

ALDER BIOPHARMACEUTICALS INC

Form 424B5

February 28, 2019

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Filed Pursuant to Rule 424(b)(5)

Registration No. 333-216199

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Unit(1)	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, par value \$0.0001 per share	13,000,000	\$11.50	\$149,500,000	\$18,119.40

(1) Includes 1,695,652 shares that may be purchased by the underwriters upon exercise of the underwriters overallotment option.

(2) The filing fee is calculated and being paid pursuant to Rule 457(r) under the Securities Act of 1933, as amended, and relates to the Registration Statement on Form S-3 (File No. 333-216199) filed by the Registrant on February 23, 2017.

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(To prospectus dated February 23, 2017)

11,304,348 shares***Common stock***

We are offering 11,304,348 shares of common stock. Our common stock is listed for trading on the Nasdaq Global Market under the ticker symbol ALDR. The last reported sale price of our common stock on the Nasdaq Global Market on February 26, 2019 was \$13.51 per share.

Investing in our common stock involves a high degree of risk. See Risk factors beginning on page S-8 of this prospectus supplement and on page 4 of the accompanying prospectus, as well as our other filings that are incorporated by reference into this prospectus supplement and the accompanying prospectus.

	Per share	Total
Price to the public	\$ 11.500	\$ 130,000,002
Underwriting discounts and commissions	\$ 0.690	\$ 7,800,000
Proceeds to us (before expenses)	\$ 10.810	\$ 122,200,002

We have granted the underwriters an option to purchase a maximum of 1,695,652 additional shares of common stock at the public offering price, less underwriting discounts and commissions, within 30 days from the date of this prospectus supplement. See Underwriting for more information.

Certain institutional and other accredited investors affiliated with or managed by Redmile Group, LLC, which are affiliated with one of our directors, Jeremy Green, and which together are our largest stockholders, have agreed to purchase \$20.0 million of shares of common stock in a private placement exempt from the registration requirements of the Securities Act of 1933, as amended, at a sale price equal to the public offering price of our common stock in this offering, or the concurrent private placement. The underwriters will serve as placement agents for the concurrent private placement and receive a placement agent fee equal to a percentage of the total purchase price of the private placement shares, which percentage will be equal to the percentage discount the underwriters will receive on shares sold in this public offering. The consummation of the concurrent private placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions. However, the consummation of this offering is not contingent on the consummation of the concurrent private placement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus.

The underwriters expect to deliver the common shares to purchasers on or about March 4, 2019.

J.P. Morgan

SVB Leerink
RBC Capital Markets

Wells Fargo Securities

February 27, 2019

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We have not, and the underwriters have not, authorized anyone to provide you with information that is contained or incorporated by reference into this prospectus supplement, the accompanying prospectus and any related free writing prospectus we have authorized for use in connection with this offering. We take no responsibility for, and can provide no assurances of, any other information that others may give you. We and the underwriters are offering to sell shares of common stock and seeking offers to buy shares of common stock only in jurisdictions where offers and sales are permitted. The information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents or sale of our common stock.

For investors outside the United States: we have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering outside the United States.

About this prospectus supplement

This document consists of two parts. The first part is this prospectus supplement, which describes the terms of this offering of common stock and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement. The second part is the accompanying prospectus dated February 23, 2017, which includes the documents incorporated by reference therein and provides more general information. To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or the documents incorporated by reference herein or therein, you should rely on the information in this prospectus supplement.

Generally, when we refer to the prospectus, we are referring to this prospectus supplement and the accompanying prospectus combined. You should read both this prospectus supplement and the accompanying prospectus, together with additional information described under the heading "Where you can find more information."

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Prospectus supplement summary

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement. This summary provides an overview of selected information and does not contain all of the information you should consider before deciding whether to invest in our common stock. Therefore, you should read the entire prospectus supplement and the accompanying prospectus carefully (including the documents incorporated by reference herein and therein), especially the Risk factors section beginning on page S-8 and in the documents incorporated by reference and our consolidated financial statements (which we refer to as our Financial Statements) and the related notes incorporated by reference in this prospectus supplement and the accompanying prospectus, before deciding to invest in our common stock. Unless the context otherwise requires, we use the terms Alder, Company, we, us and our in this prospectus supplement and the accompanying prospectus to refer to Alder BioPharmaceuticals, Inc. and, where appropriate, our consolidated subsidiaries.

Overview

We are a clinical-stage biopharmaceutical company that discovers, develops and seeks to commercialize therapeutic antibodies with the potential to meaningfully transform the treatment paradigm in migraine. All of our product candidates were discovered and developed by Alder scientists using our proprietary antibody technology platform coupled with a deliberate approach to design and select candidates with properties that we believe optimize the therapeutic potential for patients and commercial competitiveness.

We are focusing our resources and development efforts principally on eptinezumab (ALD403), our solely-owned lead investigational product candidate, in order to maximize its therapeutic and commercial potential. On February 21, 2019, we submitted a Biologics License Application (BLA) to the U.S. Food and Drug Administration (FDA) for eptinezumab for the prevention of migraine. The submission follows the successful completion of our pivotal trial program for eptinezumab, consisting of PRevention Of Migraine via Intravenous ALD403 Safety and Efficacy 1 (PROMISE 1), a Phase 3 clinical trial evaluating eptinezumab for the prevention of frequent episodic migraine, and PRevention Of Migraine via Intravenous ALD403 Safety and Efficacy 2 (PROMISE 2), a Phase 3 clinical trial evaluating eptinezumab for the prevention of chronic migraine.

Migraine is a serious neurological disease affecting about 36 million people in the United States. Of that number, approximately 13 million people in the United States are candidates for a migraine prevention therapeutic. Of these candidates for migraine prevention, we estimate that there are between five million to seven million people living with episodic and chronic migraine who are the most highly impacted patients, and they typically experience eight or more migraine days per month. Epidemiologic studies suggest that approximately 27% of the candidates for migraine prevention have received preventive treatments. As a result, we believe there is a significant unmet need for new treatment and prevention options. The anti-CGRP migraine prevention market in the United States is forecasted to be a \$5 billion market. We plan to focus our initial commercialization efforts for eptinezumab on the approximately 3,000 procedure oriented headache specialists that see the largest number of these highly impacted patients.

Eptinezumab is a humanized immunoglobulin G1 (IgG1) monoclonal antibody specific for calcitonin gene-related peptide (CGRP) ligand, a small protein and a validated target that is understood to drive migraine initiation, maintenance and chronification. Designed to deliver a competitively differentiated approach to migraine prevention, we believe eptinezumab holds the potential to be a transformative therapeutic and meet a profound medical need, changing the migraine prevention treatment paradigm for physicians and patients living with migraine.

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Our product candidate pipeline also includes ALD1910, a high specificity, high affinity neutralizing monoclonal antibody with reactivity to that targets pituitary adenylate cyclase-activating polypeptide-38 (PACAP-38). PACAP has emerged as an important signaling molecule in the pathophysiology of migraine and represents an attractive novel target for treating migraine. New evidence indicates that PACAP may represent a unique and distinct pathway associated with migraine. Preclinical data indicate that PACAP and CGRP may have non-overlapping pharmacology with respect to migraine-associated symptoms. PACAP and its three known receptors (PAC1, VPAC1 and VPAC2) are expressed in the regions of the brain known to be associated with migraine symptomatology. By blocking the ligand, ALD1910 prevents the signaling of PACAP by all three receptors, since they are all associated with migraine symptoms.

We recently completed preclinical studies showing ALD1910 was effective in blocking the effects of endogenous PACAP, in a dose-dependent manner, in an animal model of neurogenic vasodilation. We believe this further validates our view in developing new therapies that blocking the ligand versus blocking only one involved receptor is likely to be a more effective approach to treating migraine disease.

We believe ALD1910 holds potential as a migraine treatment and could provide an important new therapeutic option to migraine patients and their physicians. We are advancing ALD1910 through toxicology studies to enable Phase 1 studies, which we expect to initiate by the end of 2019 and subsequently support an IND with the FDA.

Eptinezumab pivotal trial results

Overview

We believe the clinical data obtained to date in our development program for eptinezumab exhibits the potential of eptinezumab to transform the preventative treatment paradigm for patients living with migraine. We initiated our pivotal trial program for eptinezumab in October 2015 with PROMISE 1, a pivotal clinical trial evaluating the safety and efficacy of eptinezumab administered via infusion once every 12 weeks for one year in approximately 888 patients with frequent episodic migraine. PROMISE 1 was a double-blind, placebo-controlled Phase 3 clinical trial in which patients were randomized equally to either one of three doses of eptinezumab or placebo administered via infusion once every 12 weeks across sites in the United States and Europe. Patient recruitment for PROMISE 1 was completed in October 2016, and top-line data from PROMISE 1 was reported in June 2017.

In November 2016, Alder initiated a second pivotal clinical trial, PROMISE 2, evaluating the safety and efficacy of eptinezumab in patients with chronic migraine. This study was a double-blind, placebo-controlled Phase 3 clinical trial that enrolled 1,072 patients randomized to either one of two dose levels of eptinezumab or placebo administered via infusion once every 12 weeks for six months across sites in the United States and Europe. We reported top-line data from PROMISE 2 in January 2018.

PROMISE 2 (chronic migraine)

This Phase 3 double-blind, placebo-controlled, randomized global clinical trial evaluating the safety and efficacy of eptinezumab for chronic migraine prevention. In the study, 1,072 patients were randomized to receive eptinezumab (300mg or 100mg) or placebo administered via infusion once every 3 months for 6 months. To be eligible for the trial, patients must have experienced at least 15 headache days per month, of which at least eight met criteria for migraine. Patients that participated in the trial had an average of 16.1 migraine days per month at baseline. The primary endpoint was the mean change from baseline in monthly migraine days over

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the first 12 weeks of follow-up. Secondary study endpoints assessed through 12 weeks included reduction from baseline (the daily mean migraine prevalence over the 28-day screening period) in daily migraine prevalence on Day 1 and Days 1-28 post-infusion, reductions of ³ 50%, ³75%, and 100% from baseline in mean monthly migraine days, change from baseline in mean monthly acute migraine-specific (triptan or ergotamine) medication days, and reductions from baseline in patient-reported impact scores on the Headache Impact Test (HIT-6).

In January 2018, we announced that eptinezumab met primary and all key secondary endpoints with very high statistical significance vs. placebo. The primary endpoint, demonstrating statistically significant reductions in mean monthly migraine days from baseline (average of approximately 16.1 days) over weeks 1 through 12 was met with a reduction of 8.2 monthly migraine days for 300mg ($p<0.0001$) and 7.7 days for 100mg ($p<0.0001$) compared to a reduction of 5.6 days for placebo. The key secondary endpoints and other endpoints met include:

Migraine prevalence on Day 1 post-infusion: 52 percent reduction (300mg, $p<0.0001$) and 50 percent reduction (100mg, $p=0.0001$) from baseline in migraine risk on Day 1 post-infusion compared to 27 percent for placebo (p-values reflect Day 1 prevalence rate comparison between eptinezumab vs. placebo).

50% responder rates for weeks 1 through 12: 61.4 percent (300mg, $p<0.0001$) and 57.6 percent (100mg, $p<0.0001$) of patients achieved 50 percent or greater reduction in mean monthly migraine days from baseline compared to 39.3 percent for placebo.

75% responder rates for weeks 1 through 4: 36.9 percent (300mg, $p<0.0001$) and 30.9 percent (100mg, $p<0.0001$) of patients achieved a 75 percent or greater reduction in mean monthly migraine days from baseline, compared to 15.6 percent for placebo.

75% responder rates for weeks 1 through 12: 33.1 percent (300mg, $p<0.0001$) and 26.7 percent (100mg, $p=0.0001$) of patients achieved a 75 percent or greater reduction in mean monthly migraine days from baseline, compared to 15.0 percent for placebo.

100% responder rates for weeks 1 through 12 (post hoc analysis): A 100% reduction in mean monthly migraine days (reducing the number of migraine days per month to 0) was achieved by 15.1 percent (300mg, $p<0.0001$, unadjusted) and 10.8 percent (100mg, $p<0.0001$, unadjusted) of patients treated on average, for months 1, 2 and 3, compared to 5.1 percent for placebo.

All other pre-specified key secondary endpoints were met with very high statistical significance.

In June 2018, we presented updated data from PROMISE 2 at the American Headache Society 60th Annual Scientific Meeting, including six-month efficacy data. Reductions in mean monthly migraine days were either sustained or further reduced after a second quarterly infusion, with 8.8 and 8.2 fewer mean monthly migraine days for patients treated with 300mg and 100mg of eptinezumab, respectively, compared to 6.2 fewer mean monthly migraine days for placebo-treated patients.

After the second quarterly infusion, a 100% reduction in mean monthly migraine days was achieved by 20.8 percent (300mg) and 17.8 percent (100mg) of patients treated on average, for months 4, 5 and 6, compared to 9.3 percent for placebo.

After the second quarterly infusion, 64.0 percent and 61.0 percent of patients treated with 300mg or 100mg of eptinezumab, respectively, achieved a 50 percent or greater reduction of mean monthly migraine days from baseline, compared to 44.0 percent for placebo; and 43.1 percent and 39.3 percent of patients treated with 300mg or 100mg of eptinezumab, respectively, achieved a 75 percent or greater reduction of mean monthly migraine days from baseline, compared to 23.8 percent for placebo-treated patients.

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The observed safety profile in PROMISE 2 was consistent with previously reported eptinezumab studies. Adverse event rates among eptinezumab-treated subjects were similar to placebo-treated subjects. The most commonly reported adverse events for eptinezumab, occurring at an incidence of 2.0% or greater, were nasopharyngitis (7.4 percent), upper respiratory infection (4.8 percent), nausea (2.5 percent) and urinary tract infection (2.8 percent), sinusitis (2.3 percent), migraine (2.0 percent) and fatigue (2.0 percent).

PROMISE 1 (episodic migraine)

This Phase 3 double-blind, placebo-controlled, randomized global clinical trial evaluated the safety and efficacy of eptinezumab for episodic migraine prevention. In the study, 888 patients were randomized to receive eptinezumab (300mg, 100mg or 30mg), or placebo administered by infusion once every 12 weeks for a full year. To be eligible for the trial, patients must have experienced at least 14 headache days per month, of which at least four met the criteria for migraine. The primary endpoint was the mean change from baseline in monthly migraine days over the 12-week, double-blind treatment period. Key secondary study endpoints assessed through 12 weeks included reduction from baseline (the daily mean migraine prevalence over the 28-day screening period) in migraine prevalence on Day 1 and reduction of at least 50% and 75% from baseline in mean monthly migraine days.

In June 2017, we announced that eptinezumab met primary and key secondary endpoints with very high statistical significance vs. placebo. The primary endpoint, demonstrating statistically significant reductions in monthly migraine days from baseline (average of 8.6 days) over weeks 1 through 12, was met with a reduction of 4.3 monthly migraine days for 300mg ($p=0.0001$) and 3.9 days for 100mg ($p=0.0182$) compared to an average 3.2 days for placebo. The key secondary endpoints and other endpoints met included:

Secondary endpoints evaluated over the first 12 weeks following the first quarterly dose include:

Migraine prevalence Day 1 post-infusion: 54.9 percent reduction (300mg, $p=0.0159$, unadjusted), and 52.3 percent (100mg, $p=0.0312$, unadjusted) in migraine risk from baseline on Day 1 post-infusion compared to 24.5 percent for placebo.

50% responder rates for weeks 1 through 12: 56.3 percent (300mg, $p=0.0001$) and 49.8 percent (100mg, $p=0.0085$, unadjusted) of patients achieved 50 percent or greater reduction in monthly migraine days from baseline compared to 37.4 percent for placebo.

75% responder rates for weeks 1 through 4: 31.5 percent (300mg, $p=0.0066$) and 30.8 percent (100mg, $p=0.0112$) of patients achieved 75 percent or greater reduction in monthly migraine days from baseline compared to 20.3 percent for placebo.

75% responder rates for weeks 1 through 12: 29.7 percent (300mg, $p=0.0007$) and 22.2 percent (100mg, not statistically significant) of patients achieved 75 percent or greater reduction in monthly migraine days from baseline compared to 16.2 percent for placebo.

Secondary endpoints demonstrated sustained or increased efficacy following a second quarterly dose of eptinezumab:

75% responder rates for weeks 13 through 24: 40.1 percent (300mg) and 33.5 percent (100mg) of patients achieved 75 percent or greater reduction in monthly migraine days from baseline compared to 24.8 percent for placebo.

100% responder rates for weeks 1 through 12 (post hoc analysis): A 100% reduction in monthly migraine days (reducing the number of migraine days per month to 0) was achieved by 16.8 percent (300mg) and

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11.4 percent (100mg) of patients treated on average, for months 1, 2 and 3, compared to 9.1 percent for placebo.

100% responder rates for weeks 13 through 24 (post hoc analysis): A 100% reduction in monthly migraine days (reducing the number of migraine days per month to 0) was achieved by 24.5 percent (300mg) and 19.7 percent (100mg) of patients treated on average, for months 4, 5 and 6, compared to 14.3 percent for placebo.

In June 2018, we presented updated data from PROMISE 1 at the American Headache Society 60th Annual Scientific Meeting, including year-long efficacy data. At one year after the third and fourth quarterly infusions, patients treated with 300mg or 100mg of eptinezumab experienced sustained or increased efficacy with 5.4 and 4.6 fewer monthly migraine days, respectively, from baseline compared to 4.0 fewer monthly migraine days for placebo-treated patients.

After the third and fourth quarterly infusions, a 100% reduction in monthly migraine days was achieved by 30.7 percent (300mg) and 26.8 percent (100mg) of patients treated on average, for months 7, 8, 9, 10, 11 and 12, compared to 20.5 percent for placebo. After the fourth quarterly infusion, a 100% reduction in monthly migraine days was achieved by 33.8 percent (300mg) and 27.7 percent (100mg) of patients treated on average, for months 10, 11 and 12, compared to 22.7 percent for placebo.

At one year after the third and fourth infusions, 69.8 percent and 64.7 percent of patients treated with 300mg or 100mg of eptinezumab, respectively, achieved 50 percent or greater reduction of monthly migraine days from baseline over months 10 through 12, compared to 55.4 percent for placebo; and 54.1 percent and 39.4 percent of patients treated with 300mg or 100mg of eptinezumab, respectively, achieved 75 percent or greater reduction of monthly migraine days from baseline over months 10 through 12, compared to 39.6 percent for placebo.

The observed safety profile in PROMISE 1 was consistent with previously reported eptinezumab studies. Adverse event rates among eptinezumab-treated subjects were similar to placebo-treated subjects. The most commonly reported adverse events for eptinezumab, occurring at an incidence of 2.0% or greater, were upper respiratory tract infection (10.5 percent), nasopharyngitis (6.8 percent), sinusitis (3.6 percent), dizziness (3.3 percent), fatigue (3.2 percent), nausea (2.9 percent), bronchitis (2.7 percent), cough (2.3 percent), diarrhea (2.3 percent), influenza (2.3 percent) and back pain (2.1 percent).

Corporate information

We were incorporated in Delaware in May 2002 as Alder BioPharmaceuticals, Inc. Our headquarters are located at 11804 North Creek Parkway South, Bothell, WA 98011, and our telephone number is (425) 205-2900. Our website address is www.alderbio.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into this prospectus supplement and should not be considered to be part of this prospectus supplement.

Alder and the Alder logo are the property of Alder BioPharmaceuticals, Inc. This prospectus supplement and the accompanying prospectus contain references to our trademarks and trade names and to trademarks and trade names belonging to other entities. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

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The offering

Common stock offered by us	11,304,348 shares of common stock.
Option to purchase additional shares	The underwriters have been granted an option to purchase up to an aggregate of 1,695,652 shares of common stock from us. This option is exercisable, in whole or in part, for a period of 30 days following the date of this prospectus supplement.
Concurrent private placement	Certain institutional and other accredited investors affiliated with or managed by Redmile Group, LLC, collectively, Redmile, have agreed to purchase \$20.0 million of shares of common stock in a private placement at a sale price equal to the public offering price of our common stock in this offering.
Common stock to be outstanding immediately after this offering and the concurrent private placement	81,454,054 shares (or 83,149,706 shares if the underwriters exercise their option to purchase additional shares in full and purchase all such shares from us).
Use of proceeds	We estimate the net proceeds from this offering and the concurrent private placement to be approximately \$140.7 million, after deducting underwriting discounts and commissions, placement agent fees and estimated offering expense payable by us. We expect to use the proceeds of this offering for the commercialization of eptinezumab up to and through launch and the manufacture of commercial supply for eptinezumab, and may also use net proceeds for future eptinezumab clinical trials, the development of ALD1910 and for working capital and general corporate purposes. See the section of the prospectus titled Use of proceeds for a more complete description of the intended use of proceeds from this offering.
Risk factors	See Risk factors beginning on page S-8 and other information included and incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors that you should carefully consider before deciding to invest in our common stock.
Nasdaq symbol	ALDR.
The number of shares of our common stock to be outstanding after this offering and the concurrent private placement is based on 68,410,576 shares of our common stock outstanding as of December 31, 2018 and excludes:	

10,213,538 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2018, at a weighted-average exercise price of \$18.30 per share;

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796,798 shares of common stock issuable upon the vesting of restricted stock units outstanding as of December 31, 2018;

1,238,727 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan;

1,450,000 shares of common stock reserved for future issuance under our 2018 Inducement Award Plan;

1,707,656 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan; and

760,753 shares of common stock reserved for future issuance upon the conversion of our Class A-1 Convertible Preferred Stock.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the underwriters' option to purchase additional shares of common stock.

Concurrent private placement

Redmile, which is affiliated with one of our directors, Jeremy Green, and which is our largest stockholder, has agreed to purchase \$20.0 million of shares of common stock in a private placement exempt from the registration requirements of the Securities Act of 1933, as amended, at a sale price equal to the public offering price of our common stock in this offering, or the concurrent private placement. The underwriters will serve as placement agents for the concurrent private placement and receive a placement agent fee equal to a percentage of the total purchase price of the private placement shares, which percentage will be equal to the percentage discount the underwriters will receive on shares sold in this public offering. The consummation of the concurrent private placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions. However, the consummation of this offering is not contingent on the consummation of the concurrent private placement. In addition, in connection with the concurrent private placement, we expect to enter into a registration rights agreement with Redmile. Under the registration rights agreement, as proposed, we would agree that, by the day after the expiration of the 60-day lock-up period applicable to us and described under the heading "Underwriting," we will register for resale under the Securities Act of 1933, as amended, or the Securities Act, the shares of our common stock issued to Redmile in the concurrent private placement.

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Risk factors

Investing in our common stock involves high degrees of significant risk. Before acquiring any of our common stock, you should carefully consider the following risks, as well as other information in this prospectus supplement and the accompanying prospectus, including information incorporated by reference herein and therein, and any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually materializes, our operating results, financial condition and liquidity could be materially adversely affected. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. As a result, the trading price of our common stock could decline, and you may lose all or part of your investment.

Risks related to our need for additional financing and our financial results

We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future.

We are a clinical-stage biopharmaceutical company. We do not currently have any products approved for sale, and we continue to incur significant research and development and general and administrative expenses. We have incurred significant operating losses in the past and expect to incur substantial and increasing losses for the foreseeable future. For the year ended December 31, 2018, our net loss applicable to common stockholders was \$331.9 million, and as of December 31, 2018, we had an accumulated deficit of \$963.9 million.

To date, we have devoted substantially all of our efforts to research and development, including clinical trials, and we have not commercialized any product candidates. We anticipate that our expenses will increase as we:

seek regulatory approval for eptinezumab;

manufacture eptinezumab at commercial scale;

establish a sales, marketing, medical affairs and distribution infrastructure for eptinezumab;

enhance operational, financial and information management systems and hire additional personnel, including personnel to support our commercialization efforts for eptinezumab;

undertake additional clinical trials for eptinezumab; and

continue the research and development of, and undertake any of the foregoing activities for, ALD1910 and our other product candidates. To be profitable in the future, we and any of our future collaborators must succeed in developing and eventually commercializing products with significant market potential. This will require success in a range of activities, including advancing product candidates, completing clinical trials of product candidates, obtaining regulatory approval and reimbursement coverage for these product candidates and manufacturing, marketing and selling those products for which regulatory approval is obtained. We are only in the preliminary stages of some of these activities. We and any of our future collaborators may not succeed in these activities and may never generate revenues that are sufficient to be profitable in the future.

Drug development is a highly speculative undertaking and involves a substantial degree of uncertainty. We have never generated any revenues from product sales and may never be profitable.

We have devoted substantially all of our financial resources and efforts to developing our technology platform, identifying product candidates and conducting preclinical studies and clinical trials for our product candidates.

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We have not completed the development of any products and have never generated revenues from the sale of any products.

Our ability to generate revenues and achieve profitability depends in large part on our ability, on our own or with any of our future collaborators, to successfully complete the development of, obtain the necessary regulatory approvals for, and commercialize our product candidates. We do not anticipate generating revenues from sales of products until 2020 at the earliest, if at all. Our ability to generate future revenues from product sales depends on our and any of our future collaborators' success in:

obtaining regulatory approval for eptinezumab;

successfully establishing sales, marketing and distribution infrastructure for eptinezumab;

establishing and maintaining supply and manufacturing relationships with third parties;

launching and commercializing eptinezumab, if approved;

achieving and maintaining an acceptable safety profile for eptinezumab following approval;

achieving a favorable cost of goods sold;

obtaining coverage and adequate reimbursement for eptinezumab from third-party payors;

effectively competing with other therapies, including capturing market share;

obtaining regulatory approvals for ALD1910 or any future product candidates that we discover and successfully develop;

entering into collaboration agreements with third parties with respect to eptinezumab, ALD1910 or our other product candidates for their development and commercialization in the United States or in international markets, and the continued financial and other support of these third parties under such collaboration agreements; and

maintaining, protecting, expanding and enforcing our intellectual property, including intellectual property we license from third parties. Because of the numerous risks and uncertainties associated with biologic product development, we are unable to predict the timing or amount of increased expenses and when we will be able to achieve or maintain profitability, if ever. In addition, our expenses could increase beyond expectations if we are required by the U.S. Food and Drug Administration, or FDA, or foreign regulatory agencies, to perform studies and trials in addition to those that we currently anticipate, or if there are any delays in our or any of our future collaborators' clinical trials or the development of any of our product candidates. If one or more of the product candidates that we independently develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing such product candidates.

We will need additional funds to support our operations, and such funding may not be available to us on acceptable terms, or at all, which would force us to delay, reduce or suspend our research and development programs and other operations or commercialization efforts.

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We are primarily focused on the advancement of eptinezumab through the clinical development process to a commercial launch, as well as the advancement of the ALD1910 program and future product candidates. The completion of the development and the potential commercialization of our product candidates, should they receive regulatory approval, will require substantial funds.

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As of December 31, 2018, we had \$407.4 million in cash, cash equivalents and investments, and \$5.0 million in restricted cash. We believe that our available cash, cash equivalents, investments and restricted cash as of December 31, 2018 will be sufficient to meet our projected operating requirements into 2020 and the anticipated commercial launch of eptinezumab. These operating requirements consist principally of expenditures related to the establishment of the eptinezumab commercial drug supply chain, continued build-out of our commercial organization (e.g., marketing, sales, medical affairs, payor access, information technology) and pre-launch market readiness activities. We have based our estimate on the timing for our projected expenditures on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. We will need additional funding to execute or sustain the commercial launch of eptinezumab. Furthermore, our operating plans may change, and we may need additional funds to meet operational needs and capital requirements for product development and commercialization of eptinezumab sooner than planned. We will also need to obtain substantial additional sources of funding to develop and commercialize ALD1910 and our other product candidates.

Our future financing requirements will depend on many factors, some of which are beyond our control, including the following:

the timing of, and costs involved in, seeking and obtaining approvals from the FDA and other regulatory authorities;

the costs of commercialization activities for eptinezumab if it receives regulatory approval, including sales, marketing and distribution infrastructure;

the degree and rate of market acceptance of eptinezumab;

repayment of the 2.5% Convertible Senior Notes due 2025, or the Convertible Notes, which mature on February 1, 2025, unless earlier repurchased, redeemed or converted;

the rate of progress, recruitment and cost of future clinical trials for eptinezumab, ALD1910 and any future product candidates;

our ability to enter into additional collaboration, licensing, commercialization or other arrangements and the terms and timing of such arrangements; and

the emergence of competing technologies or other adverse market developments.

Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates and the extent to which we may enter into additional collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials or with commercialization of our product candidates.

We do not have any material committed external source of funds or other support for our development efforts. Until we can generate sufficient revenues to finance our cash requirements, which we may never do, we expect to finance future cash needs through equity financings, such as this offering, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. There are no assurances that we will be able to raise sufficient amounts of funding on acceptable terms, or at all. If we raise additional capital through equity financings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financings, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, buying or selling assets, making capital expenditures or declaring dividends. If we raise additional capital through marketing and

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distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish certain valuable rights to our product candidates, technologies, future revenue streams or research programs or grant licenses on terms that may not be favorable to us.

Furthermore, we may seek additional capital beyond this offering due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. In January 2019, we entered into an equity distribution agreement to commence an at-the-market offering program, or the ATM program, under which we are permitted to offer and sell, from time to time, shares of our common stock having a maximum aggregate offering price of up to \$100 million.

A failure to raise additional funding or to effectively implement cost reductions could harm our business, results of operations and future prospects.

Our significant level of indebtedness could limit cash flow available for our operations and expose us to risks that could adversely affect our business, financial condition and results of operations.

We incurred significant indebtedness and substantial debt service requirements as a result of our offering of the Convertible Notes in February 2018. In the future, we may incur additional indebtedness, including secured indebtedness, in connection with financing acquisitions, strategic transactions or for other purposes. The indenture governing the Convertible Notes does not limit the amount of debt that we or our subsidiaries may incur. Our indebtedness increases the risk that we may be unable to generate enough cash to pay amounts due in respect of our indebtedness, including the Convertible Notes.

Our indebtedness could have important consequences to you and significant effects on our business. For example, it could:

make it more difficult for us to satisfy our debt obligations, including the Convertible Notes;

increase our vulnerability to general adverse economic and industry conditions;

require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures and other general corporate purposes;

limit our flexibility in planning for, or reacting to, changes in our business, the industry in which we operate or the general economy;

restrict us from exploiting business opportunities;

heighten our vulnerability to downturns in our business, our industry or in the general economy, and restrict us from exploiting business opportunities or making acquisitions;

limit management's discretion in operating our business;

place us at a competitive disadvantage compared to our competitors that have less indebtedness; and

limit our availability to borrow additional funds for working capital, capital expenditures, acquisitions, debt service requirements, execution of our business strategy or other general purposes.

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In addition, the agreements that may govern any future indebtedness that we may incur may contain financial and other restrictive covenants that will limit our ability to engage in activities that may be in our long-term best interests. Our failure to comply with those covenants could result in an event of default that, if not cured or waived, could result in the acceleration of all of our debt.

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We may not be able to generate sufficient cash to service the Convertible Notes and any other debt we may incur, and may be forced to take other actions to satisfy our obligations under our debt, which may not be successful.

Our ability to make scheduled payments on or to refinance our debt obligations, including the Convertible Notes, and to fund future capital expenditures depends on our ability to generate cash in the future and our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We cannot assure you that we will achieve or maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on (as well as any cash due upon conversion of) our debt, including the Convertible Notes.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to adopt one or more alternatives, such as reducing or delaying investments and capital expenditures, or to selling assets, seeking additional capital or restructuring or refinancing our debt, including the Convertible Notes. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. If our operating results and available cash are insufficient to meet our debt service obligations, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate those dispositions or to obtain the proceeds that we could realize from them, and these proceeds may not be adequate to meet any debt service obligations then due. Further, we may need to refinance all or a portion of our debt on or before maturity, and we cannot assure you that we will be able to refinance any of our debt on commercially reasonable terms or at all.

The accounting method for convertible debt securities that may be settled in cash, such as the Convertible Notes, could have a material effect on our reported financial results.

Pursuant to Accounting Standards Codification Subtopic 470-20, *Debt with Conversion and Other Options*, which we refer to as ASC 470-20, an entity must separately account for the liability and equity components of the convertible debt instruments (such as the Convertible Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet and the value of the equity component would be treated as original issue discount for purposes of accounting for the debt component of the Convertible Notes. As a result, we will be required to record a greater amount of non-cash interest expense in current periods presented as a result of the amortization of the discounted carrying value of the Convertible Notes to their face amount over the term of the Convertible Notes. We will report greater losses in our financial statements because ASC 470-20 will require interest to include both the current period's amortization of the debt discount and the instrument's coupon interest, which could adversely affect our reported or future financial results, the market price of our common stock and the trading price of the Convertible Notes. In addition, there are features within the terms that are considered to be embedded derivatives and could be recorded on the balance sheet at fair value as a liability should the value of the derivative increase to be more than inconsequential. We will be required to recognize changes in the derivative's fair value from period to period in other income (expense) in our statements of operations.

In addition, under certain circumstances, convertible debt instruments (such as the Convertible Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the Convertible Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Convertible Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is

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accounted for as if the number of our common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that we will be able to use the treasury stock method or the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Convertible Notes, then our diluted earnings per share would be adversely affected.

The conditional conversion feature of the Convertible Notes, if triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Convertible Notes is triggered, holders of Convertible Notes will be entitled to convert the Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

Our ability to use our net operating loss and tax credit carryforwards to offset future taxable income may be subject to certain limitations.

As of December 31, 2018, we had U.S. net operating loss carryforwards, or NOLs, of \$914.7 million, for which we have recorded a full valuation allowance, which may be used to offset future taxable income. In addition, we have U.S. research and development tax credit carryforwards of \$18.3 million. The pre-2017 NOLs and tax credit carryforwards expire in various years beginning in 2024, if not utilized, while 2018 NOLs can be carried forward indefinitely. Utilization of the NOLs and tax credit carryforwards may be subject to an annual limitation due to historical or future ownership change rules pursuant to Sections 382 and 383 of the Internal Revenue Code, or the Code. We performed a section 382 ownership analysis through 2018 and determined that an ownership change occurred in 2015. Based on the analysis performed, however, we do not believe that the Section 382 annual limitation will impact our ability to utilize the tax attributes that existed as of the date of the ownership change in a material manner. If we have experienced an ownership change in the past or will experience an ownership change as a result of future changes in our stock ownership, some of which changes are outside our control, the tax benefits related to the NOLs and tax credit carryforwards may be further limited or lost.

A key provision of the Tax Cuts and Jobs Act of 2017 (TCJA) made changes to the existing NOL deduction and carryforward credit for companies with these deferred tax assets. Any NOL generated in years after December 31, 2017 will now be allowed to be carried forward indefinitely, but will be limited to 80% of taxable income. Carryback of post-2017 NOLs will not be allowed, however NOLs generated prior to the TCJA are still subject to their existing expiration periods and permitted to be carried back for two years.

The recently passed comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law new tax legislation, the Tax Cuts and Jobs Act of 2017, or the TCJA, that significantly changes the Code. The TCJA, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, immediate deductions for certain new investments instead of

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deductions for depreciation expense over time, and modifying or repealing many business deductions and credits. Any federal net operating loss carryovers created in 2018 and thereafter will be carried forward indefinitely pursuant to the TCJA. We continue to examine the impact this tax legislation may have on our business. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the TCJA is uncertain and our business and financial condition could be adversely affected. The impact of the TCJA on holders of our securities is also uncertain and could be adverse.

Risks related to eptinezumab and our other product candidates

If eptinezumab is not successfully commercialized, our business will be harmed.

We have invested a significant portion of our efforts and financial resources into the development of eptinezumab to prevent migraines. Our ability to generate revenues from products, which we do not expect to occur until 2020 at the earliest, if at all, will depend heavily on the successful development, regulatory approval and commercialization of eptinezumab. The success of eptinezumab and our other product candidates will depend on several factors, including the following:

successful enrollment in, and completion of, clinical trials;

our ability to reach agreements with the FDA and other regulatory authorities on the appropriate regulatory path for approval for eptinezumab or other product candidates;

receipt of approvals from the FDA and similar regulatory authorities outside the United States for eptinezumab or other product candidates;

establishing and maintaining supply and manufacturing relationships with third parties;

successfully launching sales, marketing and distribution of any product candidate that may be approved, whether alone or in collaboration with others;

acceptance of any approved product by the medical community, third-party payors and patients and others involved in the coverage and reimbursement process, such as the Centers for Medicare & Medicaid Services, or CMS, in the United States and the National Institute of Clinical Excellence in the United Kingdom;

achieving a favorable cost of goods sold;

effectively competing with other therapies, including capturing market share;

achieving a continued acceptable safety profile of the product following approval; and

obtaining, maintaining, enforcing and defending intellectual property rights and claims, including intellectual property we license from third parties.

If we do not achieve one or more of these factors in a timely manner, or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would harm our business.

If clinical trials of eptinezumab or any of our other product candidates fail to demonstrate safety and efficacy to the satisfaction of the FDA or similar regulatory authorities outside the United States or do not otherwise produce positive results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

Before obtaining regulatory approval for the sale of eptinezumab or any of our other product candidates, we or any of our future collaborators must conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical trials are expensive, difficult to design and implement, can take

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many years to complete and are uncertain as to outcome. A failure of one or more of such clinical trials could occur at any stage of evaluation. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results.

In some cases, we utilize novel mechanisms of action to treat diseases that have not previously been addressed by antibody therapies. We or any of our future collaborators may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our or any of our future collaborators' ability to receive regulatory approval or commercialize our product candidates, including the following:

clinical trials of our product candidates may produce negative or inconclusive results, and we or any of our future collaborators may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;

if serious adverse events are identified during clinical trials of any of our product candidates that are attributable to such product candidate, we or any of our future collaborators may need to abandon development of that product candidate;

the number of patients required for clinical trials of our product candidates may be larger than we or any of our future collaborators anticipate, enrollment in these clinical trials may be insufficient or slower than anticipated or patients may drop out of these clinical trials at a higher rate than anticipated;

the cost of clinical trials of our product candidates may be greater than anticipated;

third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us or any of our future collaborators in a timely manner, or at all;

we or any of our future collaborators might have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that our product candidates have unanticipated serious side-effects or other unexpected characteristics or that the patients are being exposed to unacceptable health risks;

regulators may not approve our or any of our future collaborators' proposed clinical development plans;

regulators or institutional review boards may not authorize us, any of our future collaborators or our investigators to commence a clinical trial or conduct a clinical trial at a prospective site;

regulators or institutional review boards may require that we, any of our future collaborators or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements; and

the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate.

If we or any of our future collaborators are required to conduct additional clinical trials or other testing of our product candidates beyond those currently contemplated, if we or any of our future collaborators are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we or any of our future collaborators may:

be delayed in obtaining regulatory approval for our product candidates;

not obtain regulatory approval at all;

obtain regulatory approval for indications that are not as broad as intended;

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have the product removed from the market after obtaining regulatory approval;

be subject to additional post-marketing testing requirements; or

be subject to restrictions on how the product is distributed or used.

Our product development costs will also increase if we experience delays in testing or approvals. We do not know whether any clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant clinical trial delays also could shorten any periods during which we or any of our future collaborators may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we or any of our future collaborators do, which would impair our or any of our future collaborators' ability to commercialize our product candidates and harm our business and results of operations.

The development and commercialization of biologic products is subject to extensive regulation, and we may not obtain regulatory approvals for eptinezumab or any of our other product candidates.

The clinical development, manufacturing, labeling, packaging, storage, recordkeeping, advertising, promotion, export, import, marketing and distribution and other possible activities relating to eptinezumab, ALD1910 and any other product candidate that we may develop in the future are subject to extensive regulation in the United States. Biologics, like eptinezumab, require the submission of a Biologics License Application, or BLA, to the FDA and such product candidates are not permitted to be marketed in the United States until approval from the FDA of a BLA for that product has been obtained. A BLA must be supported by extensive preclinical and clinical data, as well as extensive information regarding chemistry, manufacturing and controls, or CMC, sufficient to demonstrate the safety, purity, potency and effectiveness of the applicable product candidate to the satisfaction of the FDA. On February 21, 2019, we submitted a BLA to the FDA for eptinezumab for the prevention of migraine. Prior to the submission of this BLA, we had never submitted an application for approval for any product. We have never obtained FDA approval for any product. This lack of experience may impede our ability to obtain FDA approval in a timely manner, if at all, for eptinezumab, ALD1910 and our future product candidates. The FDA may not accept our BLA for filing and instead issue a refusal-to-file letter or we could decide to withdraw our BLA if we determine that it will not be accepted for filing, which indicates that the BLA is not sufficiently complete so as to permit substantive review by the agency. Even if accepted for filing, the BLA may be subject to advisory committee input, which may be unfavorable to approval and may adversely impact our stock price. FDA may extend or be unable to meet its PDUFA goal date for the BLA, and may issue a complete response letter, rather than an approval.

Regulatory approval of a BLA is not guaranteed, and the approval process is an expensive and uncertain process that may take several years. The FDA and foreign regulatory entities also have substantial discretion in the approval process. The number and types of preclinical studies and clinical trials that will be required for BLA approval varies depending on the product candidate, the disease or the condition that the product candidate is designed to target and the regulations applicable to any particular product candidate. Data are subject to varying interpretation and the FDA may not agree that our clinical data support that eptinezumab is safe, pure and potent for the prevention of migraine. Despite the time and expense associated with preclinical studies and clinical trials, failure can occur at any stage, and we could encounter problems that require us to repeat or perform additional preclinical studies or clinical trials or generate additional CMC data. The FDA and similar foreign authorities could delay, limit or deny approval of a product candidate for many reasons, including because they:

may not deem the product candidate to be adequately safe or effective;

may not find the data from preclinical studies, clinical trials or CMC data to be sufficient to support a claim of safety and efficacy;

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may not approve the manufacturing processes or facilities associated with the product candidate;

may conclude that the long-term stability of the formulation of the drug product for which approval is being sought has not been sufficiently demonstrated;

may change approval policies or adopt new regulations; or

may not accept a submission due to, among other reasons, the content or formatting of the submission.

To market any biologics outside of the United States, we and any of our future collaborators must comply with the numerous and varying regulatory and compliance related requirements of other countries. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods, including obtaining reimbursement and pricing approval in select markets. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks associated with FDA approval as well as additional, presently unanticipated, risks. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others, including the risk that our product candidates may not be approved for all indications requested and that such approval may be subject to limitations on the indicated uses for which the product may be marketed.

The results of clinical trials conducted at sites outside the United States may not be accepted by the FDA and the results or clinical trials conducted at sites inside the United States may not be accepted by international regulatory authorities.

We have conducted, and may in the future choose to conduct, our clinical trials outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well-designed and conducted and performed by qualified investigators in accordance with ethical principles. The study population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. Generally, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to label the product in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. There can be no assurance the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from our international clinical trials, or if international regulatory authorities do not accept the data from our U.S. clinical trials, it would likely result in the need for additional trials, which would be costly and time-consuming and could delay or permanently halt the development of a product candidate.

We face substantial competition, and others may discover, develop or commercialize products before or more successfully than we do.

The development and commercialization of new therapeutic products is highly competitive. We face competition with respect to eptinezumab and our other current product candidates, and will face competition with respect to product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of biosimilar products, which are expected to become available over the coming years. Many of our competitors are large pharmaceutical companies that have a greater ability to reduce prices for their competing drugs in an effort to maintain or gain market share and undermine the value proposition that drugs

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commercialized by us might otherwise be able to offer to payors, which could result in our product candidates being excluded from payor formularies. In addition, payors could require patients to have tried and failed our competitors' products before they provide reimbursement for our product candidates, which could shrink the market size for our product candidates.

Potential competitors also include academic institutions, government agencies and other public and private organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization. Many of these competitors are attempting to develop therapeutics for our target indications.

Eptinezumab, if approved, will compete with three CGRP inhibiting therapies that received FDA approval in 2018 for the preventive treatment of migraine in adults, with data spanning both episodic and chronic migraine: Amgen's Aimovig (erenumab), Lilly's Emgality (galcanezumab) and Teva's Ajovy (fremanezumab). Each of these agents disrupts CGRP signaling either by binding to the CGRP receptor (Aimovig) or to the CGRP ligand (Ajovy and Emgality), and all are self-administered via subcutaneous injection either monthly (Aimovig, Emgality and Ajovy) or quarterly (Ajovy). In clinical studies, these agents reduced monthly migraine days by 2.9–6.6 days, with efficacy documented 1 month following injection. While we believe that there is a significant opportunity for eptinezumab, our penetration could be limited by the availability of these therapies, which will have been on the market well in advance of eptinezumab if approved. Eptinezumab will also compete with beta blockers that are approved for prevention of episodic and chronic migraine such as propranolol, marketed by Wyeth, and other treatments such as topiramate, marketed by Johnson & Johnson, and sodium valproate, marketed by Divalproex. In addition, Botox, marketed by Allergan, is approved for the prevention of chronic migraine. We are also aware of several oral small-molecule CGRP inhibiting therapies currently in development that if approved could compete with eptinezumab, including Allergan's atogepant and Biohaven's rimegepant and BHV-3500. Patients also may be elect to use cheaper generic abortive medications such as triptans, which could limit eptinezumab market penetration in the migraine prevention marketplace.

Many of our competitors, including a number of large pharmaceutical companies that compete directly with us, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Our competitors may develop products that are more effective, safer, more convenient to administer or less costly than any that we are developing or that would render our product candidates obsolete or non-competitive. It is possible that our competitors might receive FDA or other regulatory approval for their products before us. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient enrollment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Delays in the enrollment of patients in our clinical trials could increase our development costs and delay completion of the trials and delays in enrollment of patients in any of our future collaborators' clinical trials could delay completion of any of our future collaborators' trials.

We may not be able to initiate or continue clinical trials for any of our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or other regulatory authorities. Even if we are able to enroll a sufficient number of patients in our clinical trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our trials may be delayed or our trials could become too expensive to complete.

We can provide no assurance that we will be able to enroll patients in any ongoing or planned clinical trial at a sufficient pace to complete the clinical trials within our projected time frame. Completing ongoing and future

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migraine trials will require us to continue to activate new clinical trial sites and to enroll patients at forecasted rates at both new and existing clinical trial sites. Our forecasts regarding the rates of clinical site activation and patient enrollment at those sites are based on a number of assumptions, including assumptions based on experience with prior eptinezumab clinical trials. However, there can be no assurance that those forecasts will be accurate or that we will complete our ongoing and planned eptinezumab trials on schedule. During the initial months of our clinical trials, the number of clinical sites activated and the number of patients enrolled at each clinical site per month could be lower than we have forecasted and, as a result, we might need to make a number of adjustments to the clinical trial plan, including increasing the number of clinical trial sites. We can provide no assurance that those adjustments will be sufficient to enable us to complete the trials within our anticipated time frame. In addition, we may determine it necessary to increase the target number of patients to be enrolled in a clinical trial, which could extend the time necessary to complete such clinical trial. If we experience delays in enrollment, our ability to complete the trials could be materially adversely affected.

We rely on third parties to conduct and support our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We do not independently conduct clinical trials for our product candidates. We rely on third parties, such as contract research organizations, or CROs, clinical data management organizations, medical institutions and clinical investigators, to perform this function. Our reliance on these third parties for clinical development activities reduces our control over these activities but does not relieve us of our responsibilities. Furthermore, some of the sites for our clinical trials are outside the United States. The performance of these sites may be adversely affected by various issues, including less advanced medical infrastructure, lack of familiarity with conducting clinical trials in accordance with U.S. standards, insufficient training of personnel, communication difficulties or change in local regulations. We remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the study. Moreover, the FDA requires us to comply with standards, commonly referred to as Good Clinical Practices, or GCP, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of patients in clinical trials are protected. Furthermore, these third parties may also have relationships with other entities, including our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, regulatory approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our products.

We also rely on other third parties to store and distribute supplies for our clinical trials. Any performance failure on the part of our existing or future distributors could delay clinical development or regulatory approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenues.

The manufacture of our product candidates is complex and we may encounter difficulties in production. If we or any of our third-party contract manufacturing organizations, or CMOs, encounter such difficulties, our ability to provide supply of our product candidates for clinical trials or our products for patients, if approved, could be delayed or stopped.

The process of manufacturing our products is complex, highly-regulated and subject to multiple risks. The manufacture of biologics involves complex processes, including developing cells or cell systems to produce the biologic, growing large quantities of such cells and harvesting and purifying the biologic produced by them. As a result, the cost to manufacture biologics is generally far higher than traditional small molecule chemical compounds, and the biologics manufacturing process is less reliable and is difficult to reproduce. Manufacturing biologics, such as eptinezumab and other product candidates, is highly susceptible to product loss due to

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contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If microbial or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination. We utilize third-party CMOs to produce eptinezumab using our proprietary yeast production technology.

The manufacturing facilities in which our product candidates are made could be adversely affected by equipment failures, labor shortages, natural disasters, power failures and numerous other factors. There are risks associated with scaling-up manufacturing to commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, lot consistency and timely availability of raw materials. Even if we or any of our future collaborators obtain regulatory approval for any of our product candidates, there is no assurance that manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product or to meet potential future demand. If our or any of our future collaborators' manufacturers are unable to produce sufficient quantities of an approved product for commercialization, commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

Our yeast-based production system used for the manufacture of eptinezumab is a non-traditional antibody production platform and as we or any of our future collaborators produce product in commercial quantities, we or any such collaborators may experience unforeseen safety or other manufacturing issues which would adversely affect the commercialization of eptinezumab or any of our future product candidates.

We rely on third-party CMOs to manufacture and supply eptinezumab, including a single supplier of eptinezumab drug substance for the commercial launch of eptinezumab, if approved. If one of our suppliers or manufacturers fails to perform adequately or fulfill our needs, we may be required to incur significant costs and devote significant efforts to find new suppliers or manufacturers and may also face delays in the development and commercialization of eptinezumab or other product candidates.

We currently do not own facilities for manufacturing our product candidates and we rely upon third-party CMOs to manufacture and supply drug product for clinical and commercial uses, including a single supplier of eptinezumab drug substance for the commercial launch of eptinezumab, if approved. The manufacture of pharmaceutical products in compliance with the FDA's current good manufacturing practices, or cGMP, requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, including difficulties with production costs and yields, quality control, including stability of the product candidate and quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced cGMP requirements, other federal and state regulatory requirements and foreign regulations. If our manufacturers were to encounter any of these difficulties or otherwise fail to comply with their obligations to us or under applicable regulations, our ability to provide study drugs in our clinical trials would be jeopardized. Any delay or interruption in the supply of clinical trial materials could delay the completion of our clinical trials, increase the costs associated with maintaining our clinical trial programs and, depending upon the period of delay, require us to commence new trials at significant additional expense or terminate the trials completely.

All manufacturers of our product candidates must comply with cGMP requirements enforced by the FDA through its facilities inspection program. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation. Manufacturers of our product candidates may be unable to comply with these cGMP requirements and with other FDA, state and foreign

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regulatory requirements. The FDA or similar foreign regulatory agencies may also implement new standards at any time, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. We have little control over our manufacturers' compliance with these regulations and standards. A failure to comply with these requirements may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall or withdrawal of product approval. If the safety of any product supplied is compromised due to our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our products and we may be held liable for any injuries sustained as a result. Any of these factors could cause a delay of clinical trials, regulatory submissions, approvals or commercialization of our product candidates, entail higher costs or impair our reputation.

We historically relied on a single smaller scale CMO to manufacture and provide us with clinical supplies of eptinezumab. We entered into an agreement with Sandoz GmbH, or Sandoz, effective May 2015, pursuant to which Sandoz will supply a certain guaranteed quantity of eptinezumab drug substance which we anticipate will be sufficient to support the commercial launch of eptinezumab and beyond, if approved. Our current and future agreements may not provide for an entire supply of product necessary for all anticipated clinical trials or for all potential commercial sales. If Sandoz or another of our CMOs terminates its agreement with us or otherwise becomes unable to fulfill its supply obligations, or if we and any future CMO cannot agree to the terms and conditions for provision of product necessary for our clinical and commercial supply needs, our clinical trials and commercialization efforts could be impaired until a qualified alternative supplier is identified, the manufacturing process is qualified and validated and we have agreed on the terms and conditions for such alternative supplier to supply product for us, which would have an adverse impact on our business and prospects.

Eptinezumab is a biologic and therefore requires complex production processes. Transferring the production process to a new manufacturer and scaling up the production process could be particularly difficult, time-consuming and expensive and may not yield comparable product. Although alternative sources of supply exist, the number of third-party suppliers with the necessary manufacturing and regulatory expertise and facilities necessary to manufacture eptinezumab and any other product candidates we may develop is limited, and may be expensive and take a significant amount of time to arrange for alternative suppliers. New suppliers of any product candidate would be required to qualify under applicable regulatory requirements. Obtaining the necessary FDA approvals or other qualifications under applicable regulatory requirements could result in a significant interruption of supply and could require the new manufacturer to bear significant additional costs which may be passed on to us.

Even if eptinezumab or any of our other product candidates receive regulatory approval, they may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors and others in the medical community necessary for commercial success.

If eptinezumab or any of our other product candidates receive regulatory approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors and others in the medical community. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including the following:

the efficacy and potential advantages compared to alternative treatments;

the prevalence and severity of any side-effects;

the price we or any of our future collaborators charge for our products;

the availability of third-party coverage and adequate reimbursement;

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the convenience and ease of administration compared to alternative treatments;

the willingness of the target patient population to try new therapies and of physicians to prescribe these new therapies; and

the size and effectiveness of our sales, marketing and distribution support.

If our product candidates are approved and do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable on a sustained basis.

We currently have no sales or distribution personnel or infrastructure and only limited marketing capabilities. If we are unable to develop a sales, marketing and distribution infrastructure on our own or through collaborations or other marketing arrangements, we will not be successful in commercializing eptinezumab or any of our future products.

We do not currently have sales or distribution capabilities and have no experience as an organization in the sale, marketing and distribution of therapeutic products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization, as well the corporate infrastructure to support such an organization, or outsource these functions to third parties. Assuming regulatory approval, we plan to focus our initial commercialization efforts on high-prescribing neurologists and headache centers in the United States employing a specialty sales force that we plan to establish. To maximize the potential commercial opportunity of eptinezumab while we focus on the U.S. specialty market, we may explore strategic arrangements that provide additional capabilities and infrastructure while improving access for physicians and patients.

There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time-consuming and could delay any product launch. If the commercial launch of a product for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we do not have another product to sell in the same specialty market. We also may not be successful entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively and could damage our reputation. If we do not establish sales and marketing capabilities or the supporting corporate infrastructure successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing eptinezumab or any other product candidates.

If we are able to commercialize eptinezumab or any other product candidates, the products may become subject to unfavorable pricing regulations or third-party reimbursement practices, thereby harming our business.

The regulations that govern pricing and reimbursement for new therapeutic products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we or any of our future collaborators might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay commercial launch of the product and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in our products, even if our product candidates obtain regulatory approval.

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Our and any of our future collaborators' ability to commercialize any product candidates successfully also will depend in significant part on the extent to which coverage and adequate reimbursement for these products and related treatments becomes available from government health administration authorities, private health insurers and other third-party payors. Third-party payors decide which medications they will cover and establish reimbursement levels. A primary focus in the U.S. healthcare industry and elsewhere is cost containment. Increasingly, third-party payors are requiring that companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that coverage will be available for any product that we or any of our future collaborators commercialize and, if coverage is available, what the level of reimbursement will be. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. In addition, payors may only elect to coverage to a subset of competing drug products in a class. This has been observed with the three anti-CGRP therapies that received FDA approval in 2018 for the preventive treatment of migraine in adults, with certain payors only providing coverage for two of the three therapies. This practice could result in eptinezumab being denied coverage from one or more payors, if approved by the FDA.

Reimbursement may impact the demand for, or the price of, any product for which we or any of our future collaborators obtain approval. Obtaining coverage and adequate reimbursement for our products may be particularly difficult because of the higher prices often associated with products administered under the supervision of a physician. If reimbursement is not available or is available only to limited levels, we or any of our future collaborators may not be able to successfully commercialize any product that has been approved.

There may be significant delays in obtaining reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA or regulatory authorities in other countries. Moreover, eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our or any of our future collaborators' costs, including research, development, manufacture, sale and distribution. Interim payments for new products, if applicable, may also not be sufficient to cover our or any of our future collaborators' costs and may not be made permanent. Payment rates may vary according to the use of the product and the clinical setting in which it is used, may be based on payments allowed for lower cost products that are already reimbursed and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where they may be sold at lower prices than in the United States. Private third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our or any of our future collaborators' inability to promptly obtain coverage and profitable payment rates from both government funded and private payors for newly developed products could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

decreased demand for any product candidates or products that we or any of our future collaborators may develop;

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injury to our reputation and significant negative media attention;

withdrawal of patients from clinical trials or cancellation of trials;

significant costs to defend the related litigation;

substantial monetary awards;

loss of revenues; and

the inability to commercialize any products that we may develop.

We currently have \$20 million in product liability insurance coverage for our clinical trials, which may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Marketing approval of our product candidates in international markets will subject us to additional costs and a variety of risks associated with international operations.

We intend to pursue marketing approvals for our product candidates in international markets directly or with partners and will be subject to additional costs and additional risks related to international operations, including:

different regulatory requirements for drug approvals in foreign countries;

reduced protection for intellectual property rights;

unexpected changes in tariffs, trade barriers and regulatory requirements;

economic weakness, including inflation or political instability in particular foreign economies and markets;

compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;

foreign taxes, including withholding of payroll taxes;

foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;

workforce uncertainty in countries where labor unrest is more common than in the United States;

production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;

the planned exit of the United Kingdom from the European Union (commonly referred to as "Brexit"); and

business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

We may expend our limited resources to pursue a particular product candidate or disease and fail to capitalize on product candidates or diseases that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus our research programs and product candidates for a specific disease. As a result, we may forgo or delay pursuit of opportunities with other product candidates or other diseases that may later prove to have greater commercial potential. Our resource

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allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific diseases may not yield any commercially viable products.

If we do not accurately evaluate the commercial potential for a particular product candidate in the right disease, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to retain sole development and commercialization rights.

We may not be successful in our efforts to use and enhance our proprietary antibody platform to create a pipeline of product candidates and develop commercially successful products.

We have used our proprietary antibody platform for the selection of monoclonal antibodies to create eptinezumab, ALD1910 and other future product candidates that we are currently evaluating. Our platform has not yet, and may never, lead to approved or commercially successful products. Even if we are successful in continuing to build our pipeline, the future product candidates that we evaluate may not be suitable for clinical development, including as a result of any harmful side-effects that may emerge, limited efficacy or other characteristics that make it unlikely such product candidates will receive regulatory approval or achieve commercial success. If we do not successfully develop and commercialize product candidates using our proprietary antibody platform, we may not be able to obtain product or collaboration revenues in future periods, which would harm our business and prospects.

If any future collaborations for the development and commercialization of product candidates are not successful, our business may be harmed.

We may choose to enter into collaboration agreements with third parties with respect to our product candidates, including eptinezumab, for their development and commercialization in the United States or in international markets. We will have limited control over the amount and timing of resources that any of our future collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenues from these arrangements will depend in part on any such collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our product candidates are subject to numerous risks, which may include the following:

collaborators may have significant discretion in determining the efforts and resources that they will apply to collaborations;

collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;

collaborators may delay clinical trials, provide insufficient funding for a clinical trial, stop a clinical trial, abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;

collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates;

a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to their marketing and distribution;

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collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;

disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management attention and resources;

collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates; and

collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to commercialize such intellectual property. Any termination or disruption of any future collaboration could result in delayed development of product candidates, increased cost to develop product candidates or termination of development of a product candidate.

We may engage in future acquisitions that increase our capital requirements, dilute our stockholders, cause us to incur debt or assume contingent liabilities and subject us to other risks.

We may evaluate various strategic transactions, including licensing or acquiring complementary products, technologies or businesses. Any potential acquisitions may entail numerous risks, including increased operating expenses and cash requirements, assimilation of operations and products, retention of key employees, diversion of our management's attention and uncertainties in our ability to maintain key business relationships of the acquired entities. In addition, if we undertake acquisitions, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense. Moreover, we may not be able to locate suitable acquisition opportunities and this inability could impair our ability to grow or obtain access to technology or products that may be important to the development of our business.

Risks related to government regulation

The regulatory approval process is expensive, time consuming and uncertain and may prevent us or our any of our future collaboration partners from obtaining approvals for the commercialization of some or all of our product candidates.

Among other things, the research, testing, manufacturing, labeling, approval, selling, import, export, marketing and distribution of drug products are subject to extensive regulation by the FDA and other regulatory authorities in the United States and other countries, which regulations differ from country to country. Neither we nor any future collaboration partner is permitted to market our product candidates in the United States until we receive approval of a BLA from the FDA. Prior to the submission of the our BLA for eptinezumab on February 21, 2019, we had never submitted an application for approval for any product. We have never obtained FDA approval for any product. Obtaining approval of BLA can be a lengthy, expensive and uncertain process. In addition, failure to comply with FDA and other applicable U.S. and foreign regulatory requirements may subject us to administrative or judicially imposed sanctions, including the following:

warning letters;

civil or criminal penalties and fines;

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injunctions;

suspension or withdrawal of regulatory approval;

suspension of any ongoing clinical trials;

voluntary or mandatory product recalls and publicity requirements;

refusal to accept or approve applications for marketing approval of new drugs or biologics or supplements to approved applications filed by us;

restrictions on operations, including costly new manufacturing requirements; or

seizure or detention of our products or import bans.

Prior to receiving approval to commercialize any of our product candidates in the United States or abroad, we and any of our future collaboration partners must demonstrate with substantial evidence from well-controlled clinical trials, and to the satisfaction of the FDA and other regulatory authorities abroad, that such product candidates are safe and effective for their intended uses. Results from preclinical studies and clinical trials can be interpreted in different ways. Even if we and any of our future collaboration partners believe the preclinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA and other regulatory authorities.

Administering any of our product candidates to humans may produce undesirable side-effects, which could interrupt, delay or cause suspension of clinical trials of our product candidates and result in the FDA or other regulatory authorities denying approval of our product candidates for any or all targeted indications.

Regulatory approval of BLA is not guaranteed, and the approval process is expensive and may take several years. The FDA also has substantial discretion in the approval process. Despite the time and expense exerted, failure can occur at any stage, and we could encounter problems that cause us to abandon or repeat clinical trials, or perform additional preclinical studies and clinical trials. The number of preclinical studies and clinical trials that will be required for FDA approval varies depending on the product candidate, the disease or condition that the product candidate is designed to address and the regulations applicable to any particular product candidate. In addition, the FDA typically conducts pre-approval review and inspections of manufacturing processes and facilities to ensure compliance with cGMP regulations and other requirements as well as audits select clinical trial sites to determine GCP compliance and data integrity.

The FDA can delay, limit or deny approval of a product candidate for many reasons, including, but not limited to, the following:

a product candidate may not be deemed safe or effective;

FDA officials may not find the data from preclinical studies and clinical trials sufficient;

the FDA might not approve our or our third-party manufacturers' processes or facilities; or

the FDA may change its approval policies or adopt new regulations.

If any of our product candidates fails to demonstrate safety and efficacy in clinical trials or does not gain regulatory approval, our business will be harmed.

Even if we receive regulatory approval for a product candidate, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements.

Once regulatory approval has been granted, the approved product and its manufacturer are subject to continual review by the FDA and/or non-U.S. regulatory authorities. Any regulatory approval that we or any of

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our future collaboration partners receive for our product candidates may be subject to limitations on the indicated uses for which the product may be marketed or contain requirements for potentially costly post-marketing follow-up trials to monitor the safety and efficacy of the product. In addition, if the FDA and/or non-U.S. regulatory authorities approve any of our product candidates, we will be subject to extensive and ongoing regulatory requirements by the FDA and other regulatory authorities with regard to the labeling, packaging, adverse event reporting, storage, advertising, promotion and recordkeeping, among other things, for our products. In addition, manufacturers of our drug products are required to comply with cGMP regulations, which include requirements related to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Furthermore, regulatory authorities must approve these manufacturing facilities before they can be used to manufacture our drug products, and these facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP regulations and other requirements. If we or a third party discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory authority may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with regulatory requirements of the FDA and/or other non-U.S. regulatory authorities, we could be subject to administrative or judicially imposed sanctions, including the following:

warning letters;

civil or criminal penalties and fines;

injunctions;

suspension or withdrawal of regulatory approval;

suspension of any ongoing clinical trials;

voluntary or mandatory product recalls and publicity requirements;

refusal to approve pending applications for marketing approval of new drugs or supplements to approved applications filed by us;

restrictions on operations, including costly new manufacturing requirements; or

seizure or detention of our products or import bans.

Additionally, the FDA strictly regulates marketing, labeling, advertising and promotion of products. Drugs and biologics may be promoted only for the approved indications and in accordance with the provisions of the approved label, although physicians, in the practice of medicine, may prescribe approved drugs for unapproved indications. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

The regulatory requirements and policies may change and additional government regulations may be enacted for which we may also be required to comply. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or in other countries. If we are not able to maintain regulatory compliance, we may not be permitted to market our future products and our business may suffer.

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Failure to obtain regulatory approvals in foreign jurisdictions will prevent us from marketing our products in these jurisdictions.

We or a future collaboration partner may market eptinezumab and any future products in international markets. In order to market our future products in the European Economic Area, or EEA, and many other foreign jurisdictions, we must obtain separate regulatory approvals. Specifically, in the EEA, medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA.

Before granting the MA, the European Medicines Agency, or EMA, or the competent authorities of the member states of the EEA make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

We have had limited interactions with foreign regulatory authorities, and the approval procedures vary among countries and can involve additional clinical testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one or more foreign regulatory authorities does not ensure approval by regulatory authorities in other foreign countries or by the FDA. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if at all. We may not be able to file for regulatory approvals and even if we file we may not receive necessary approvals to commercialize our products in any market.

Healthcare reform measures could hinder or prevent our product candidates' commercial success.

In the United States, there have been and we expect there will continue to be a number of legislative and regulatory changes to the healthcare system in ways that could affect our future revenues and profitability and the future revenues and profitability of our potential customers. Federal and state lawmakers regularly propose and, at times, enact legislation that would result in significant changes to the healthcare system, some of which are intended to contain or reduce the costs of medical products and services, improve quality of care, and expand access to coverage. For example, one of the most significant healthcare reform measures in decades, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the ACA, was enacted in 2010. The ACA contained a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse measures. Some of the provisions of the ACA have yet to be implemented, and there have been judicial and Congressional challenges to certain aspects of the ACA, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the ACA. Since January 2017, President Trump signed two Executive Orders and other directives to delay the implementation of certain provisions of the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA such as removing penalties, starting January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance and delaying the implementation of certain ACA-mandated fees. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the individual mandate was repealed by Congress as part of the TCJA. While the Texas U.S. District Court Judge, as well as the Trump administration and CMS, have stated that the ruling will have no immediate effect pending appeal of the decision, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA and our business. We cannot know how any future healthcare reform legislation will impact our business.

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In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, the Budget Control Act of 2011, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee did not achieve a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, which triggered the legislation's automatic reduction to several government programs, including aggregate reductions to Medicare payments to providers of up to 2% per fiscal year that went into effect on April 1, 2013, following passage of the Bipartisan Budget Act of 2015, as well as other legislative changes to the statute, will remain in effect through 2027 unless additional Congressional action is taken. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, further reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been and likely will continue to be legislative and regulatory proposals at the federal and state levels directed at containing or lowering the cost of health care. For example, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. For example, at the federal level, the Trump administration released a Blueprint to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. On January 31, 2019, the U.S. Department of Health and Human Services, Office of Inspector General, proposed modifications to the federal Anti-Kickback Statute discount safe harbor for the purpose of reducing the cost of drug products to consumers which, among other things, if finalized, will affect discounts paid by manufacturers to Medicare Part D plans, Medicaid managed care organizations and pharmacy benefit managers working with these organizations. While some of these and other proposed measures may require authorization through additional legislation to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. We cannot predict the initiatives that may be adopted in the future or their full impact. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of health care may adversely affect:

our ability to set a price we believe is fair for our products;

our ability to generate revenues and achieve or maintain profitability; and

the availability of capital for our business.

Furthermore, changes in regulatory requirements and guidance may occur and we may need to amend clinical trial protocols to reflect these changes. Amendments may require us to resubmit our clinical trial protocols to Institutional Review Boards for reexamination, which may impact the costs, timing or successful completion of a clinical trial. Data from clinical trials may receive greater scrutiny with respect to safety, which may make the FDA or other regulatory authorities more likely to terminate or suspend clinical trials before completion, or require longer or additional clinical trials that may result in substantial additional expense and a delay or failure in obtaining approval or approval for a more limited indication than originally sought.

Given the serious public health risks of high profile adverse safety events with certain drug products, the FDA may require, as a condition of approval, costly risk evaluation and mitigation strategies, which may include safety surveillance, restricted distribution and use, patient education, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, preapproval of promotional materials and restrictions on direct-to-consumer advertising.

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If we fail to comply with healthcare laws, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations, including those pertaining to fraud and abuse and patients' rights, are and will be applicable to our business. We could be subject to healthcare regulation by both the federal government and the states in which we conduct our business. The healthcare laws and regulations that may affect our ability to operate include, without limitation:

the federal Anti-Kickback Statute, which prohibits, among other things, any person or entity from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs;

federal false claims laws, including the federal civil False Claims Act, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment that are false or fraudulent, or knowingly making false statements to avoid, decrease, or conceal an obligation to pay money to the federal government;

the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

the federal Physician Payments Sunshine Act under the ACA, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program to annually report to CMS information related to payments and other transfers of value provided to physicians and teaching hospitals and physician ownership and investment interests;

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, which imposes requirements on certain types of entities and individuals regarding the conduct of certain electronic healthcare transactions and the security and privacy of protected health information;

state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers;

state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government;

state laws that require drug manufacturers to report information related to payments and other transfers of value to other healthcare providers and healthcare entities, marketing expenditures, or information related to drug pricing;

state and local laws that require the registration of pharmaceutical sales representatives; and

state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

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The ACA, among other things, amended the intent requirement of the federal Anti-Kickback Statute and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to commit a violation. In addition, the ACA provided that the government

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may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including administrative, civil and criminal penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in federal healthcare programs, integrity obligations, contractual damages, reputational harm, diminished profits and future earnings, and the curtailment or restructuring of our operations, which could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

Our failure to comply with data protection laws and regulations could lead to government enforcement actions and significant penalties against us, and adversely impact our operating results.

EU Member States, Switzerland and other countries have adopted data protection laws and regulations, which impose significant compliance obligations. For example, European Union, or EU, member states and other foreign jurisdictions, including Switzerland, have adopted data protection laws and regulations which impose significant compliance obligations. Moreover, the collection and use of personal health data in the EU is governed by the EU General Data Protection Regulation, or the GDPR, which became effective in May 2018. The GDPR, which is wide-ranging in scope, imposes several requirements relating to the consent of the individuals to whom the personal data relates, the information provided to the individuals, the security and confidentiality of the personal data, data breach notification and the use of third party processors in connection with the processing of personal data. The GDPR also imposes strict rules on the transfer of personal data out of the EU to the U.S., provides an enforcement authority and imposes large penalties for noncompliance, including the potential for fines of up to 20 million or 4% of the annual global revenues of the noncompliant company, whichever is greater. The GDPR requirements apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries, including employee information. The GDPR increases our responsibility and liability in relation to personal data that we process, including in clinical trials, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, which could divert management's attention and increase our cost of doing business. In addition, new regulation or legislative actions regarding data privacy and security (together with applicable industry standards) may increase our costs of doing business. In this regard, we expect that there will continue to be new proposed laws, regulations and industry standards relating to privacy and data protection in the United States, the EU and other jurisdictions, and we cannot determine the impact such future laws, regulations and standards may have on our business.

Risks related to intellectual property

If we fail to comply with our obligations in our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are a party to intellectual property license agreements with third parties. For example, we have a non-exclusive, royalty bearing license with Teva Pharmaceuticals International GmbH, or Teva GmbH, for its CGRP patent portfolio to develop, manufacture and commercialize eptinezumab in the United States and worldwide, excluding Japan and Korea. We also have a third-party royalty free license associated with the Keck Graduate Institute for our yeast-based proprietary manufacturing technology. We may enter into additional license agreements in the future. Our existing license agreements impose, and we expect that our future license agreements will impose, various diligence, royalty payment, milestone payment, insurance and other

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obligations on us. If we fail to comply with these obligations or our other obligations in our license agreements, our licensors may have the right to terminate these agreements, in which event we may not be able to develop and market any product or use any platform technology that is covered by these agreements. Termination of these licenses or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms or our not having sufficient intellectual property rights to operate our business. The occurrence of such events could materially harm our business.

Our ability to successfully commercialize our products may be impaired if we are unable to obtain and maintain effective intellectual property rights for our proprietary antibody platform and product candidates.

Our success depends in large part on our and our licensors' ability to obtain and maintain patent and other intellectual property protection in the United States and in other countries with respect to our proprietary antibody platform and products. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents or enforce the patents, covering technology or products that we license from third parties. Therefore, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. In addition, if third parties who license patents to us fail to maintain such patents, or lose rights to those patents, the rights we have licensed may be reduced or eliminated. Because certain intellectual property rights are shared between us and any of our future collaborators, it is possible that disputes may arise related to the distribution of those rights.

We have sought to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and products that are important to our business. This process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. The standards that the United States Patent and Trademark Office, or USPTO, uses to grant patents are not always applied predictably or uniformly and can change. Consequently, we cannot be certain as to whether pending patent applications will be allowed; and if allowed, we cannot be certain as to the type and extent of patent claims that will be issued to us in the future. Our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from using our technologies or from developing competing products and technologies.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unresolved. In recent years, patent rights have been the subject of significant litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our and our licensors' patent rights are highly uncertain. Our and our licensors' pending and future patent applications may not result in patents being issued which protect our technology or products or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. The laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned and licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions.

In March 2013, the United States converted to a first-to-file patent system under the recently enacted America Invents Act. With this change, the United States patent system was brought into closer conformity with the patent systems of other countries, the vast majority of which operate as first-to-file patent systems. Under the

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former system, and assuming the other requirements for patentability were met, the first to invent was entitled to the patent. A number of our patents and patent applications are subject to the first-to-invent system because they originated prior to the March 2013 cutoff. Under the new United States system, and outside the United States, the first to file a patent application is entitled to the patent, with certain exceptions. A number of our patents and patent applications are subject to the new first-to-file system in the United States because they originated after the March 2013 cutoff. The full effect of these changes remains unclear as the USPTO endeavors to implement various regulations concerning the new system. Furthermore, the courts have yet to address the vast majority of these provisions and the applicability of the America Invents Act and new regulations on specific patents discussed herein have not been determined and would need to be reviewed. We may become involved in opposition, interference, post-grant or derivation proceedings challenging our patent rights or the patent rights of others, and the outcome of any proceedings are highly uncertain. An adverse determination in any such proceeding could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner. The issuance of a patent is not conclusive as to its scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop or prevent us from stopping others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of future product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours or otherwise provide us with a competitive advantage.

We may become involved in lawsuits to protect or enforce our patents, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. The standards that courts use to interpret patents are not always applied predictably or uniformly and can change, particularly as new technologies develop. As a result, we cannot predict with certainty how much protection, if any, will be given to our patents if we attempt to enforce them and they are challenged in court. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. Inequitable conduct is frequently raised as a defense during intellectual property litigation. It is believed that all parties involved in the prosecution of our patent applications have complied with their duties of disclosure in the course of prosecuting our patent applications, however, it is possible that legal claims to the contrary could be asserted if we were engaged in intellectual property litigation, and the results of any such legal claims are uncertain due to the inherent uncertainty of litigation. If a court determines that any party involved in the prosecution of our patents failed to comply with their duty of disclosure, the subject patent would be unenforceable. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

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Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could harm our business.

Third parties may assert infringement claims against us, or other parties we have agreed to indemnify, based on existing patents or patents that may be granted in the future. Furthermore, since patent applications are published some time after filing, and because applications can take several years to issue, there may be pending third-party patent applications that are unknown to us, which may later result in issued patents.

We may initiate litigation or other legal proceedings with respect to patents held by others. Because of the inevitable uncertainty in intellectual property legal proceedings, any such proceedings, if initiated, may not ultimately be resolved in our favor regardless of our perception of the merits. If we lose such a proceeding, or are found to infringe a third party's intellectual property rights in any jurisdiction, we may not be able to engage in commercialization and related activities for a product candidate for its intended use in such jurisdiction without obtaining a license from such third party. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, in any such proceeding or litigation, we could be found liable for monetary damages, including in the United States treble damages if we are found to have willfully infringed a patent, and attorneys' fees. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations.

In July 2014, we and Eli Lilly each filed an opposition to a European patent owned by Teva GmbH with claims directed to CGRP antagonist antibodies and use of such CGRP antagonist antibodies in human therapy for the prevention or treatment of headache such as migraine. In January 2018, we entered into a European patent settlement and global license agreement with Teva GmbH pursuant to which we received a non-exclusive license to Teva GmbH's CGRP patent portfolio, which includes the opposed European patent, to develop, manufacture and commercialize eptinezumab in the United States and worldwide, excluding Japan and Korea, and agreed to withdraw our opposition.

We may be unable to protect the confidentiality of our trade secrets, thus harming our business and competitive position.

In addition to our patented technology and products, we rely upon trade secrets, including unpatented know-how, technology and other proprietary information to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with our employees, collaborators and consultants. We also have agreements with our employees and selected consultants that obligate them to assign their inventions to us. However, it is possible that technology relevant to our business will be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees, consultants or collaborators that are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Furthermore, our trade secrets could be disclosed, misappropriated or otherwise become known or be independently discovered by our competitors. Our trade secrets can be lost through their inadvertent or advertent disclosure to others. In addition, intellectual property laws in foreign countries may not protect our intellectual property to the same extent as the laws of the United States. If our trade secrets are disclosed or misappropriated, it would harm our ability to protect our rights and harm our business.

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We may be subject to claims that our employees have wrongfully used or disclosed intellectual property of their former employers. Intellectual property litigation or proceedings could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce our resources available for development activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other intellectual property related proceedings could impair our ability to compete in the marketplace.

Risks related to our operations and personnel

Our future success depends on our ability to retain our executive officers and other key employees and to attract, retain and motivate qualified personnel.

We are highly dependent on our executive officers and other key employees. The employment of our executive officers and other key employees is typically at-will and our executive officers and other key employees may terminate their employment with us at any time. The loss of the services of any of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives.

Recruiting and retaining other qualified scientific, clinical, manufacturing and sales and marketing personnel is critical to our success. We may not be able to attract and retain critical personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by third parties and have commitments under consulting or advisory contracts with other entities that may limit their availability to us.

We expect to expand our development, regulatory affairs, sales and marketing and other capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

Over the next several years, if any of our product candidates receive marketing approval, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs, sales and marketing and other functional areas, including finance, accounting and legal. For example, if eptinezumab is approved, we plan to build a specialty sales force

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targeting high-prescribing neurologists and headache centers in the United States. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous materials.

In addition, we may be required to incur substantial costs to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may divert resources away from our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Business disruptions could harm our future revenues and financial condition and increase our costs and expenses.

Our operations could be subject to earthquakes, power shortages, telecommunications failures, floods, hurricanes, fires, extreme weather conditions, medical epidemics and other natural or manmade disasters or business interruptions. The occurrence of any of these business disruptions could harm our operations and financial condition and increase our costs and expenses. Our corporate headquarters is located in Washington and certain clinical sites for our product candidates, operations of our existing and future partners and suppliers are or will be located in Washington near major earthquake faults. The ultimate impact on us, our significant partners, suppliers and our general infrastructure of being located near major earthquake faults and being consolidated in certain geographical areas is unknown, but our operations and financial condition could suffer in the event of a major earthquake or other natural or manmade disaster.

Our internal computer systems, or those of our CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our drug development programs.

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced

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any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing clinical trials for any of our product candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of our product candidates could be delayed.

We may be subject to legal proceedings from time-to-time, which could result in substantial damages and may divert management's time and attention from our business.

From time to time in the ordinary course of business we have been and in the future may become involved in various lawsuits, claims, proceedings and contractual disputes relating to the conduct of our business. For example, as described in Note 20 to our consolidated financial statements included in our Annual Report on Form 10-K, we recently terminated for breach a contract manufacturing agreement for the delivery of future services, and the vendor has disputed the termination. We have estimated that termination-related costs, if any, could range from \$0 to \$52 million, although the vendor has asserted the remaining amount owed under the contract is significantly higher than our estimated amount. This contract dispute, and any future lawsuits, claims, proceedings or other disputes, are subject to inherent uncertainties, and the actual costs to be incurred relating to such disputes may be impacted by unknown factors. The outcome of litigation or other disputes is necessarily uncertain, and we could be forced to expend significant resources in the management or defense of, or negotiation related to, litigation or other disputes, and we may not prevail. Managing and defending against legal actions and disputes can be time-consuming for our management and detract from our ability to fully focus our internal resources on our business activities, which could result in delays of our clinical trials or our development and commercialization efforts. In addition, we may incur substantial legal fees and costs in connection with these and potential future litigations and disputes. Decisions adverse to our interests in any litigation or dispute could result in the payment of substantial amounts, which could be in excess of any amounts we have estimated or reserved in our financial statements, or could have a material adverse effect on our business.

Risks related to ownership of our securities

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.

Our quarterly and annual operating results have fluctuated in the past and may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. Our operating results may fluctuate due to a variety of other factors, many of which are outside of our control and may be difficult to predict, including the following:

the timing and cost of, and level of investment in, research and development activities relating to our product candidates, which may change from time to time;

the cost of manufacturing our product candidates, which may vary depending on the quantity of production and the terms of our agreements with manufacturers;

expenditures that we will or may incur to acquire or develop additional product candidates and technologies;

the level of demand for our product candidates, should they receive approval, which may vary significantly;

future accounting pronouncements or changes in our accounting policies;

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the timing and success or failure of clinical trials for our product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners;

the timing and amount of any development funding or milestone payments under any future collaboration agreements; and

the risk/benefit profile, cost and reimbursement policies with respect to our products candidates, if approved, and existing and potential future drugs that compete with our product candidates.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated operating results guidance we may provide.

Our stock price may be volatile, and purchasers of our common stock could incur substantial losses. Volatility in the market price and trading volume of our common stock could adversely impact the trading price of the Convertible Notes.

Our stock price has fluctuated in the past and is likely to be volatile in the future. Since January 1, 2015, the reported sale price of our common stock has fluctuated between \$8.60 and \$54.90 per share. For example, on June 26, 2017, prior to our announcement of our PROMISE 1 data, the closing price of our common stock was \$18.70 per share. Following the announcement of our PROMISE 1 data, the closing price of our common stock on June 27, 2017 was \$13.48, and since that date the reported sale price of our common stock has been as low as \$8.60 per share.

The stock market in general and the market for biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may experience losses on their investment in our common stock. The market price for our common stock may be influenced by many factors, including the following:

the success of competitive products or technologies;

results of clinical trials of our product candidates or those of our competitors;

the sales, growth and market share of competing anti-CGRP therapeutics;

regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our product candidates;

introductions and announcements of future product candidates by us, any of our future collaborators, or our competitors, and the timing of these introductions or announcements;

actions taken by regulatory agencies with respect to our or our competitors' product candidates, clinical trials, manufacturing process or sales and marketing terms;

variations in our financial results or those of companies that are perceived to be similar to us;

the success of our efforts to discover, acquire or in-license additional products or product candidates;

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developments concerning our future collaborations, including but not limited to those with our sources of manufacturing supply and our future collaborators;

manufacturing disruptions;

actual or potential litigation or commercial disputes;

announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;

developments or disputes concerning patents or other proprietary rights, including litigation matters and our ability to obtain patent protection for our product candidates;

our ability or inability to raise additional capital and the terms on which we raise it;

the recruitment or departure of key personnel;

changes in the structure of healthcare payment systems;

market conditions in the pharmaceutical and biotechnology sectors;

actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;

trading volume of our common stock;

sales of our common stock by us or our stockholders;

changes in our board of directors or key personnel;

changes in our capital structure, such as future issuances of debt or equity securities;

short sales, hedging and other derivative transactions involving our capital stock;

general economic, industry and market conditions in the United States and abroad, including, for example, the impact of Brexit or similar events on global financial markets;

other events or factors, including those resulting from war, incidents of terrorism or responses to these events; and

the other risks described in this Risk Factors section.

These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, following periods of volatility in the market, securities class-action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management's attention and resources, which could harm our business.

A decrease in the market price of our common stock would likely adversely impact the trading price of the Convertible Notes. The market price of our common stock could also be affected by possible sales of our common stock by investors who view the Convertible Notes as a more attractive means of equity participation in us and by hedging or arbitrage trading activity that we expect to develop involving our common stock. This trading activity could, in turn, affect the trading price of the Convertible Notes.

Substantial future sales of shares of our common stock could cause the market price of our common stock and the trading price of the Convertible Notes to decline. This could cause the market price of our common stock and trading price of the Convertible Notes to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock into the public market could occur at any time. We may issue shares of our common stock or equity securities senior to our common stock in the future for a

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number of reasons, including to finance our operations and business strategy, to adjust our ratio of debt-to-equity, to satisfy our obligations upon the exercise of options, or for other reasons. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock, could impair our ability to raise capital through the sale of additional equity securities and could adversely affect the trading price of the Convertible Notes. We are unable to predict the effect that such sales may have on the prevailing market price of our common stock or trading price of the Convertible Notes.

A substantial number of shares of our common stock is reserved for issuance upon conversion of shares of our convertible preferred stock and the Convertible Notes. In addition, as of December 31, 2018, we had options and restricted stock awards outstanding that, if fully exercised or vested, as applicable, would result in the issuance of 11,010,336 shares of common stock. As of December 31, 2018, there were also 1,238,727 shares of common stock reserved for issuance under our 2014 Equity Incentive Plan and 1,707,656 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan. The authorized number of shares under both such benefit plans are subject to automatic annual increases in the number of shares of common stock reserved for future issuance on January 1 of each year through 2024. As of December 31, 2018, there were 1,450,000 shares of common stock reserved for issuance under our 2018 Inducement Award Plan. All of the shares of common stock issuable pursuant to our equity compensation plans have been or will be registered for public resale under the Securities Act of 1933, as amended, or the Securities Act. Accordingly, these shares will be able to be freely sold in the public market upon issuance as permitted by any applicable vesting requirements and the restrictions of Rule 144 under the Securities Act in the case of our affiliates.

The existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

Moreover, as of December 31, 2018, holders of an aggregate of up to approximately 3.7 million of our common stock have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

In addition, in connection with our January 2018 issuance of convertible preferred stock to Redmile, we entered into a registration rights agreement with Redmile. Under the registration rights agreement, we filed a prospectus supplement under our current registration statement on Form S-3 (SEC File No. 333-216199), and are required to file, if needed, one or more additional registration statements, as permissible and necessary, for the resale of the shares of our common stock issued or issuable upon conversion of the convertible preferred stock and a warrant to purchase an aggregate of 75,000 shares of convertible preferred stock that we may be required to issue to Redmile. In addition, in connection with the concurrent private placement, we expect to enter into a registration rights agreement with Redmile. Under the registration rights agreement, as proposed, we would agree that, by the day after the expiration of the 60-day lock-up period applicable to us and described under the heading *Underwriting*, we will register for resale under the Securities Act of 1933, as amended, or the Securities Act, the shares of our common stock issued to Redmile in the concurrent private placement.

In addition, in January 2019, we entered into an equity distribution agreement to commence an *at-the-market* offering program, or the ATM program, under which we are permitted to offer and sell, from time to time, shares of our common stock having a maximum aggregate offering price of up to \$100 million.

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If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.

The trading market for our common stock depends, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

Complying with the laws and regulations affecting public companies has increased and will increase our costs and the demands on management and could harm our operating results.

As a public company, we are incurring significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and rules subsequently implemented by the SEC and Nasdaq impose numerous requirements on public companies, including requiring changes in corporate governance practices. Also, the Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and operating results. Our management and other personnel need to devote a substantial amount of time to compliance with these laws and regulations. These burdens may increase as new legislation is passed and implemented, including any new requirements that the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 may impose on public companies. These requirements have increased and will continue to increase our legal, accounting, and financial compliance costs and have made and will continue to make some activities more time consuming and costly. We expect these rules and regulations may make it difficult and expensive for us to obtain director and officer liability insurance, and in the future, we may be required to accept reduced policy limits and coverage or to incur substantial costs to maintain the same or similar coverage. These rules and regulations could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors or our board committees or as executive officers.

The Sarbanes-Oxley Act requires, among other things, that we assess the effectiveness of our internal control over financial reporting annually and the effectiveness of our disclosure controls and procedures quarterly. Section 404 of the Sarbanes-Oxley Act, or Section 404, requires us to perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on, and our independent registered public accounting firm potentially to attest to, the effectiveness of our internal control over financial reporting. Our compliance with applicable provisions of Section 404 subjects us to substantial accounting expense and to expend significant management time on compliance-related issues. If we are not able to comply with the requirements of Section 404 applicable to us in a timely manner, or if we or our independent registered public accounting firm identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

Furthermore, investor perceptions of our company may suffer if deficiencies are found, and this could cause a decline in the market price of our stock. Irrespective of compliance with Section 404, any failure of our internal control over financial reporting could have a material adverse effect on our stated operating results and harm our reputation. If we are unable to implement these requirements effectively or efficiently, it could harm our operations, financial reporting, or financial results and could result in an adverse opinion on our internal control over financial reporting from our independent registered public accounting firm.

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Provisions in our corporate charter documents could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Because our board of directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. Among others, these provisions include the following:

our board of directors is divided into three classes with staggered three-year terms which may delay or prevent a change of our management or a change in control;

our board of directors has the right to elect directors 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;

our stockholders may not act by written consent or call special stockholders' meetings; as a result, a holder, or holders, controlling a majority of our capital stock would not be able to take certain actions other than at annual stockholders' meetings or special stockholders' meetings called by the board of directors, the chairman of the board or the chief executive officer;

our certificate of incorporation does not provide for cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;

stockholders must provide advance notice and additional disclosures in order to nominate individuals for election to the board of directors or to propose matters that can 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 our company; and

our board of directors may issue, without stockholder approval, shares of undesignated preferred stock; the ability to issue 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 acquire us.

The fundamental change repurchase feature of the Convertible Notes may delay or prevent an otherwise beneficial attempt to take over our company.

The terms of the Convertible Notes require us to repurchase the Convertible Notes in the event of a fundamental change. A takeover of our company would trigger an option of the holders of the Convertible Notes to require us to repurchase the Convertible Notes. This may have the effect of delaying or preventing a takeover of our company that would otherwise be beneficial to our investors.

Provisions under Delaware law and Washington law could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

In addition to provisions in our corporate charter and our bylaws, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any

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holder of at least 15% of our capital stock for a period of three years following the date on which the stockholder became a 15% stockholder. Likewise, because our principal executive offices are located in Washington, the anti-takeover provisions of the Washington Business Corporation Act may apply to us under certain circumstances now or in the future. These provisions prohibit a target corporation from engaging in any of a broad range of business combinations with any stockholder constituting an acquiring person for a period of five years following the date on which the stockholder became an acquiring person.

Additional risks related to this offering

We have broad discretion in the use of the net proceeds from this offering and the concurrent private placement and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and the concurrent private placement, and could spend the proceeds in ways that do not improve our business, financial condition or results of operations or enhance the value of our common stock. We intend to use the proceeds from this offering and the concurrent private placement for the commercialization of eptinezumab up to and through launch and the manufacture of commercial supply for eptinezumab, and may also use net proceeds for future eptinezumab clinical trials, the development of ALD1910 and for working capital and general corporate purposes.

The failure by our management to apply these funds effectively could result in financial losses that could harm our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

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Special note regarding forward-looking statements

This prospectus supplement, the accompanying prospectus, the documents incorporated by reference into this prospectus supplement and the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering and therein contain forward-looking statements that are based on our beliefs and assumptions and on information currently available to our management. Discussions containing these forward-looking statements may be found, among other places, in this prospectus supplement, the accompanying prospectus and in any free writing prospectus we may authorize for use in connection with this offering, in the sections titled **Business**, and **Management's Discussion and Analysis of Financial Condition and Results of Operations** incorporated by reference from our most recent Annual Report on Form 10-K. Forward-looking statements include, but are not limited to, statements about:

our ability to obtain and maintain regulatory approval of our product candidates;

our ability to successfully commercialize any of our products that are approved;

the rate and degree of market acceptance of our products;

our estimates of our expenses, ongoing losses, future revenues, capital requirements and our needs for or ability to obtain additional financing;

our expected uses of the net proceeds to us from this offering;

our ability to obtain and maintain intellectual property protection for our products and product candidates;

the ability to scale up manufacturing of our product candidates to commercial scale;

our reliance on our future collaboration partners' performance, over which we do not have control;

the actual receipt and timing of any milestone payments or royalties from any future collaborators;

our ability to successfully establish and successfully maintain appropriate collaborations and derive significant revenues from those collaborations;

our reliance on third parties to conduct our clinical trials;

our reliance on third-party contract manufacturers to manufacture and supply our product candidates for us;

our ability to identify and develop new products and product candidates;

our ability to enroll patients in our clinical trials at the pace that we project;

our ability to retain and recruit key personnel;

our financial performance; and

developments and projections relating to our competitors or our industry.

In some cases, you can identify forward-looking statements by terms such as may, will, should, could, would, expects, plans, anticipates, believes, estimates, projects, predicts, potential and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements.

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We discuss many of these risks, uncertainties and other factors in greater detail under the section titled "Risk factors" contained in this prospectus supplement and in our most recent Annual Report on Form 10-K incorporated by reference into this prospectus supplement. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should read carefully this prospectus supplement, the accompanying prospectus and any related free writing prospectuses that we have authorized for use in connection with this offering, together with the information incorporated herein and therein by reference as described in the section titled "Where you can find more information," completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify all of our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

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Use of proceeds

We estimate that we will receive net proceeds of \$140.7 million from the sale of shares of common stock in this offering and the concurrent private placement, after deducting underwriting discounts and commissions, placement agent fees, and estimated offering expenses payable by us. If the underwriters exercise in full their option to purchase additional shares, we estimate that the net proceeds will be approximately \$159.0 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

As of December 31, 2018, we had \$407.4 million in cash, cash equivalents and investments, and \$5.0 million in restricted cash. We currently estimate that we will use the net proceeds from this offering and the concurrent private placement together with our cash, cash equivalents, investments and restricted cash, for the commercialization of eptinezumab up to and through launch and the manufacture of commercial supply for eptinezumab. We may also use net proceeds, if any, for future eptinezumab clinical trials, the development of ALD1910 and for working capital and general corporate purposes.

The expected uses of the net proceeds, if any, from this offering and the concurrent private placement represent our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development and commercialization efforts, developments with respect to regulatory application, review and approval processes, any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering and the concurrent private placement.

Pending our use of the net proceeds from this offering and the concurrent private placement, we intend to invest the net proceeds with a view toward liquidity and capital preservation.

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Dividend policy

We have never declared or paid any cash dividends on our capital stock. We do not anticipate declaring, or paying in the foreseeable future, any cash dividends on our common stock. Subject to certain exceptions, holders of our Class A-1 Convertible Preferred Stock are entitled to receive dividends at a rate of 5% per year of the original purchase price of \$137.88 per share. Preferred dividends accrue and accumulate semi-annually and are payable semi-annually in arrears on June 30 and December 31 of each year commencing on June 30, 2018. We may elect to pay the preferred dividends in cash or by issuance of additional fully paid and nonassessable shares of Class A-1 Convertible Preferred Stock in an amount equal to (1) the aggregate dollar amount of the preferred dividends payable, divided by (2) the original issue price. Future determinations as to the declaration and payment of dividends, if any, other than the preferred dividends, will be at the discretion of our board of directors and will depend on then existing conditions, including our operating results, financial conditions, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

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Table of Contents**Capitalization**

The following table sets forth our cash, cash equivalents and investments and capitalization as of December 31, 2018:

on an actual basis; and

on an as adjusted basis to reflect the sale by us of 11,304,348 shares of common stock in this offering and the sale by us of 1,739,130 shares of common stock in the concurrent private placement, both at the public offering price of \$11.50 per share, after deducting underwriting discounts and commissions, placement agent fees and estimated offering expenses payable by us.

The following information should be read in conjunction with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and financial statements and related notes in our most recent Annual Report on Form 10-K and other documents incorporated by reference in this prospectus supplement and the accompanying prospectus. For more details on how you can obtain our periodic reports and other information, see "Where you can find more information" in this prospectus supplement.

(In thousands, except share and per share data)	As of December 31, 2018	
	Actual	As adjusted
Cash, cash equivalents, investments and restricted cash	\$ 412,369	\$ 553,069
2.5% convertible senior notes due 2025, net	182,104	182,104
Class A-1 convertible preferred stock, \$0.0001 par value, 10,000,000 shares authorized, 760,753 shares issued and outstanding, actual and as adjusted	103,755	103,755
Stockholders' equity:		
Preferred stock, \$0.0001 par value, 10,000,000 shares authorized, no shares issued and outstanding, actual and as adjusted		
Common stock par value \$0.0001 per share; 200,000,000 shares authorized, 68,410,576 shares issued and outstanding, actual; 200,000,000 shares authorized, 81,454,054 shares issued and outstanding, as adjusted	7	8
Additional paid-in capital	1,074,963	1,215,662
Accumulated other comprehensive loss	(1,056)	(1,056)
Accumulated deficit	(963,938)	(963,938)
Total stockholders' equity	109,976	250,676
Total capitalization	\$ 395,835	\$ 536,535

The number of shares of our common stock to be outstanding after this offering and the concurrent private placement is based on 68,410,576 shares of our common stock outstanding as of December 31, 2018 and excludes:

10,213,538 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2018, at a weighted-average exercise price of \$18.30 per share;

796,798 shares of common stock issuable upon the vesting of restricted stock units outstanding as of December 31, 2018;

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1,238,727 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan;

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1,450,000 shares of common stock reserved for future issuance under our 2018 Inducement Award Plan;

1,707,656 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan; and

760,753 shares of common stock reserved for future issuance upon the conversion of our Class A-1 Convertible Preferred Stock.

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Table of Contents**Dilution**

Dilution is the amount by which the price paid by the purchasers of the shares of common stock sold in the offering exceeds the net tangible book value per share of common stock after the offering. Net tangible book value per share is determined by subtracting our total liabilities and our preferred stock from the total book value of our tangible assets and dividing the difference by the number of shares of common stock deemed to be outstanding at that date.

Our historical net tangible book value as of December 31, 2018 was \$110.0 million, or \$1.61 per share.

After giving effect to the sale of 11,304,348 shares of our common stock in this offering and the concurrent private placement of 1,739,130 shares of our common stock at the public offering price of \$11.50 per share, and after deducting underwriting discounts and commissions, placement agent fees and estimated offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2018 would have been \$250.7 million, or \$3.08 per share. This represents an immediate increase in net tangible book value of \$1.47 per share to existing stockholders and immediate dilution of \$8.42 per share to investors purchasing our common stock in this offering at the public offering price.

The following table illustrates this dilution on a per share basis to new investors:

Public offering price per share	\$ 11.50
Historical net tangible book value per share as of December 31, 2018	\$ 1.61
Increase in net tangible book value per share attributable to this offering and the concurrent private placement	1.47

As adjusted net tangible book value per share as of December 31, 2018 after giving effect to this offering and the concurrent private placement	3.08
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Dilution per share to investors purchasing our common stock in this offering and the concurrent private placement	\$ 8.42
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If the underwriters exercise in full their option to purchase an additional 1,695,652 shares of common stock at the public offering price of \$11.50 per share, the as adjusted net tangible book value per share after giving effect to this offering and the concurrent private placement would be \$3.24 per share, representing an immediate increase to existing stockholders of \$1.63 per share, and immediate dilution to new investors in this offering of \$8.26 per share.

The number of shares of our common stock to be outstanding after this offering and the concurrent private placement is based on 68,410,576 shares of our common stock outstanding as of December 31, 2018 and excludes:

10,213,538 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2018, at a weighted-average exercise price of \$18.30 per share;

796,798 shares of common stock issuable upon the vesting of restricted stock units outstanding as of December 31, 2018;

1,238,727 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan;

1,450,000 shares of common stock reserved for future issuance under our 2018 Inducement Award Plan;

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1,707,656 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this benefit plan; and

760,753 shares of common stock reserved for future issuance upon the conversion of our Class A-1 Convertible Preferred Stock. To the extent that options are exercised, new options are issued under our equity incentive plans, or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. In addition, 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.

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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 ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income or the alternative minimum tax, and does not address any estate or gift tax consequences or any tax consequences arising under any state, local or foreign tax laws, or any other U.S. federal tax laws. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service, or the IRS, all as in effect on the date of this prospectus. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-U.S. holders who purchase our common stock pursuant to this offering and who 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 of the U.S. federal income tax consequences that may be relevant to an individual holder in light of such holder's particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to holders subject to special rules under the U.S. federal income tax laws, including:

certain former citizens or long-term residents of the United States;

partnerships or other pass-through entities (and investors therein);

controlled foreign corporations ;

passive foreign investment companies ;

corporations that accumulate earnings to avoid U.S. federal income tax;

banks, financial institutions, investment funds, insurance companies, brokers, dealers or traders in securities;

tax-exempt organizations and governmental organizations;

tax-qualified retirement plans;

persons subject to special tax accounting rules under Section 451(b) of the Code;

persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;

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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;

persons that own or have owned, actually or constructively, more than 5% of our common stock;

persons who have elected to mark securities to market; and

persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

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If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Partnerships holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular U.S. federal income tax consequences to them of holding and disposing of our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS AND ANY OTHER U.S. FEDERAL TAX LAWS. IN ADDITION, SIGNIFICANT CHANGES IN U.S. FEDERAL TAX LAWS WERE RECENTLY ENACTED. PROSPECTIVE INVESTORS SHOULD ALSO CONSULT WITH THEIR TAX ADVISORS WITH RESPECT TO SUCH CHANGES IN U.S. TAX LAW AS WELL AS POTENTIAL CONFORMING CHANGES IN STATE TAX LAWS.

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 not a U.S. person or a partnership (including any entity or arrangement 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 (including any entity treated as a corporation for U.S. federal income tax purposes) 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 (1) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Distributions on our common stock

If we distribute cash or other 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 will first be applied against and reduce a holder's tax basis in our common stock, but not below zero. Any excess amount distributed will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under **Gain on disposition of our common stock** below.

Subject to the discussion below regarding effectively connected income, backup withholding and FATCA (as defined below), dividends paid to a non-U.S. holder of our common stock generally 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. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or our withholding agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) certifying such holder's qualification for the reduced rate. This certification must be provided to us or our withholding agent before the payment of dividends and must be updated periodically. If the non-U.S. holder holds our common stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our withholding agent, either directly or through other intermediaries.

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If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on our common stock are effectively connected with such holder's U.S. trade or business (and are attributable to such holder's permanent establishment or fixed base in the United States if required by an applicable tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) to the applicable withholding agent, certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States.

However, any such effectively connected dividends paid on our common stock generally will be subject to U.S. federal income tax on a net income basis at the regular U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items.

Non-U.S. holders that do not provide the required certification on a timely basis, but that qualify 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 any applicable income tax treaties that may provide for different rules.

Gain on disposition of our common stock

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

the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States;

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 United States real property interest by reason of our status as a United States real property holding corporation, or a USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests. We believe that we are not currently and we do not anticipate becoming a USRPHC for U.S. federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

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 U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed

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U.S. federal income tax returns with respect to such losses. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules. Gain described in the third bullet point above will generally be subject to U.S. federal income tax in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business (subject to any provisions under an applicable income tax treaty), except that the branch profits tax generally will not apply.

Information reporting and backup withholding

Annual reports are required to be filed with the IRS and provided to each non-U.S. holder indicating the amount of dividends on our common stock paid to such holder and the amount of any tax withheld with respect to those dividends. These information reporting requirements apply even if no withholding was required because the dividends were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-U.S. holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, or certain other requirements are met. Backup withholding may apply if the payor has actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-U.S. holder should consult with a U.S. tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any.

Withholding on foreign entities

Sections 1471 through 1474 of the Code, which are commonly referred to as FATCA, impose a U.S. federal withholding tax of 30% on certain payments made to a foreign financial institution (as specially defined under these rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding certain U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or an exemption applies. FATCA also generally will impose a U.S. federal withholding tax of 30% on certain payments made to a non-financial foreign entity unless such entity provides the withholding agent a certification identifying certain direct and indirect U.S. owners of the entity or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock. Subject to recently proposed Treasury Regulations, FATCA will also apply to gross proceeds from sales or other dispositions of our common stock after December 31, 2018.

The Treasury Department has recently proposed regulations which, if finalized in their present form, would eliminate the federal withholding tax of 30% applicable to gross proceeds from a disposition of our common stock.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

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Underwriting

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. J.P. Morgan Securities LLC and SVB Leerink LLC are acting as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus supplement, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
J.P. Morgan Securities LLC	5,200,000
SVB Leerink LLC	3,278,261
Wells Fargo Securities, LLC	1,695,652
RBC Capital Markets, LLC	1,130,435
Total	11,304,348

The underwriters are committed to purchase all the common shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common shares directly to the public at the initial public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$0.414 per share. After the initial offering of the shares to the public, if all of the common shares are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to 1,695,652 additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus supplement to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is \$0.69 per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option to purchase additional shares	With full option to purchase additional shares
Per Share	\$ 0.690	\$ 0.690
Total	\$ 7,800,000	\$ 8,970,000

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We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately \$0.3 million.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, announce the intention to sell, 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 dispose of, directly or indirectly, or file with the Securities and Exchange Commission, or SEC, a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC and SVB Leerink LLC for a period of 60 days after the date of this prospectus supplement. Such restrictions shall not apply to (1) the securities to be sold to the underwriters in this offering, (2) any securities issued upon the exercise of options or warrants or the conversion of a security outstanding on the date of this prospectus supplement and described herein, (3) the grant of options or the issuance of securities by us to employees, officers, directors, advisors or consultants pursuant to employee benefit plans in effect on the date of this prospectus supplement and described herein and in the accompanying prospectus; (4) our filing of a registration statement on Form S-8 with the SEC or an amendment to any such registration statement on file with the SEC in respect of any securities issued under or the grant of any award pursuant to an employee benefit plan in effect on the date of this prospectus supplement and described herein or (5) the sale or issuance of or entry into an agreement to sell or issue securities in connection with any (a) mergers, (b) acquisition of securities, businesses, properties or other assets, (c) joint ventures, or (d) strategic alliances; provided, that the aggregate number of securities or securities convertible into or exercisable for such securities that we may sell or issue or agree to sell or issue shall not exceed 5% of the total number of shares of our securities issued and outstanding immediately following the completion of this offering; and provided further, that each recipient of securities or securities convertible into or exercisable for such securities executes and delivers a lock-up agreement in a form satisfactory to the representatives.

Our directors and executive officers, and certain of our significant stockholders affiliated with members of our board of directors have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 60 days after the date of this prospectus supplement for officers, and 45 days for non-employee directors and certain of their affiliated funds, may not, without the prior written consent of J.P. Morgan Securities LLC and SVB Leerink LLC, (1) offer, pledge, announce the intention to sell, 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, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such

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other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock.

The foregoing restrictions do not apply to: (1) sales of securities acquired in open market transactions after the completion of this offering or in this offering, provided that no filing under Section 16(a) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or other public announcement is required or voluntarily made in connection with such sales; (2) transfers of securities (a) by bona fide gift, (b) to the spouse, domestic partner, parent, child or grandchild of the officer, director or security holder or to a trust formed for the benefit of such persons or the officer, director or security holder, (c) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the officer, director or security holder, (d) if the security holder is an individual, solely by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement, (e) to us either (i) pursuant to any contractual arrangement in effect on the date of the agreement that provides for the repurchase of the securities of the officer, director or security holder by us or (ii) in connection with the termination of such person's employment with us; (f) in connection with a merger or sale of all or substantially all of our company, regardless of how such a transaction is structured, (g) if the security holder is a corporation, partnership or other business entity (i) to another corporation, partnership or other business entity that controls, is controlled by or is under common control with the security holder or (ii) as part of a disposition, transfer or distribution without consideration by the security holder to its equity holders, general partners or limited partners or (h) if the security holder is a trust, to a trustee or beneficiary of the trust; provided that each transferee, donee or distributee executes and delivers a lock-up agreement in a form satisfactory to the representatives; and provided, further, that no filing under Section 16(a) of the Exchange Act, as amended, or the Exchange Act, or other public announcement is required or voluntarily made during the applicable restricted period; (3) the transfer of securities to us upon a vesting event of the securities or upon the exercise of options to purchase securities, in each case on a cashless or net exercise basis or to cover tax withholding obligations of the officer, director or security holder in connection with such vesting or exercise; provided that no filing under Section 16(a) of the Exchange Act or other public announcement is required or voluntarily made in connection with such vesting or exercise; (4) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of securities; provided that such plan does not provide for the transfer of securities during the applicable restricted period and no public announcement or filing under the Exchange Act regarding the establishment of such plan is required or made voluntarily by or on behalf of the officer, director, security holder or us; or (5) the transfer of securities under a trading plan pursuant to Rule 10b5-1 that has previously been established, provided that any public announcement or filing shall include a statement to the effect that the sale occurred pursuant to such trading plan pursuant to Rule 10b5-1.

J.P. Morgan Securities LLC and SVB Leerink LLC on behalf of the underwriters, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time with or without notice.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

Our common stock is listed on The Nasdaq Global Market under the symbol ALDR.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing

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transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be covered shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be naked shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. 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 the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on The Nasdaq Global Market, in the over-the-counter market or otherwise.

In addition, in connection with this offering certain of the underwriters (and selling group members) may engage in passive market making transactions in our common stock on The Nasdaq Global Market prior to the pricing and completion of this offering. Passive market making consists of displaying bids on The Nasdaq Global Market no higher than the bid prices of independent market makers and making purchases at prices no higher than these independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are generally limited to a specified percentage of the passive market maker's average daily trading volume in the common stock during a specified period and must be discontinued when such limit is reached. 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 these transactions. If passive market making is commenced, it may be discontinued at any time.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

The underwriters will serve as placement agents for the concurrent private placement and receive a placement agent fee equal to a percentage of the total purchase price of the private placement shares, which percentage will be equal to the percentage discount the underwriters will receive on shares sold in this public offering.

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Selling restrictions

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

Notice to prospective investors in the European Economic Area. In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

- 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 underwriters; or
- C. in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require the Company or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and the Company that it is a qualified investor within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive.

In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an offer of shares to the public in relation to any shares in any Relevant Member State means the communication in any form and by means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase 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, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

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

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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**) or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

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 (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 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.

Notice to prospective investors in Australia. This prospectus supplement:

does not constitute a product disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the **Corporations Act**);

has not been, and will not be, lodged with the Australian Securities and Investments Commission (**ASIC**), as a disclosure document *for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document under Chapter 6D.2 of the Corporations Act*;

does not constitute or involve a recommendation to acquire, an offer or invitation for issue or sale, an offer or invitation to arrange the *issue or sale, or an issue or sale, of interests to a retail client (as defined in section 761G of the Corporations Act and applicable regulations) in Australia; and*

may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, or Exempt Investors, available under section 708 of the Corporations Act.

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this prospectus supplement will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may,

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under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those securities to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to prospective investors in Hong Kong. The shares of our common stock 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 (Winding Up and Miscellaneous Provisions) 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 of our common stock 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 of our common stock 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 of our common stock have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares of our common stock nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Notice to prospective investors in Singapore. This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares of our common stock may not be circulated or distributed, nor may the shares of our common stock 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.

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Where the shares of our common stock 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 of our common stock pursuant to an offer made under Section 275 of the SFA except:

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;

where no consideration is or will be given for the transfer;

where the transfer is by operation of law;

as specified in Section 276(7) of the SFA; or

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 Switzerland. The shares of our common stock 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 does not constitute a prospectus within the meaning of, and 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 of our common stock 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 of our common stock 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 of our common stock will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares of our common stock 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 of our common stock.

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Legal matters

Cooley LLP, Seattle, Washington will pass upon the validity of the shares of common stock offered hereby. As of the date of this prospectus supplement, an individual attorney at Cooley LLP beneficially owned 4,998 shares of our common stock. Wilson Sonsini Goodrich & Rosati, Professional Corporation, Seattle, Washington, is representing the underwriters in connection with the offering.

Experts

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Annual Report on Internal Control Over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2018 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

Where you can find more information

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>.

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act, can also be accessed free of charge on the Investor section of our website, which is located at investor.alderbio.com. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus supplement.

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Incorporation of certain information by reference

The SEC allows us to incorporate by reference information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus supplement or the accompanying prospectus. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying 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 filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date of the prospectus supplement (other than information furnished under Item 2.02 or Item 7.01 of Form 8-K) and before the sale of all the securities covered by this prospectus supplement:

our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 25, 2019;

the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2017 from our Definitive Proxy Statement on Schedule 14A for our 2018 Annual Meeting of Stockholders, filed with the SEC on April 30, 2018;

our Current Reports on Form 8-K filed with the SEC on January 4, 2019, January 17, 2019 and February 8, 2019; and

the description of our common stock in our registration statement on Form 8-A, filed with the SEC on April 29, 2014, including any amendments or reports filed for the purposes of updating such description.

We will provide to each person, including any beneficial owner, to whom a prospectus supplement or the underlying prospectus is delivered, without charge upon the written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus supplement but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. Requests for such copies should be directed to us at the following address:

Alder BioPharmaceuticals, Inc.

Attn: Investor Relations

11804 North Creek Parkway South

Bothell, WA 98011

(425) 205-2900

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

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Prospectus

Common Stock

Preferred Stock

Debt Securities

Warrants

From time to time, we may offer and sell any combination of the securities described in this prospectus, either individually or in combination with other securities. We may also offer common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants.

We will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference, before buying any of the securities being offered.

Our common stock is listed on The NASDAQ Global Market under the trading symbol ALDR. On February 22, 2017, the last reported sale price of our common stock was \$21.75 per share. The applicable prospectus supplement will contain information, where applicable, as to other listings, if any, on The NASDAQ Global Market or other securities exchange of the securities covered by the applicable prospectus supplement.

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

This prospectus may not be used to consummate a sale of securities unless accompanied by a prospectus supplement.

The securities may be sold directly to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you

should refer to the section titled "Plan of Distribution" in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

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

The date of this prospectus is February 23, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, utilizing a shelf registration process. Under this shelf registration process, we may offer and sell shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in combination with other securities, in one or more offerings. There is no limit on the aggregate amount of the securities that we may offer pursuant to the registration statement of which this prospectus is a part. This prospectus provides you with a general description of the securities we may offer.

Each time we offer securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the 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 and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any free writing prospectuses we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading Incorporation of Certain Information by Reference, before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and the applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different or additional information. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

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The information appearing in this prospectus, any applicable prospectus supplement and any related free writing prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, the applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section titled **Where You Can Find More Information**.

Unless the context otherwise requires, we use the terms **Alder**, **company**, **we**, **us** and **our** in this prospectus to refer to Alder BioPharmaceuticals, Inc. and, where appropriate, our consolidated subsidiaries. **Alder**, **Alder BioPharmaceuticals**, and the Alder logo are the property of Alder BioPharmaceuticals, Inc. All other trademarks or trade names referred to in this prospectus and any prospectus supplement are the property of their respective owners.

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PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading Risk Factors contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Alder BioPharmaceuticals, Inc.

We are a clinical-stage biopharmaceutical company that discovers, develops and seeks to commercialize therapeutic antibodies with the potential to meaningfully transform current treatment paradigms. All of our product candidates were discovered and developed by Alder scientists using our proprietary antibody technology platform coupled with a deliberate approach to design and select candidates with properties that we believe optimize the therapeutic potential for patients and commercial competitiveness.

We are focusing our resources and development efforts principally on eptinezumab (ALD403), our most advanced product candidate, in order to maximize its therapeutic and commercial potential. Eptinezumab is our solely owned genetically engineered monoclonal antibody inhibiting calcitonin gene-related peptide (CGRP), a validated target that is understood to drive migraine initiation, maintenance and chronification. Designed to deliver a competitively differentiated approach to migraine prevention, we believe eptinezumab holds the potential to be a transformative therapeutic and meet a profound medical need, changing the migraine prevention treatment paradigm for physicians and patients living with migraine.

We were incorporated in Delaware in May 2002 as Alder BioPharmaceuticals, Inc. Our headquarters are located at 11804 North Creek Parkway South, Bothell, WA 98011, and our telephone number is (425) 205-2900. Our website address is www.alderbio.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus.

Description of Securities

We may offer shares of our common stock and preferred stock, various series of debt securities and/or warrants to purchase any of such securities, either individually or in combination with other securities, from time to time under this prospectus, together with the applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

designation or classification;

aggregate principal amount or aggregate offering price;

maturity date, if applicable;

original issue discount, if any;

rates and times of payment of interest or dividends, if any;

redemption, conversion, exercise, exchange or sinking fund terms, if any;

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ranking;

restrictive covenants, if any;

voting or other rights, if any;

conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange; and

material or special U.S. federal income tax considerations, if any.

The applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents we have incorporated by reference.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement:

the names of those agents or underwriters;

applicable fees, discounts and commissions to be paid to them;

details regarding over-allotment or other options, if any; and

the net proceeds to us, if any.

Common Stock. We may issue shares of our common stock from time to time. The holders of common stock are entitled to one vote per share on all matters to be voted on by the stockholders. Subject to the preferences of any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably any dividends our board of directors declares out of funds legally available for the payment of dividends. If we are liquidated, dissolved or wound up, the holders of common stock are entitled to share pro rata all assets remaining after payment of liabilities and liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no preemptive rights or rights to convert their common stock into any other securities. There are no redemption or sinking fund provisions applicable to the common stock. In this prospectus, we have summarized certain general features of the common stock under *Description of Capital Stock Common Stock*. We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to any common stock being offered.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our certificate of incorporation, our board of directors has the authority to designate up to 10,000,000 shares of preferred

stock in one or more series and to fix the privileges, preferences and rights of each series of preferred stock, any or all of which may be greater than the rights of the common stock. If we sell any new series of preferred stock under this prospectus and any applicable prospectus supplement, our board of directors will determine the rights, preferences and privileges of the preferred stock being offered, as well as the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Preferred stock may be convertible into our common stock or other securities of ours, or may be exchangeable for debt securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of the certificate of designation that describes the terms of the series of preferred stock being offered before the issuance of the related series of preferred stock. In this prospectus, we have summarized certain general features of the preferred stock under Description of Capital Stock Preferred Stock. We urge

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you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into or exchangeable for our common stock or our other securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

The debt securities will be issued under an indenture that we will enter into with a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities under *Description of Debt Securities*. We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indenture and any supplemental indentures that contain the terms of the debt securities. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or in combination with common stock, preferred stock and/or debt securities. In this prospectus, we have summarized certain general features of the warrants under *Description of Warrants*. We urge you, however, to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the particular series of warrants being offered, as well as the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the warrants. We have filed the forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants that we may offer as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants.

Warrants may be issued under a warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if any, in the applicable prospectus supplement relating to a particular series of warrants.

Use of Proceeds

Except as described in any applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we intend to use the net proceeds from the sale of the securities under this prospectus for general corporate purposes, which may include funding research and development, clinical trials, manufacturing activities and future commercialization activities, increasing our working capital, acquisitions or investments in businesses, products or technologies that are complementary to our own, and capital expenditures. See *Use of Proceeds* on page 5 of this prospectus.

NASDAQ Global Market Listing

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

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RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and discussed under the section titled “Risk Factors” contained in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference and any free writing prospectus that we may authorize for use in connection with a specific offering. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our securities to decline, resulting in a loss of all or part of your investment. Please also carefully read the section below titled “Forward-Looking Statements.”

FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

our ability to obtain and maintain regulatory approval of eptinezumab or any other product candidates;

our ability to successfully commercialize eptinezumab or any other products that are approved;

the rate and degree of market acceptance of our products;

our estimates of our expenses, ongoing losses, future revenues, capital requirements and our needs for or ability to obtain additional financing;

our ability to obtain and maintain intellectual property protection for our products and product candidates;

the ability to scale up manufacturing of our product candidates to commercial scale;

our ability to successfully establish and successfully maintain appropriate collaborations and derive significant revenues from those collaborations;

our reliance on third parties to conduct our clinical studies;

our reliance on third-party contract manufacturers to manufacture and supply our product candidates for us;

our ability to identify and develop new products and product candidates;

our ability to enroll patients in our clinical studies at the pace that we project;

our ability to retain and recruit key personnel;

our financial performance; and

developments and projections relating to our competitors or our industry.

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In some cases, you can identify forward-looking statements by terms such as anticipates, believes, could, estimates, expects, may, plans, potential, predicts, projects, should, would, will and similar expressions intended to indicate forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We discuss in greater detail, and incorporate by reference into this prospectus in their entirety, many of these risks and uncertainties under the section titled Risk Factors contained in the applicable prospectus supplement, in any free writing prospectus we may authorize for use in connection with a specific offering, and in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. You should read this prospectus, the applicable prospectus supplement, together with the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus we have authorized for use in connection with a specific offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

In addition, statements that we believe and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

FINANCIAL RATIOS

The following table sets forth our ratio of earnings to fixed charges and the ratio of our earnings to combined fixed charges and preferred stock dividends to earnings for each of the periods presented. Our net losses were insufficient to cover fixed charges and combined fixed charges and preferred stock dividends for each of the periods presented, other than the year ended December 31, 2014. Because of these deficiencies, the ratio information is not applicable for those periods. The extent to which earnings were insufficient to cover fixed charges and combined fixed charges and preferred stock dividends for those periods is shown below. Amounts shown are in thousands, except for ratios.

	Year Ended December 31,				
	2012	2013	2014	2015	2016
Ratio of earnings to fixed charges ⁽¹⁾	N/A	N/A	34.5	N/A	N/A
Ratio of earnings to combined fixed charges and preferred stock dividends	N/A	N/A	34.5	N/A	N/A
Deficiency of earnings available to cover fixed charges	\$ (17,806)	\$ (20,613)	N/A	\$ (85,470)	\$ (156,059)
Deficiency of earnings available to cover combined fixed charges and preferred stock dividends	\$ (17,806)	\$ (20,613)	N/A	\$ (85,470)	\$ (156,059)

⁽¹⁾ Fixed charges are comprised of interest expense and our estimate of interest within rental expense.

USE OF PROCEEDS

Except as described in any applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we intend to use the net proceeds from the sale of the

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securities under this prospectus for general corporate purposes, which may include funding research and development, clinical trials, manufacturing activities and future commercialization activities, increasing our working capital, acquisitions or investments in businesses, products or technologies that are complementary to our own, and capital expenditures. We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing securities.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, our certificate of incorporation authorizes us to issue up to 200,000,000 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 February 22, 2017, 50,409,220 shares of common stock were outstanding and no shares of preferred stock were outstanding.

The following summary description of our common stock and preferred stock is based on the provisions of our certificate of incorporation, bylaws, the applicable provisions of the Delaware General Corporation Law and the applicable provisions of the Washington Business Corporation Act. This information may not be complete in all respects and is qualified entirely by reference to the provisions of our certificate of incorporation, our bylaws, the Delaware General Corporation Law and the applicable provisions of the Washington Business Corporation Act. For information on how to obtain copies of our certificate of incorporation and our bylaws, which are exhibits to the registration statement of which this prospectus forms a part, see [Where You Can Find More Information](#).

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of stockholders. Cumulative voting for the election of directors is not provided for in our certificate of incorporation, which means that the holders of a majority of our shares of common stock can elect all of the directors then standing for election.

Dividends and Distributions

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available at the times and in the amounts that our board of directors may determine.

Liquidation Rights

Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, after payment of liquidation preferences on any outstanding shares of preferred stock and payment of other claims of creditors.

The rights, preferences, and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of preferred stock that we may designate and issue in the future.

Preemptive or Similar Rights

The holders of our common stock are not entitled to preemptive rights and the holders of our common stock are not subject to conversion or redemption.

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When we issue shares of common stock under this prospectus, the shares will be fully paid and nonassessable.

Preferred Stock

Pursuant to our certificate of incorporation, our board of directors has the authority, without further action by the stockholders, to issue the shares of preferred stock in one or more series. Our board of directors also has the authority to fix the designations, powers, preferences, privileges and relative, participating, optional or special rights and the qualifications, limitations or restrictions of any preferred stock issued, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of the common stock. Our board of directors, without stockholder approval, may issue preferred stock with voting, conversion or other rights that are superior to the voting and other rights of the holders of common stock. The issuance of preferred stock may have the effect of delaying, deferring or preventing a change of control of Alder without further action by the stockholders, and may have the effect of delaying or preventing changes in management of Alder. In addition, the issuance of preferred stock may have the effect of decreasing the market price of the common stock and may adversely affect the voting power of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation.

Our board of directors will determine the rights, preferences, privileges, qualifications, limitations or restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of the certificate of designation that describes the terms of the series of preferred stock that we are offering before the issuance of the related series of preferred stock. This description will include:

the title and stated value;

the number of shares we are offering;

the liquidation preference per share;

the purchase price per share;

the dividend rate per share, dividend period and payment dates and method of calculation for dividends;

whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;

our right, if any, to defer payment of dividends and the maximum length of any such deferral period;

the procedures for any auction and remarketing, if any;

the provisions for a sinking fund, if any;

the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;

any listing of the preferred stock on any securities exchange or market;

whether the preferred stock will be convertible into our common stock or other securities of ours, including warrants, and, if applicable, the conversion period, the conversion price, or how it will be calculated, and under what circumstances it may be adjusted;

whether the preferred stock will be exchangeable for debt securities, and, if applicable, the exchange period, the exchange price, or how it will be calculated, and under what circumstances it may be adjusted;

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voting rights, if any, of the preferred stock;

preemption rights, if any;

restrictions on transfer, sale or other assignment, if any;

a discussion of any material or special U.S. federal income tax considerations applicable to the preferred stock;

the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;

any limitations on issuances of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock being issued as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and

any other specific terms, rights, preferences, privileges, qualifications or restrictions of the preferred stock. When we issue shares of preferred stock under this prospectus, the shares will be fully paid and nonassessable.

Unless we specify otherwise in the applicable prospectus supplement, the preferred stock will rank, with respect to dividends and upon our liquidation, dissolution or winding-up:

senior to all classes or series of our common stock and to all of our equity securities ranking junior to the preferred stock;

on a parity with all of our equity securities the terms of which specifically provide that the equity securities rank on a parity with the preferred stock; and

junior to all of our equity securities the terms of which specifically provide that the equity securities rank senior to the preferred stock.

The term "equity securities" does not include convertible debt securities.

The General Corporation Law of the State of Delaware, the state of our incorporation, provides that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of that preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Registration Rights

We are party to an investor rights agreement which provides certain of our stockholders registration rights, as set forth below. This investor rights agreement was originally entered into in July 2005 and was amended and/or restated from time to time in connection with our preferred stock financings prior to our initial public offering. The registration of shares of our common stock pursuant to the exercise of registration rights described below would enable the holders to sell these shares without restriction under the Securities Act, when the applicable registration statement is declared effective. We will pay the registration expenses, other than underwriting discounts and commissions, of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Generally, 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. The demand, piggyback and Form S-3 registration rights described below will expire the later of (1) May 7, 2019 and (2) with respect to each stockholder, at such time as our capital stock is publicly traded and (a) such stockholder is entitled to sell all of its shares pursuant to Rule 144 of the Securities Act or (b) when such stockholder holds less than 1% of our outstanding common stock and is able to sell all its shares in any three-month period without registration in compliance with Rule 144 of the Securities Act.

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Demand Registration Rights

As of the date of this prospectus, the holders of an aggregate of approximately 3.7 million shares of our common stock are entitled to certain demand registration rights. The holders of a majority of these shares may, on not more than two occasions, request that we file a registration statement having an aggregate offering price to the public of not less than \$7,500,000 to register all or a portion of their shares.

Piggyback Registration Rights

In connection with the filing of the registration statement of which this prospectus forms a part, the holders of an aggregate of approximately 3.7 million shares of our common stock were entitled to, and the necessary percentage of holders waived, their rights to include their shares of registrable securities in the registration statement of which this prospectus forms a part. If we propose to register any of our securities under the Securities Act either for our own account or for the account of other security holders, the holders of these shares are entitled to certain piggyback registration rights allowing them 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 including a registration statement on Form S-3 as discussed below, other than with respect to a demand registration or a registration statement on Forms S-4 or S-8, 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.

Form S-3 Registration Rights

The holders of an aggregate of approximately 3.7 million shares of our common stock are entitled to certain Form S-3 registration rights. Such holders may make a request that we register their shares on Form S-3 if we are qualified to file a registration statement on Form S-3. Such request for registration on Form S-3 must cover securities the aggregate offering price of which, before payment of underwriting discounts and commissions, is at least \$500,000.

Anti-takeover Provisions

Certificate of Incorporation and Bylaws

Our certificate of incorporation provides for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors is 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 voting power of our shares of common stock outstanding are able to elect all of our directors. The directors may be removed by the stockholders only for cause upon the vote of holders of $66\frac{2}{3}\%$ of the shares then entitled to vote at an election of directors. Furthermore, the authorized number of directors may be changed only by resolution of our board of directors, and vacancies and newly created directorships on our board of directors may, except as otherwise required by law or determined by our board of directors, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum. Our certificate of incorporation and bylaws provide that all stockholder actions must be effected at a duly called meeting of stockholders and not by a consent in writing. A special meeting of stockholders may be called only by a majority of our whole board of directors, the chair of our board of directors or our chief executive officer. Our bylaws also provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specify requirements as to the form and content of a stockholder's notice.

Our certificate of incorporation further provides that the affirmative vote of holders of at least $66\frac{2}{3}\%$ of the voting power of all of the then outstanding shares of voting stock, voting as a single class, is required to amend certain provisions of our certificate of incorporation, including provisions relating to the structure of our board of

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directors, the size of the board, removal of directors, and actions by written consent. The affirmative vote of holders of at least $66\frac{2}{3}\%$ of the voting power of all of the then outstanding shares of voting stock, voting as a single class, is required for our stockholders to amend or repeal our bylaws, although our bylaws may also be amended by a simple majority vote of our whole board of directors.

The foregoing provisions make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of our company by replacing our board of directors. Because our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of 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 the control of our company.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of our company. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in control of our company or our management. As a consequence, these provisions also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

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

before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

upon closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned by (1) persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least $66\frac{2}{3}\%$ of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

any merger or consolidation involving the corporation and the interested stockholder;

any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;

subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or

the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

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In general, Section 203 defines an interested stockholder as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Washington Business Corporation Act

The laws of Washington, where our principal executive offices are located, impose restrictions on certain transactions between certain foreign corporations and significant stockholders. In particular, the Washington Business Corporation Act, or WBCA, prohibits a target corporation, with certain exceptions, from engaging in certain significant business transactions with a person or group of persons which beneficially owns 10% or more of the voting securities of the target corporation, an acquiring person, for a period of five years after such acquisition, unless the transaction or acquisition of shares is approved by a majority of the members of the target corporation's board of directors prior to the time of acquisition. Such prohibited transactions may include, among other things:

any merger or consolidation with, disposition of assets to, or issuance or redemption of stock to or from, the acquiring person;

any termination of 5% or more of the employees of the target corporation as a result of the acquiring person's acquisition of 10% or more of the shares; and

allowing the acquiring person to receive any disproportionate benefit as a stockholder.

After the five-year period, a significant business transaction may take place as long as it complies with certain fair price provisions of the statute or is approved at an annual or special meeting of stockholders.

We will be considered a target corporation so long as our principal executive office is located in Washington, and: (1) a majority of our employees are residents of the state of Washington or we employ more than 1,000 residents of the state of Washington; (2) a majority of our tangible assets, measured by market value, are located in the state of Washington or we have more than \$50 million worth of tangible assets located in the state of Washington; and (3) any one of the following: (a) more than 10% of our stockholders of record are resident in the state of Washington; (b) more than 10% of our shares are owned of record by residents of the state of Washington; or (c) 1,000 or more of our stockholders of record are resident in the state of Washington.

If we meet the definition of a target corporation, the WBCA may have the effect of delaying, deferring or preventing a change of control.

NASDAQ Global Market Listing

Our common stock is listed on The NASDAQ Global Market under the trading symbol ALDR.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent's address is 6201 15th Avenue, Brooklyn, New York 11219.

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DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as discount securities, which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with original issue discount, or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in the applicable prospectus supplement.

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

the title of the series of debt securities;

any limit upon the aggregate principal amount that may be issued;

the maturity date or dates;

the form of the debt securities of the series;

the applicability of any guarantees;

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;

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if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;

the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;

the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;

any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;

whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depositary for such global security or securities;

if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;

if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;

additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;

additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;

additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;

additions to or changes in the provisions relating to satisfaction and discharge of the indenture;

additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;

the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;

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whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;

the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any and principal amounts of the debt securities of the series to any holder that is not a United States person for federal tax purposes;

any restrictions on transfer, sale or assignment of the debt securities of the series; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;

if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any

indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

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If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. 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, provided that:

the direction so given by the holder is not in conflict with any law or the applicable indenture; and

subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

the holder has given written notice to the trustee of a continuing event of default with respect to that series;

the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and

the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters:

to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;

to comply with the provisions described above under Description of Debt Securities Consolidation, Merger or Sale;

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

to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;

to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;

to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;

to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under **Description of Debt Securities General** to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;

to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of any debt securities of any series;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

provide for payment;

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

pay principal of and premium and interest on any debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

recover excess money held by the trustee;

compensate and indemnify the trustee; and

appoint any successor trustee.

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In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or DTC, or another depository named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an

indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

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Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities will be governed by and construed in accordance with the internal laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement and free writing prospectus, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be offered independently or in combination with common stock, preferred stock or debt securities offered by any prospectus supplement. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The following description of warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

We have filed forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants that may be offered as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants. The following summaries of material terms and provisions of the warrants are subject to, and qualified in their entirety by reference to, all the provisions of the form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements applicable to a particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplement related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectus, and the complete form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements,

that contain the terms of the warrants.

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General

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

the offering price and aggregate number of warrants offered;

the currency for which the warrants may be purchased;

if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;

the terms of any rights to redeem or call the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the dates on which the right to exercise the warrants will commence and expire;

the manner in which the warrant agreements and warrants may be modified;

a discussion of material or special U.S. federal income tax considerations, if any, of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding-up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered. Unless we otherwise specify in the applicable prospectus supplement, warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

Upon receipt of payment and the warrant or warrant certificate, as applicable, properly completed and duly executed at the corporate trust office of the warrant agent, if any, or any other office, including ours, indicated in the prospectus supplement, we will, as soon as practicable, issue and deliver the securities purchasable upon such exercise. If less than all of the warrants (or the warrants represented by such warrant certificate) are exercised, a new warrant or a new warrant certificate, as applicable, will be issued for the remaining warrants.

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Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and any warrant agreements will be governed by and construed in accordance with the internal laws of the State of New York.

Enforceability of Rights by Holders of Warrants

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

LEGAL OWNERSHIP OF SECURITIES

We may issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depositary or warrant agent maintain for this purpose as the **holders** of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as **indirect holders** of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depositary or its participants. Consequently, for securities issued in global form, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in street name. Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

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For securities held in street name, we will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depositary participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of the indenture or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

the performance of third-party service providers;

how it handles securities payments and notices;

whether it imposes fees or charges;

how it would handle a request for the holders' consent, if ever required;

whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;

how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and

if the securities are in book-entry form, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depositary for all securities issued in book-entry form.

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A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under the section titled "Special Situations When a Global Security Will Be Terminated" in this prospectus. As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

The rights of an indirect holder relating to a global security will be governed by the account rules of the investor's financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;

an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;

an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;

an investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;

the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security;

we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in a global security, nor do we or any applicable trustee supervise the

depository in any way;

the depository may, and we understand that DTC will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and

financial institutions that participate in the depository's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

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Special Situations When a Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, the global security will terminate when the following special situations occur:

if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;

if we notify any applicable trustee that we wish to terminate that global security; or

if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the applicable prospectus supplement. When a global security terminates, the depositary, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, at-the-market offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute the securities from time to time in one or more transactions:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to such prevailing market prices; or

at negotiated prices.

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

the name or names of the underwriters, if any;

the purchase price of the securities or other consideration therefor, and the proceeds, if any, we will receive from the sale;

any options under which underwriters may purchase additional securities from us;

any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;

any public offering price;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

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If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any option to purchase additional shares. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell the securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions payable to the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, the agent will act on a best-efforts basis for the period of its appointment.

We may provide agents and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the option to purchase additional shares or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters that are qualified market makers on The NASDAQ Global Market may engage in passive market making transactions in the common stock on The NASDAQ Global Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate

amount of the securities offered pursuant to this prospectus and the applicable prospectus supplement.

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LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon for us by Cooley LLP, Seattle, WA. As of the date of this prospectus, an individual attorney at Cooley LLP beneficially owned 4,998 shares of our common stock.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Annual Report on Internal Control Over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2016 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to Alder BioPharmaceuticals, Inc.'s liquidity as described in Note 1 to the consolidated financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth or incorporated by reference in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 000-36431):

our Annual Report on Form 10-K for the year ended December 31, 2016, which was filed on February 23, 2017;

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 for our 2016 Annual Meeting of Stockholders, filed with the SEC on April 29, 2016;

our Current Report on Form 8-K, which was filed on January 31, 2017; and

the description of our common stock in our registration statement on Form 8-A filed with the SEC on April 29, 2014, including all amendments and reports filed for the purpose of updating such description.

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

We will furnish without charge to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. Any such request may be made by writing or telephoning us at the following address or phone number:

Alder BioPharmaceuticals, Inc.

Attn: Investor Relations

11804 North Creek Parkway South

Bothell, WA 98011

(425) 205-2900

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11,304,348 shares

Common stock

Prospectus supplement

J.P. Morgan

**SVB Leerink
RBC Capital Markets**

Wells Fargo Securities

February 27, 2019