outstanding as of December 31, 2017;

4,313,423 shares of common stock reserved for issuance pursuant to future awards under our 2015 Equity Incentive Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan; and

1,314,485 shares of common stock reserved for future issuance under our Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan.

S-15

Table of Contents**DILUTION**

If you invest in our common stock in this offering, your interest will be immediately diluted to the extent of the difference between the public offering price per share of our common stock in this offering and the net tangible book value per share of our common stock after this offering. As of December 31, 2017, we had a historical net tangible book value of \$177.8 million, or \$3.48 per share of common stock. Our net tangible book value represents total tangible assets less total liabilities and convertible preferred stock, all divided by the number of shares of common stock outstanding on December 31, 2017.

After giving effect to the issuance and sale of \$150.0 million of shares of common stock in this offering based on the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, or \$37.20 per share, and after deducting estimated underwriting discounts and commissions and estimated aggregate offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2017 would have been approximately \$317.4 million, or \$5.76 per share. This represents an immediate increase in as adjusted net tangible book value of \$2.28 per share to existing stockholders and an immediate dilution in net tangible book value of \$31.44 per share to new investors purchasing our common stock in this offering. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$ 37.20
Historical net tangible book value per share as of December 31, 2017	\$ 3.48
Increase per share attributable to new investors	\$ 2.28
As adjusted net tangible book value per share as of December 31, 2017, after giving effect to this offering	\$ 5.76
Dilution per share to new investors purchasing our common stock in this offering	\$ 31.44

If the underwriters fully exercise their option to purchase up to an additional \$22.5 million of shares of common stock, as adjusted net tangible book value after this offering would increase to approximately \$6.08 per share, and there would be an immediate dilution of approximately \$31.12 per share to new investors.

A \$1.00 increase (decrease) in the assumed public offering price of \$37.20 per share, which is the last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018, would increase (decrease) the as adjusted net tangible book value by approximately \$3.8 million, or approximately \$0.07 per share, and increase (decrease) the dilution per share to new investors by approximately \$0.93 per share, assuming that the number of shares offered by us remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Assuming that the assumed public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, an increase of 1,000,000 shares in the number of shares offered by us would increase the as adjusted net tangible book value by approximately \$35.0 million, or \$0.62 per share, and would decrease the dilution per share to new investors by approximately \$0.52 per share, and a decrease of 1,000,000 shares in the number of shares offered by us would decrease the as adjusted net tangible book value by approximately \$35.0 million, or \$0.65 per share, and would increase the dilution per share to new investors by approximately \$0.54 per share. The as adjusted information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this

offering determined at pricing.

To the extent that outstanding options or warrants are exercised or outstanding restricted stock units vest, investors purchasing our common stock in this offering will 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 we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

The number of shares of common stock to be outstanding after this offering is based on 51,090,813 shares of common stock outstanding as of December 31, 2017, and excludes the following, in each case as of such date:

6,582,138 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2017 at a weighted-average exercise price of \$14.25 per share;

16,638 shares of common stock issuable upon vesting of restricted stock units outstanding as of December 31, 2017;

4,313,423 shares of common stock reserved for issuance pursuant to future awards under our 2015 Equity Incentive Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan; and

1,314,485 shares of common stock reserved for future issuance under our Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under this plan.

S-16

Table of Contents**PRICE RANGE OF COMMON STOCK**

Our common stock has been publicly traded on The Nasdaq Global Select Market under the symbol **AIMT** since our initial public offering on August 6, 2015. Prior to that time, there was no public market for our common stock. The following table sets forth on a per share basis, for the periods indicated, the low and high sale prices of our common stock as reported by The Nasdaq Global Select Market:

	High	Low
Year ended December 31, 2018		
First quarter (through February 16, 2018)	\$ 40.65	\$ 34.11
Year ended December 31, 2017		
First quarter	\$ 23.40	\$ 16.42
Second quarter	\$ 21.88	\$ 15.97
Third quarter	\$ 25.92	\$ 18.25
Fourth quarter	\$ 40.00	\$ 24.64
Year ended December 31, 2016		
First quarter	\$ 19.00	\$ 12.43
Second quarter	\$ 15.88	\$ 10.57
Third quarter	\$ 17.23	\$ 9.77
Fourth quarter	\$ 27.31	\$ 14.48
Year ended December 31, 2015		
Third quarter (beginning August 6, 2015)	\$ 28.33	\$ 17.50
Fourth quarter	\$ 26.02	\$ 14.40

The last reported sale price of our common stock on The Nasdaq Global Select Market on February 16, 2018 was \$37.20 per share. As of February 16, 2018, there were approximately 11 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors.

Table of Contents

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the "IRS"), in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

U.S. expatriates and former citizens or long-term residents of the United States;

persons subject to the alternative minimum tax;

persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;

banks, insurance companies, and other financial institutions;

brokers, dealers, or traders in securities;

controlled foreign corporations, passive foreign investment companies, and corporations that accumulate earnings to avoid U.S. federal income tax;

partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);

tax-exempt organizations or governmental organizations;

persons deemed to sell our common stock under the constructive sale provisions of the Code;

tax-qualified retirement plans;

qualified foreign pension funds as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and

persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into account in an applicable financial statement.

If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Table of Contents

Definition of Non-U.S. Holder

For purposes of this discussion, a Non-U.S. Holder is any beneficial owner of our common stock that is neither a U.S. person nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

an individual who is a citizen or resident of the United States;

a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;

an estate, the income of which is subject to U.S. federal income tax regardless of its source; or

a trust that (1) is subject to the primary supervision of a U.S. court and all substantial decisions of which are subject to the control of one or more United States persons (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled Dividend Policy, we do not anticipate paying any cash dividends in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under Sale or Other Taxable Disposition.

Subject to the discussion below regarding effectively connected income, dividends paid to a Non-U.S. Holder will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable tax treaties.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

Subject to the discussions below regarding backup withholding and FATCA, a Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);

the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or

our common stock constitutes a U.S. real property interest ("USRPI") by reason of our status as a U.S. real property holding corporation ("USRPHC") for U.S. federal income tax purposes.

Table of Contents

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by certain U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder will not be subject to U.S. federal income tax if our common stock is regularly traded, as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the Non-U.S. Holder certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above or the Non-U.S. Holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker that does not have certain enumerated relationships with the United States generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or "FATCA") on certain types of payments made to non-U.S. financial

institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign financial institution or a non-financial foreign entity (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any substantial United States owners (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain specified United States persons or United States-owned foreign entities (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock, and, beginning on January 1, 2019, will apply to payments of gross proceeds from the sale or other disposition of such stock.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

Table of Contents**UNDERWRITING**

Merrill Lynch, Pierce, Fenner & Smith Incorporated is acting as representative of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
Merrill Lynch, Pierce, Fenner & Smith Incorporated	
Cantor Fitzgerald & Co.	
Piper Jaffray & Co.	
Credit Suisse Securities (USA) LLC	
RBC Capital Markets, LLC	
Total	

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Nestlé Health Science US Holdings, Inc., one of our existing holders of greater than 5% of our common stock and an affiliate of one of our directors, has indicated an interest in purchasing up to \$30.0 million of shares of the common stock offered hereby at the price offered to the public. Any such purchase, if completed, would be made on the same terms as the shares that are sold to the public generally and not pursuant to any pre-existing contractual rights or obligations. Whether or not Nestlé Health Science US Holdings, Inc. purchases any or all of the shares for which it indicated an interest in purchasing will not affect the underwriters' commitment to purchase the common shares offered by us if the underwriters purchase any shares. The underwriters will receive the same underwriting discounts and any commissions on any shares purchased by these investors as they will on any other shares sold to the public in this offering.

Commissions and Discounts

The representative has advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$ per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	\$	\$	\$
Underwriting discount	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The expenses of the offering, not including the underwriting discount, are estimated at \$1.4 million and are payable by us. The underwriters have agreed to reimburse us for up to \$ of documented expenses incurred in connection with this offering.

Table of Contents

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus supplement, to purchase up to \$22.5 million of additional shares of our common stock at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers, directors and certain of our shareholders affiliated with certain of our directors have agreed, subject to certain exceptions, not to directly or indirectly offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, or exercise any right with respect to the registration of, or file or cause to be filed any registration statement under the Securities Act in connection therewith, or enter into any swap or any agreement or transaction that transfers, in whole or in part, the economic consequence of ownership of, directly or indirectly, any shares of common stock or securities convertible into or exchangeable or exercisable for common stock without the prior written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated for a period of 60 days after the date of this prospectus supplement.

The exceptions permit us, among other things and subject to restrictions, to (a) issue common stock in connection with the offering, (b) file any automatic registration statement on Form S-3/ASR, provided that no sales are made pursuant to such registration statement during the lock-up period, (c) issue common stock upon exercise of outstanding options or warrants, (d) issue common stock or options pursuant to existing employee benefit plans, (e) issue common stock pursuant to any non-employee director stock plan or dividend reinvestment plan, (f) file registration statements on Form S-8, and (g) issue securities in connection with acquisitions or similar transactions, provided that such issuances shall not be greater than 5% of our total outstanding shares immediately following the initial closing. The exceptions permit our executive officers and directors, among other things and subject to restrictions, to transfer, distribute or contribute our shares (a) as a *bona fide* gift or gifts, (b) to any trust for the direct or indirect benefit of such officer or director or the immediate family of such officer or director, (c) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of such officer or director; (d) as a distribution to partners, members or stockholders of such officer or director; or (e) to such officer or director's affiliates or to any investment fund or other entity controlled or managed by such officer or director; (f) to us upon a vesting event of any equity award or upon the exercise of options to purchase shares of common stock granted under any stock incentive plan or stock purchase plan in effect as of the date of the underwriting agreement, in each case, on a cashless or net exercise basis and/or to cover tax withholding obligations in connection with such vesting or exercise; (g) to us pursuant to equityholder agreements or agreements pursuant to which such securities were issued and under which we have an option to repurchase such shares of common stock upon the termination of the employment of such director or officer; (h) pursuant to a qualified domestic order or in connection with a divorce settlement; and (i) pursuant to existing Rule 10b-5 trading plans, in an amount of approximately 41,000 shares. For purposes of this paragraph, immediate family shall mean any relationship by blood, marriage or adoption, not more remote than first cousin.

The Nasdaq Global Select Market Listing

The shares are listed on The Nasdaq Global Select Market under the symbol AIMT.

Price Stabilization, Short Positions

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representative may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. Covered short sales are sales made in an amount not greater than the underwriters option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. Naked short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

Table of Contents

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on The Nasdaq Global Select Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representative will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Passive Market Making

In connection with this offering, underwriters and selling group members may engage in passive market making transactions in the common stock on The Nasdaq Global Select Market in accordance with Rule 103 of Regulation M under the Exchange Act during a period before the commencement of offers or sales of common stock and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriters and dealers are not required to engage in passive market making and may end passive market making activities at any time.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

European Economic Area

In relation to each member state of the European Economic Area, no offer of ordinary shares which are the subject of the offering has been, or will be made to the public in that Member State, other than under the following exemptions under the Prospectus Directive:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the representative for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, *provided* that no such offer of ordinary shares referred to in (a) to (c) above shall result in a requirement for the Company or the representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive, or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

S-23

Table of Contents

Each person located in a Member State to whom any offer of ordinary shares is made or who receives any communication in respect of an offer of ordinary shares, or who initially acquires any ordinary shares will be deemed to have represented, warranted, acknowledged and agreed to and with the representative and the Company that (1) it is a qualified investor within the meaning of the law in that Member State implementing Article 2(1)(e) of the Prospectus Directive; and (2) in the case of any ordinary shares acquired by it as a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, the ordinary shares acquired by it in the offer have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Member State other than qualified investors, as that term is defined in the Prospectus Directive, or in circumstances in which the prior consent of the representative has been given to the offer or resale; or where ordinary shares have been acquired by it on behalf of persons in any Member State other than qualified investors, the offer of those ordinary shares to it is not treated under the Prospectus Directive as having been made to such persons.

The Company, the representative and their respective affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgments and agreements.

This prospectus supplement has been prepared on the basis that any offer of shares in any Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Member State of shares which are the subject of the offering contemplated in this prospectus supplement may only do so in circumstances in which no obligation arises for the Company or the representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the representative have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the representative to publish a prospectus for such offer.

For the purposes of this provision, the expression an offer of ordinary shares to the public in relation to any ordinary shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the ordinary shares to be offered so as to enable an investor to decide to purchase or subscribe the ordinary shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (as amended) and includes any relevant implementing measure in each Member State.

The above selling restriction is in addition to any other selling restrictions set out below.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are qualified investors (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the Order) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as relevant persons). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

S-24

Table of Contents

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority (DFSA). This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission (ASIC), in relation to the offering. This prospectus supplement does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the Corporations Act), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the Exempt Investors) who are sophisticated investors (within the meaning of section 708(8) of the Corporations Act), professional investors (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus supplement contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus supplement is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to professional investors as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a prospectus as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares

which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph,

Japanese Person shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

S-25

Table of Contents

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:
 - (a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
 - (b) where no consideration is or will be given for the transfer;
 - (c) where the transfer is by operation of law;
 - (d) as specified in Section 276(7) of the SFA; or
 - (e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

S-26

Table of Contents

LEGAL MATTERS

The validity of the issuance of our common stock offered hereby will be passed upon for us by Latham & Watkins LLP, Menlo Park, California. The underwriters are being represented in connection with this offering by Davis Polk & Wardwell LLP, Menlo Park, California.

EXPERTS

The consolidated financial statements of Aimmune Therapeutics, Inc. as of December 31, 2017 and 2016 and for each of the years in the three-year period ended December 31, 2017, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2017 have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

S-27

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act, of which this prospectus supplement and the accompanying base prospectus form a part. The rules and regulations of the SEC allow us to omit from this prospectus supplement and the accompanying base prospectus certain information included in the registration statement. For further information about us and the securities we are offering under this prospectus supplement and the accompanying base prospectus, you should refer to the registration statement and the exhibits and schedules filed with the registration statement. With respect to the statements contained in this prospectus supplement and the accompanying base prospectus regarding the contents of any agreement or any other document, in each instance, the statement is qualified in all respects by the complete text of the agreement or document, a copy of which has been filed as an exhibit to the registration statement.

We file reports, proxy statements and other information with the SEC under the Securities Exchange Act of 1934, as amended. You may read and copy this information from the Public Reference Room of the SEC, 100 F Street, N.E., Room 1580, Washington, D.C. 20549, at prescribed rates. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

The SEC allows us to incorporate by reference the information we file with them which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus supplement and the accompanying base prospectus. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying base prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future information filed (rather than furnished) with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination of this offering, provided, however, that we are not incorporating any information furnished under Item 2.02 or Item 7.01 of any current report on Form 8-K:

our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 20, 2018;

the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2016 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 12, 2017;

our Current Report on Form 8-K filed with the SEC on February 20, 2018; and

the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on July 28, 2015, including any amendments or reports filed for the purpose of updating such description.

These documents may also be accessed on our website at www.aimimmune.com. Except as otherwise specifically incorporated by reference in this prospectus supplement and the accompanying base prospectus, information

contained in, or accessible through, our website is not a part of this prospectus supplement and the accompanying base prospectus.

S-28

Table of Contents

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents by writing or telephoning us at the following address:

Aimmune Therapeutics, Inc.

8000 Marina Blvd, Suite #300

Brisbane, CA 94005

(650) 614-5220

Attention: Corporate Secretary

S-29

Table of Contents

PROSPECTUS

**Common Stock, Preferred Stock, Debt Securities,
Warrants, Purchase Contracts, Units**

We may offer and sell the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled *About this Prospectus* and *Plan of Distribution* for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE RISK FACTORS ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on The NASDAQ Global Select Market under the symbol *AIMT*. On December 27, 2017, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$38.40 per share.

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

The date of this prospectus is December 28, 2017.

Table of Contents

TABLE OF CONTENTS

<u>About This Prospectus</u>	1
<u>Where You Can Find More Information; Incorporation By Reference</u>	2
<u>About Aimmune</u>	4
<u>Risk Factors</u>	5
<u>Use of Proceeds</u>	6
<u>Ratio of Earnings to Fixed Charges and Preference Dividends</u>	7
<u>Description of Capital Stock</u>	8
<u>Description of Debt Securities</u>	13
<u>Description of Other Securities</u>	21
<u>Global Securities</u>	22
<u>Plan of Distribution</u>	26
<u>Legal Matters</u>	27
<u>Experts</u>	27

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, as a well-known seasoned issuer as defined in Rule 405 under the Securities Act of 1933, as amended, using a shelf registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings as described in this prospectus. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading **Where You Can Find More Information; Incorporation by Reference**.

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

When we refer to **Aimmune**, **we**, **our**, **us** and the **Company** in this prospectus, we mean Aimmune Therapeutics, and our consolidated subsidiary unless otherwise specified. When we refer to **you**, we mean the potential holders of the applicable series of securities.

Aimmune and the **Aimmune** logo are some of our trademarks used in this prospectus. This prospectus also includes trademarks, tradenames, and service marks that are the property of other organizations. Solely for convenience, our trademarks and tradenames referred to in this prospectus appear without the symbol, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. Information filed with the SEC by us can be inspected and copied at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of this information by mail from the Public Reference Room of the SEC at prescribed rates. Further information on the operation of the SEC's Public Reference Room in Washington, D.C. can be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our website address is www.Aimmune.com. The information on our website, however, is not, and should not be deemed to be, a part of this prospectus. We have included our website address as an inactive textual reference only.

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement at the SEC's Public Reference Room in Washington, D.C. or through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to incorporate by reference information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequent filed document incorporated by reference modifies or replaces that statement.

We incorporate by reference our documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act in this prospectus, between the date of this prospectus and the termination of the offering of the securities described in this prospectus. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed below or filed in the future, that are not deemed filed with the SEC, including any Compensation Committee report and performance graph or any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

Edgar Filing: Aimmune Therapeutics, Inc. - Form 424B5

our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 15, 2017;

our Quarterly Report on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017 and filed with the SEC on May 8, 2017, August 8, 2017 and November 6, 2017, respectively;

the information specifically incorporated by reference into our annual report on Form 10-K for the year ended December 31, 2015 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 12, 2017;

Table of Contents

our Current Reports on Form 8-K filed with the SEC on January 9, 2017, February 3, 2017, February 16, 2017, April 13, 2017, May 26, 2017, June 16, 2017, October 16, 2017 and, with respect to Section 5.02 and 8.01 only, November 6, 2017; and

the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on July 28, 2015, including any amendments or reports filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus (other than exhibits, unless they are specifically incorporated by reference in the documents) by writing or telephoning us at the following address:

Aimmune, Inc.

8000 Marina Blvd, Suite #300

Brisbane, CA 94005

(650) 614-5220

Attention: Corporate Secretary

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus and any accompanying prospectus supplement.

Table of Contents

ABOUT AIMMUNE

We are a clinical-stage biopharmaceutical company advancing a new therapeutic approach, including the development of proprietary product candidates, for the treatment of peanut and other food allergies.

We were incorporated in the state of Delaware in 2011 and commenced operations in 2011. Our principal executive offices are located at 8000 Marina Blvd, Suite #300, Brisbane, California 94005, and our telephone number is (650) 614-5220.

Table of Contents

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q, and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K we file after the date of this prospectus, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

Table of Contents

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

Table of Contents**RATIO OF EARNINGS TO FIXED CHARGES AND PREFERENCE DIVIDENDS**

Our earnings have been inadequate to cover fixed charges and preference dividends. The following table sets forth the dollar amount of the deficiency to cover fixed charges for each of the years ended December 31, 2016, 2015 and 2014, and the nine months ended September 30, 2017. We have derived the deficiency of earnings to cover fixed charges and preference dividends from our historical financial statements. The following should be read in conjunction with our financial statements, including the notes thereto, and the other financial information included or incorporated by reference herein. See Exhibit 12.1 hereto for additional detail regarding the computation of the deficiency of earnings to cover fixed charges and preference dividends.

	Year Ended December 31,			Nine Months Ended September 30,
	2016	2015	2014	2017
(in millions)				
Deficiency of earnings available to cover fixed charges	\$ (80,050)	\$ (35,596)	\$ (11,076)	\$ (89,500)

For the periods indicated above, we have no outstanding shares of preferred stock with required dividend payments. Therefore, the deficiency of earnings to combined fixed charges and preferred stock dividends is identical to the deficiency presented in the table above.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following summary describes our capital stock and the material provisions of our amended and restated certificate of incorporation and our amended and restated bylaws, the amended and restated investor rights agreement to which we and certain of our stockholders are parties and of the General Corporation Law of the State of Delaware. Because the following is only a summary, it does not contain all of the information that may be important to you. For a complete description, you should refer to our amended and restated certificate of incorporation, amended and restated bylaws, and amended and restated investor rights agreement, copies of which are incorporated by reference into the registration statement of which this prospectus is a part.

General

We have authorized under our amended and restated certificate of incorporation 290,000,000 shares of common stock, \$0.0001 par value per share, and 10,000,000 shares of preferred stock, \$0.0001 par value per share. As of September 30, 2017, there were outstanding:

50,694,706 shares of our common stock; and

6,930,451 shares of our common stock issuable upon exercise of outstanding stock options.

As of September 30, 2017, there were approximately 20 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights in the election of directors. Accordingly, holders of a majority of the voting shares are able to elect all of the directors. In addition, the affirmative vote of holders of 66 $\frac{2}{3}$ % of the voting power of all of the then outstanding voting stock will be required to take certain actions, including amending certain provisions of our amended and restated certificate of incorporation, such as the provisions relating to amending our amended and restated bylaws, the classified board and director liability.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of

preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate in the future.

Table of Contents

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be, fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our company or other corporate action. As of September 30, 2017, no shares of preferred stock were outstanding, and we have no present plan to issue any shares of preferred stock.

Registration Rights

Under our amended and restated investor rights agreement, the holders of approximately 6.0 million shares of common stock, or their transferees, have the right to require us to register their shares under the Securities Act so that those shares may be publicly resold, or to include their shares in any registration statement we file, in each case as described below.

Demand Registration Rights

Based on the number of shares outstanding as of September 30, 2017, holders of approximately 6.0 million shares of our common stock (on an as-converted basis), or their transferees, are entitled to certain demand registration rights. The holders of at least fifty percent (50%) of these shares can, on not more than two occasions, request that we register all or a portion of their shares if the aggregate price to the public of the shares offered is at least \$3,000,000.

Piggyback Registration Rights

Based on the number of shares outstanding as of September 30, 2017, in the event that we determine to register any of our securities under the Securities Act (subject to certain exceptions), either for our own account or for the account of other security holders, the holders of approximately 6.0 million shares of our common stock (on an as-converted basis), or their transferees, are entitled to certain piggyback registration rights allowing the holders to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to a registration related to employee benefit plans, the offer and sale of debt securities, or corporate reorganizations or certain other transactions, the holders of these shares are entitled to notice of the registration and have the right, subject to limitations that the underwriters may impose on the number of shares included in the registration, to include their shares in the registration. In an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include.

Form S-3 Registration Rights

Based on the number of shares outstanding as of September 30, 2017, the holders of approximately 6.0 million shares of our common stock (on an as-converted basis), or their transferees, are entitled to certain Form S-3 registration rights. The holders of at least twenty five percent (25%) of these shares can make a written request that we register their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and if the aggregate price to the public of the shares offered is at least \$1,000,000 net of certain expenses related to the sale of the shares. These stockholders may make an unlimited number of requests for registration on Form S-3, but in no event shall we be required to file more than two registrations on Form S-3 in any given calendar year.

Table of Contents

Expenses of Registration

We will pay the registration expenses of the holders of the shares registered pursuant to the demand, piggyback and Form S-3 registration rights described above, including the expenses in an amount not to exceed \$25,000 of one counsel for the selling holders.

Expiration of Registration Rights

The demand, piggyback and Form S-3 registration rights described above will expire, with respect to any particular stockholder, upon the earlier of five years after the consummation of our initial public offering or when that stockholder can sell all of its shares under Rule 144 of the Securities Act during any three-month period.

Anti-Takeover Effects of Provisions of our Amended and Restated Certificate of Incorporation, our Amended and Restated Bylaws and Delaware Law

Some provisions of Delaware law and our amended and restated certificate of incorporation and our amended and restated bylaws could make the following transactions more difficult: acquisition of us by means of a tender offer; acquisition of us by means of a proxy contest or otherwise; or removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions that might result in a premium over the market price for our shares.

These provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

Delaware Anti-Takeover Statute

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits persons deemed interested stockholders from engaging in a business combination with a publicly-held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an interested stockholder is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation's voting stock. Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors, such as discouraging takeover attempts that might result in a premium over the market price of our common stock.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deterring hostile takeovers or delaying changes in control or management of our company.

Special Stockholder Meetings

Our amended and restated bylaws provide that a special meeting of stockholders may be called at any time by the board of directors, but such special meetings may not be called by the stockholders or any other person or persons.

Table of Contents

Requirements for Advance Notification of Stockholder Nominations and Proposals

Our amended and restated bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

Elimination of Stockholder Action by Written Consent

Our amended and restated certificate of incorporation eliminates the right of stockholders to act by written consent without a meeting.

Classified Board; Election and Removal of Directors; Filling Vacancies

Our board of directors is divided into three classes. The directors in each class will serve for a three-year term, one class being elected each year by our stockholders, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, our stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. Our amended and restated certificate of incorporation provides for the removal of any of our directors only for cause and requires a stockholder vote by the holders of at least a 66 $\frac{2}{3}$ % of the voting power of the then outstanding voting stock. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of the board, may only be filled by a resolution of the board of directors unless the board of directors determines that such vacancies shall be filled by the stockholders. This system of electing and removing directors and filling vacancies may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

Choice of Forum

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Although our amended and restated certificate of incorporation contains the choice of forum provision described above, it is possible that a court could find that such a provision is inapplicable for a particular claim or action or that such provision is unenforceable.

Amendment of Charter Provisions

The amendment of any of the above provisions, except for the provision making it possible for our board of directors to issue undesignated preferred stock, would require approval by a stockholder vote by the holders of at least a 66 $\frac{2}{3}$ % of the voting power of the then outstanding voting stock.

The provisions of the Delaware General Corporation Law, our amended and restated certificate of incorporation and our amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish

transactions that stockholders may otherwise deem to be in their best interests.

Table of Contents

Limitations of Liability and Indemnification Matters

Our amended and restated certificate of incorporation contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by Delaware law. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

any breach of the director's duty of loyalty to us or our stockholders;

any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or

any transaction from which the director derived an improper personal benefit.

Each of our amended and restated certificate of incorporation and amended and restated bylaws provides that we are required to indemnify our directors and officers, in each case, to the fullest extent permitted by Delaware law. Our amended and restated bylaws also obligate us to advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under Delaware law. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. With specified exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and our stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage.

The NASDAQ Global Select Market Listing

Our common stock is listed on The NASDAQ Global Select Market under the symbol AIMT.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Wells Fargo Shareowner Services. The transfer agent and registrar's address is P.O. Box 64874, St. Paul, Minnesota 55164.

Table of Contents

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a third party to be identified therein as trustee. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement and you should read the indenture for provisions that may be important to you. In the summary below, we have included references to the section numbers of the indenture so that you can easily locate these provisions. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

As used in this section only, Aimmune, we, our, or us refer to Aimmune Therapeutics, Inc., excluding our subsidiaries, unless expressly stated or the context otherwise requires.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer's certificate or by a supplemental indenture. (Section 2.2) The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be in one or more series with the same or various maturities, at par, at a premium, or at a discount. (Section 2.1) We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered, the aggregate principal amount and the following terms of the debt securities, if applicable:

the title and ranking of the debt securities (including the terms of any subordination provisions);

the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;

any limit on the aggregate principal amount of the debt securities;

the date or dates on which the principal of the securities of the series is payable;

the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;

the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;

the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;

any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities and the period or periods within which, the price or prices at which and in the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

Table of Contents

the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;

the denominations in which the debt securities will be issued, if other than minimum denominations of \$1,000 and in integral multiples in excess thereof;

whether the debt securities will be issued in the form of certificated debt securities or global debt securities;

the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;

the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;

the designation of the currency, currencies or currency units in which payment of principal of, premium, if any, and interest on the debt securities will be made;

if payments of principal of, premium, if any, or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;

the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;

any provisions relating to any security provided for the debt securities;

any addition to, deletion of or change in the Events of Default described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;

any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;

any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;

the provisions, if any, relating to conversion or exchange of any debt securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;

any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and

whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees. (Section 2.2)

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

Table of Contents

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, or the Depository, or a nominee of the Depository (we will refer to any debt security represented by a global debt security as a *book-entry debt security*), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a *certificated debt security*) as set forth in the applicable prospectus supplement. Except as set forth under the heading *Global Debt Securities and Book-Entry System* below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities. You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. (Section 2.4) No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange. (Section 2.7)

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium, if any, and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depository, registered in the name of the Depository or a nominee of the Depository, and follow the applicable procedures of the Depository. Please see *Global Securities*.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities. (Article IV)

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a *successor person*) unless:

we are the surviving corporation or the successor person (if other than Aimmune) expressly assumes our obligations on the debt securities and under the indenture; and

immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Table of Contents

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us. (Section 5.1)

Events of Default

Event of Default means with respect to any series of debt securities, any of the following:

default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);

default in the payment of principal of any security of that series at its maturity;

default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or Aimmune and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;

certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of Aimmune; and

any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement. (Section 6.1)

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. (Section 6.1) The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiaries outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof. (Section 6.1)

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been

obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. (Section 6.2) We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. (Section 7.1(e)) Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series. (Section 6.12)

Table of Contents

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and

the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days. (Section 6.7)

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, any premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment. (Section 6.8)

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. (Section 4.3) If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall deliver (or electronically deliver while Notes are in global form) to each Securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities. (Section 7.5)

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

to cure any ambiguity, defect or inconsistency;

to comply with covenants in the indenture described above under the heading Consolidation, Merger and Sale of Assets ;

to provide for uncertificated securities in addition to or in place of certificated securities;

to add guarantees with respect to debt securities of any series or secure debt securities of any series;

to surrender any of our rights or powers under the indenture;

to add covenants or events of default for the benefit of the holders of debt securities of any series;

to comply with the applicable procedures of the applicable depositary;

to make any change that does not adversely affect the rights of any holder of debt securities;

to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;

to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee;
or

to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act. (Section 9.1)

Table of Contents

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;

reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;

reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;

reduce the principal amount of discount securities payable upon acceleration of maturity;

waive a default in the payment of the principal of, premium, if any, or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);

make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;

make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium, if any, and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or

waive a redemption payment with respect to any debt security. (Section 9.3)

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. (Section 9.2) The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, any premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration. (Section 6.13)

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series (subject to certain exceptions). We will be so discharged upon the deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium, if any, and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the

Table of Contents

date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred. (Section 8.3)

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

we may omit to comply with the covenant described under the heading Consolidation, Merger and Sale of Assets and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement; and

any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (covenant defeasance).

The conditions include:

depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium, if any, and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and

delivering to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred. (Section 8.4)

No Personal Liability of Directors, Officers, Employees or Stockholders

None of our past, present or future directors, officers, employees or stockholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability. This waiver and release is part of the consideration for the issue of the debt securities. However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of

Table of Contents

New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party's address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum. (Section 10.10)

Table of Contents

DESCRIPTION OF OTHER SECURITIES

We will set forth in the applicable prospectus supplement a description of any warrants, purchase contracts or units issued by us that may be offered and sold pursuant to this prospectus.

Table of Contents

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depositary, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depositary to its nominee or by the nominee to the depositary, or by the depositary or its nominee to a successor depositary or to a nominee of the successor depositary.

DTC has advised us that it is:

a limited-purpose trust company organized under the New York Banking Law;

a banking organization within the meaning of the New York Banking Law;

a member of the Federal Reserve System;

a clearing corporation within the meaning of the New York Uniform Commercial Code; and

a clearing agency registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants' accounts, thereby eliminating the need for physical movement of securities certificates. Direct participants in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC's records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants' records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of

beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC's records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

Table of Contents

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in street name. Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depositary with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depositary is not obtained, securities certificates are required to be printed and delivered.

Table of Contents

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

DTC notifies us that it is unwilling or unable to continue as a depository for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depository is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;

we determine, in our sole discretion, not to have such securities represented by one or more global securities; or

an Event of Default has occurred and is continuing with respect to such series of securities, and DTC so requests, we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depository directs. It is expected that these directions will be based upon directions received by the depository from its participants with respect to ownership of beneficial interests in the global securities.

We have obtained the information in this section and elsewhere in this prospectus concerning DTC and DTC's book-entry system from sources that are believed to be reliable, but we take no responsibility for the accuracy of this information.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as Clearstream, or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as Euroclear, either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositories, which in turn will hold such interests in customers' securities accounts in such depositories' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other

institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositaries; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depositary to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositaries.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as

Table of Contents

a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we, the Trustee nor any agent of ours or the Trustee will have any responsibility for the performance or nonperformance by DTC, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the offered securities from time to time:

through underwriters or dealers;

through agents;

directly to one or more purchasers; or

through a combination of any of these methods of sale.

We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation in the applicable prospectus supplement.

Table of Contents

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Aimmune Therapeutics, Inc. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Aimmune Therapeutics, Inc. as of December 31, 2016 and 2015, and for each of the years in the three-year period ended December 31, 2016, have been incorporated by reference in this prospectus and in the registration statement in reliance upon the report of KPMG, LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

Table of Contents

\$150,000,000

Common Stock

Prospectus Supplement

BofA Merrill Lynch

Cantor

Piper Jaffray

Credit Suisse

RBC Capital Markets

February , 2018