UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2019

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File Number: 001-36431

Alder BioPharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**90-0134860**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

11804 North Creek Parkway South
Bothell, WA 98011
(Address of principal executive offices including zip code)

Registrant's telephone number, including area code: (425) 205-2900

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of April 25, 2019, the registrant had 83,503,820 shares of common stock, $0.0001 par value per share, outstanding.

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Exchange on Which Registered
Common Stock, $0.0001 par value per share	ALDR	The Nasdaq Stock Market LLC (The Nasdaq Global Market)

Alder BioPharmaceuticals, Inc.

Quarterly Report on Form 10-Q

For the Quarter Ended March 31, 2019

INDEX

In this Quarterly Report on Form 10-Q, "we," "our," "us," "Alder," and "the Company" refer to Alder BioPharmaceuticals, Inc. and, where appropriate, its consolidated subsidiaries. "Alder," "Alder BioPharmaceuticals" and the Alder logo are the property of Alder BioPharmaceuticals, Inc. This report contains references to our trademarks and trade names and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this report may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. 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.

PART I. – FINANCIAL INFORMATION

Item 1. Condensed Consolidated Financial Statements

Alder BioPharmaceuticals, Inc.

Condensed Consolidated Balance Sheets

(unaudited)

	March 31, 2019	December 31, 2018
	(in thousands, except share and per share data)	
Assets		
Current assets		
Cash and cash equivalents	$ 126,105	$ 87,865
Short-term investments	348,517	319,504
Restricted cash	23,886	5,000
Prepaid expenses and other assets	3,806	7,440
Total current assets	502,314	419,809
Property and equipment, net	6,149	6,400
Right of use assets	4,693	—
Other assets	12	30
Total assets	$ 513,168	$ 426,239
Liabilities, convertible preferred stock and stockholders' equity		
Current liabilities		
Accounts payable	$ 15,316	$ 8,945
Accrued liabilities	42,687	19,217
Accrued dividends on convertible preferred stock	1,311	—
Operating lease liability	946	—
Deferred rent	—	74
Total current liabilities	60,260	28,236
Long-term operating lease liability	4,321	—
Long-term deferred rent	—	510
2025 convertible senior notes, net	185,146	182,104
Derivative liability	2,633	1,658
Total liabilities	252,360	212,508
Commitments and contingencies		
Class A-1 convertible preferred stock; $0.0001 par value; 10,000,000 shares authorized; 760,753 shares and no shares issued and outstanding, respectively; liquidation preference of $100,000 and zero, respectively	103,755	103,755
Stockholders' equity		
Common stock; $0.0001 par value; 200,000,000 shares authorized; 83,246,074 and 68,410,576 shares issued and outstanding, respectively	8	7
Additional paid-in capital	1,239,411	1,074,963
Accumulated deficit	(1,081,872)	(963,938)
Accumulated other comprehensive loss	(494)	(1,056)
Total stockholders' equity	157,053	109,976
Total liabilities, convertible preferred stock and stockholders' equity	$ 513,168	$ 426,239

The accompanying notes are an integral part of these condensed consolidated financial statements.

Alder BioPharmaceuticals, Inc.

Condensed Consolidated Statements of Operations

(unaudited)

	Three Months Ended March 31,	
	2019	**2018**
	(in thousands, except share and per share data)	
Revenues		
Collaboration and license agreements	$ —	$ —
Operating expenses		
Research and development	69,589	74,048
General and administrative	44,498	11,553
Total operating expenses	114,087	85,601
Loss from operations	(114,087)	(85,601)
Other income (expense)		
Interest income	1,966	1,643
Interest expense	(4,838)	(2,851)
Change in fair value of derivative liability	(975)	—
Total other income (expense), net	(3,847)	(1,208)
Net loss before equity in net loss of unconsolidated entity	(117,934)	(86,809)
Equity in net loss of unconsolidated entity	—	(222)
Net loss	$ (117,934)	$ (87,031)
Deemed dividends on convertible preferred stock attributable to accretion of beneficial conversion feature	—	(29,460)
Dividends on convertible preferred stock	(1,311)	(1,083)
Net loss applicable to common stockholders	$ (119,245)	$ (117,574)
Net loss per share applicable to common stockholders - basic and diluted	$ (1.63)	$ (1.73)
Weighted average number of common shares used in net loss per share - basic and diluted	73,056,907	67,844,872

The accompanying notes are an integral part of these condensed consolidated financial statements.

Alder BioPharmaceuticals, Inc.

Condensed Consolidated Statements of Comprehensive Loss

(unaudited)

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Net loss	$ (117,934)	$ (87,031)
Other comprehensive income (loss):		
Unrealized gain (loss) on securities available-for-sale, net of tax	562	(877)
Total other comprehensive income (loss), net	562	(877)
Comprehensive loss	$ (117,372)	$ (87,908)

The accompanying notes are an integral part of these condensed consolidated financial statements.

Alder BioPharmaceuticals, Inc.

Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity

(unaudited)

	Class A-1 Convertible Preferred Stock		Common Stock					
	Shares	Amount	Shares	Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	(in thousands, except for share data)							
Balances at December 31, 2017	—	—	67,842,942	7	946,869	(667,509)	(92)	279,275
Net loss	—	—	—	—	—	(87,031)	—	(87,031)
Accrued dividends on convertible preferred stock	—	—	—	—	(1,083)	—	—	(1,083)
Other comprehensive loss	—	—	—	—	—	—	(877)	(877)
Issuance of Class A-1 convertible preferred stock, net of issuance costs of $2.3 million	725,268	97,710	—	—	—	—	—	—
Beneficial conversion feature on Class A-1 convertible preferred stock	—	(29,460)	—	—	29,460	—	—	29,460
Deemed dividend on convertible preferred stock attributable to accretion of beneficial conversion feature	—	29,460	—	—	(29,460)	—	—	(29,460)
Equity component of 2025 convertible senior notes	—	—	—	—	109,911	—	—	109,911
Equity component of deferred financing costs for 2025 convertible senior notes	—	—	—	—	(3,763)	—	—	(3,763)
Exercise of stock options	—	—	5,759	—	20	—	—	20
Stock-based compensation	—	—	—	—	5,946	—	—	5,946
Balances at March 31, 2018	725,268	$ 97,710	67,848,701	$ 7	$ 1,057,900	$ (754,540)	$ (969)	$ 302,398
Balances at December 31, 2018	760,753	$ 103,755	68,410,576	$ 7	$ 1,074,963	$ (963,938)	$ (1,056)	$ 109,976
Net loss	—	—	—	—	—	(117,934)	—	(117,934)
Accrued dividends on convertible preferred stock	—	—	—	—	(1,311)	—	—	(1,311)
Other comprehensive loss	—	—	—	—	—	—	562	562
Issuance of common stock, net of offering costs	—	—	14,739,130	1	159,041	—	—	159,042
Exercise of stock options	—	—	96,368	—	430	—	—	430
Stock-based compensation	—	—	—	—	6,288	—	—	6,288
Balances at March 31, 2019	760,753	$ 103,755	83,246,074	$ 8	$ 1,239,411	$ (1,081,872)	$ (494)	$ 157,053

The accompanying notes are an integral part of these condensed consolidated financial statements.

Alder BioPharmaceuticals, Inc.

Condensed Consolidated Statements of Cash Flows

(unaudited)

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Operating activities		
Net loss	$ (117,934)	$ (87,031)
Adjustments to reconcile net loss to net cash used in operating activities		
Equity in net loss of unconsolidated entity	—	222
Depreciation and amortization	533	801
Stock-based compensation	6,288	5,946
Accretion of discount on convertible notes	3,042	1,689
Non-cash change in fair value of derivative liability	975	—
Other non-cash charges, net	(729)	(605)
Changes in operating assets and liabilities		
Prepaid expenses and other assets	3,652	3,733
Accounts payable	6,392	5,316
Accrued liabilities	23,205	(4,163)
Deferred rent	—	(3)
Net cash used in operating activities	(74,576)	(74,095)
Investing activities		
Purchases of investments	(64,022)	(415,203)
Proceeds from maturities of investments	36,290	156,000
Proceeds from sales of investments	—	83,184
Purchases of property and equipment	(303)	(212)
Net cash used in investing activities	(28,035)	(176,231)
Financing activities		
Proceeds from issuance of 2025 convertible senior notes, net of offering costs	—	277,656
Proceeds from issuance of convertible preferred stock, net of offering costs	—	97,710
Proceeds from issuance of common stock, net of offering costs	159,307	—
Proceeds from exercise of stock options	430	20
Net cash provided by financing activities	159,737	375,386
Net increase in cash, cash equivalents and restricted cash	57,126	125,060
Cash, cash equivalents and restricted cash		
Beginning of period	92,865	86,896
End of period	$ 149,991	$ 211,956
Supplemental disclosures:		
Cash paid for interest	$ 3,594	$ —
Offering costs included in accounts payable and accrued liabilities	$ 265	$ —
Purchases of property and equipment included in accounts payable and accrued liabilities	$ 188	$ 22

The accompanying notes are an integral part of these condensed consolidated financial statements.

1. Nature of Business

Alder BioPharmaceuticals, Inc. (the "Company") is 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. The Company has developed a proprietary antibody platform designed to select and manufacture antibodies that have the potential to maximize efficacy as well as speed of onset and durability of therapeutic response. The Company was incorporated in Delaware on May 20, 2002 and is located in Bothell, Washington.

Financings

On March 4, 2019, the Company completed an underwritten public offering of 13,000,000 shares of common stock, which included 1,695,652 shares issued pursuant to the underwriters' exercise of their option to purchase additional shares. Concurrent with the public offering, the Company sold in a private placement 1,739,130 shares of common stock to the Redmile Group, LLC (a related party) and certain institutional and other accredited investors affiliated with or managed by Redmile Group, LLC. The Company received approximately $159.0 million in net proceeds from these offerings, after deducting underwriting discounts and commissions and placement agent fees of $10.2 million and offering expenses of approximately $0.3 million.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements reflect the accounts of Alder BioPharmaceuticals, Inc. and its wholly-owned subsidiaries, Alder BioPharmaceuticals Pty. Ltd., AlderBio Holdings LLC, and Alder BioPharmaceuticals Limited. All inter-company balances and transactions have been eliminated in consolidation. The condensed consolidated balance sheet data as of December 31, 2018 were derived from audited financial statements. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC") and generally accepted accounting principles in the United States of America ("GAAP") for unaudited condensed consolidated financial information. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. The accompanying unaudited condensed consolidated financial statements reflect all adjustments consisting of normal recurring adjustments which, in the opinion of management, are necessary for a fair statement of the Company's financial position and results of its operations, as of and for the periods presented. The Company manages its business as one operating segment; however, the Company operates in three geographic regions: United States, Australia, and Ireland. Substantially all of the Company's assets are located in the United States.

The Company has a relationship with a variable interest entity ("VIE"). The Company evaluates VIEs to determine whether the Company is the primary beneficiary by performing a qualitative and quantitative analysis of each VIE that includes a review of, among other factors, the VIE's capital structure, contractual terms, related party relationships, the Company's fee arrangements and the design of the VIE. This analysis includes determining whether the Company (1) has the power to direct matters that most significantly impact the activities of the VIE, and (2) has the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to the VIE.

In circumstances where the Company is not the primary beneficiary, but the Company has the ability to exercise significant influence over the operating and financial policies of a company in which it has an investment, the Company utilizes the equity method of accounting for recording investment activity. In assessing whether the Company exercises significant influence, it considers the nature and magnitude of the investment, the voting and protective rights held, any participation in the governance of the other company, and other relevant factors such as the presence of a collaboration or other business relationship. Under the equity method of accounting, the Company records in its results of operations its share of income or loss of the other company. If the Company's share of losses exceeds the carrying value of its investment, it will suspend recognizing additional losses and will continue to do so unless the Company commits to providing additional funding. The Company monitors its investment to evaluate whether any decline in value has occurred that would be other-than-temporary, based on the implied value of recent company financings, public market prices of comparable companies, and general market conditions. The carrying value of the investment is included in the Company's condensed consolidated balance sheet as investment in unconsolidated entity.

These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and accompanying notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. The results of the Company's operations for the three months ended March 31, 2019 are not necessarily indicative of the results to be expected for the full year or for any other period.

Concentrations of Credit Risk

The Company is exposed to credit risk from its deposits of cash, cash equivalents, investments and restricted cash in excess of amounts insured by the Federal Deposit Insurance Corporation and Securities Investor Protection Corporation.

Restricted Cash

The Company had restricted cash of $23.9 million as of March 31, 2019, classified as current assets. The funds are restricted pursuant to contractual agreements with third-party manufacturers for payments to be made under those agreements in 2019, or for security under standby letter of credit agreements which expire in 2019.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the condensed consolidated balance sheets to the total of cash, cash equivalents and restricted cash shown in the condensed consolidated statement of cash flows.

	March 31, 2019	December 31, 2018
	(in thousands)	
Cash and cash equivalents	$ 126,105	$ 87,865
Restricted cash	23,886	5,000
Total cash, cash equivalents, and restricted cash shown in the consolidated statements of cash flows	$ 149,991	$ 92,865

Convertible Senior Notes, net

In accordance with accounting guidance for debt with conversion and other options, the Company separately accounted for the liability and equity components of the 2.5% Convertible Senior Notes due 2025 (the "Convertible Notes") by allocating the proceeds between the liability component and the embedded conversion option (the "Equity Component") due to the Company's ability to settle the Convertible Notes in cash, common stock or a combination of cash and common stock, at its option. The carrying amount of the liability component was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature. The allocation was performed in a manner that reflected the Company's non-convertible debt borrowing rate for similar debt. The Equity Component of the Convertible Notes was recognized as a debt discount and represents the difference between the proceeds from the issuance of the Convertible Notes and the fair value of the liability of the Convertible Notes on their respective dates of issuance. The excess of the principal amount of the liability component over its carrying amount is amortized to interest expense using the effective interest method over seven years. The Equity Component is not remeasured as long as it continues to meet the conditions for equity classification. In connection with the issuance of the Convertible Notes, the Company also incurred certain offering costs directly attributable to the offering. Such costs are deferred and amortized to interest expense over the term of the debt using the effective interest method. A portion of the deferred financing costs incurred in connection with the Convertible Notes was deemed to relate to the Equity Component and was allocated to additional paid-in capital.

Convertible preferred stock

The Company recorded the convertible preferred stock at fair value on the date of issuance, net of issuance costs. The convertible preferred stock is recorded outside of stockholders' equity because, in the event of certain deemed liquidation events considered not solely within the Company's control, such as a merger or acquisition and sale of all or substantially all of the Company's assets, the convertible preferred stock will become redeemable at the option of the holders.

Revenue recognition

In May 2016, the Company licensed the exclusive worldwide rights to its product candidate clazakizumab to Vitaeris, Inc. ("Vitaeris"), a newly formed company based in Vancouver, British Columbia. In exchange for the rights to clazakizumab, the Company received an equity interest in Vitaeris and is eligible to receive royalties and certain other payments including revenue from

the sale of drug supply inventory. The Company did not record any revenue under this agreement in the three months ended March 31, 2019 and 2018.

In the future, the Company may generate revenue from product sales and may enter into agreements with strategic partners for the development and commercialization of the Company's products under which revenues may consist of license fees, non-refundable upfront fees, milestones, funding of research and development activities, sales of drug supply, or other revenue. The Company could receive both fixed and variable consideration.

On January 1, 2018, the Company adopted ASC Topic 606 and related pronouncements regarding revenue recognition using the modified retrospective method. The adoption of this guidance did not have a material impact on the Company's condensed consolidated financial statements. In determining the appropriate amount of revenue to be recognized as it fulfills its obligations under its agreements, the Company will perform the following steps: (i) identify the contract; (ii) identify the performance obligations; (iii) measure the transaction price, including the constraint on variable consideration; (iv) allocate the transaction price to the performance obligations based on estimated selling prices; and (v) recognize revenue when (or as) the Company satisfies each performance obligation.

The identification of a contract to be accounted for under ASC Topic 606 requires both parties to approve the contract and are committed to delivering their respective performance obligations, be able to identify the goods or services to be transferred, identify the payment terms, and for the contract to be have commercial substance.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of accounting in ASC Topic 606. The Company's performance obligations may include license rights and development services. Significant management judgment will be required to determine the level of effort required under an arrangement and the period over which the Company expects to complete its performance obligations under the arrangement.

When the Company has substantive performance obligations under an arrangement accounted for as one unit of accounting, revenues will be recognized using a proportional performance-based approach. Under this approach, revenue recognition is based on costs incurred to date compared to total expected costs to be incurred over the performance period as this is considered to be representative of the delivery of service under the arrangement. Changes in estimates of total expected performance costs or service obligation time-period will be accounted for prospectively as a change in estimate. Revenues recognized at any point in time will be limited to the amount of noncontingent payments received or due.

The Company will allocate the total transaction price to each performance obligation based on the estimated relative standalone selling prices, or SSP, at contract inception of the promised goods or service underlying each performance obligation. If SSP is not available, ASC Topic 606 allows the use of adjusted market assessment approach, expected cost-plus margin approach, or residual approval, among others, as long as the estimation results in an accurate representation of what the price would be charged in a separate transaction to a customer. The Company may consider the following key assumptions when estimating the SSP: the development timeline, revenue forecast, commercialization expenses, discount rate and probabilities of technical and regulatory success.

Licenses of intellectual property: If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company will recognize revenues from non-refundable, up-front fees allocated to the license when the license is transferred to the customer, and the customer can use and benefit from the license. For licenses that are bundled with other promises, the Company will utilize judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company will evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Milestone payments: At the inception of each arrangement that includes milestone payments, the Company will evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the value of the associated milestone (such as a regulatory submission by the Company) will be included in the transaction price. Milestone payments that are not within the control of the Company, such as approvals from regulators, will not be considered probable of being achieved until those approvals are received. When the Company's assessment of probability of achievement changes and variable consideration becomes probable, any additional estimated consideration will be allocated to each performance obligation based on the estimated relative standalone selling prices of the promised goods or service underlying each performance obligation and recorded in license, collaboration, and other revenues based upon when the customer obtains control of each element.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company will recognize revenue at the later of (a) when the related sales occur, or (b) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

Collaboration payments: The Company may also perform research and development activities on behalf of collaborative partners that are paid for by the collaborators. For research and development activities which are not determined to be separate units of

accounting based on the criteria above, revenues for these research and development activities will be recognized using the single unit of accounting method for that collaborative arrangement. For research and development activities which are determined to be separate units of accounting, arrangement consideration will be allocated and revenues will be recognized as services are delivered, assuming the general criteria for revenue recognition noted above have been met. The corresponding research and development costs incurred under these contracts will be included in research and development expense in the consolidated statements of operations. For sales of drug supply inventory at cost, the revenue will be recognized upon transfer of the inventory.

The Company expects to invoice its customers upon the completion of the effort, based on the terms of each agreement. Amounts earned, but not yet collected from the customers, if any, will be included in accounts receivable in the accompanying consolidated balance sheets. Deferred revenue will arise from payments received in advance of the culmination of the earnings process. Deferred revenue expected to be recognized within the next 12 months will be classified as a current liability. Deferred revenue will be recognized as revenue in future periods when the applicable revenue recognition criteria have been met.

Lease Accounting

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU-2016-02, Leases. In July 2018, the FASB issued ASU 2018-10, Codification Improvements and ASU 2018-11, Targeted Improvements, to Topic 842 – Leases. In March 2019, the FASB issued ASU-2019-01, Codification Improvements. The Company adopted the standard on January 1, 2019 using the optional transition method. As such, the consolidated balance sheets and statements of operations for prior periods will not be comparable in the year of adoption of ASC 842. The Company did not elect the package of practical expedients permitted under the transition guidance within the standard. Accordingly, the Company reassessed the conclusion of whether the existing arrangements contain a lease, lease classification and initial direct costs under ASC 842. As a result of the reassessments performed, the Company has two real estate operating leases under ASC 842 described in Note 10. As a result of the adoption of ASC 842, the Company recorded $4.7 million of operating lease right of use ("ROU") assets and a total of $5.3 million of lease liabilities on the consolidated balance sheets as of January 1, 2019.

The Company determines if an arrangement is, or contains, a lease at inception. Operating leases are included in ROU assets, and operating lease liabilities on the consolidated balance sheets. ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities representing the Company's obligation to make lease payments arising from the lease. ROU assets and liabilities are recognized at the lease commencement date based on the present value of lease payments to be made over the lease term. The ROU asset also includes any lease payments made at or before the lease commencement date and excludes lease incentives received. As most of the Company's leases do not provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. The Company uses the implicit rate when readily determinable. The lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Operating lease expense is recognized on a straight-line basis over the lease term. The Company has elected to not to apply the recognition requirements of ASC 842 to short-term leases, which are defined as leases that, at the lease commencement date, have a lease term of 12 months or less and do not include an option to purchase the underlying asset that the Company is reasonably certain to exercise.

For real estate lease agreements entered into or modified after the adoption of ASC 842 that include lease and non-lease components, the Company has elected to account for the lease and non-lease components, such as common area maintenance charges, as a single lease component.

Stock compensation

In June 2018, the FASB issued ASU 2018-07, Compensation-Stock Compensation (Topic 718) – Improvements to Nonemployee Share-Based Payment Accounting. The amendment substantially aligns accounting for share-based payments to employees and non-employees by expanding the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. Consistent with the accounting requirement for employee share-based payment awards, nonemployee share-based payment awards will be measured at grant-date fair value. On January 1, 2019, the Company adopted this ASU which did not have a material effect on the Company's condensed consolidated financial statements and related disclosures.

Long-Term Incentive Plan

In January 2018, the Company established a long-term incentive plan ("LTIP") which provides eligible employees with the opportunity to receive performance-based compensation comprised of restricted stock units. The vesting of the restricted stock units is contingent upon the achievement of pre-determined regulatory milestones. The Company records compensation expense over the estimated service period for a milestone when the achievement of the milestone is considered probable, which is assessed at each reporting date. Once a milestone is considered probable, the Company records compensation expense based on the portion of the service period elapsed to date with respect to that milestone, with a cumulative catch-up, net of estimated forfeitures, and recognizes remaining compensation expense, if any, over the remaining estimated service period. No compensation expense has been recorded to date under the LTIP as the conditions for recognizing expense have not yet been met. As of March 31, 2019, the estimated potential value to be delivered in restricted stock units to participants eligible for the LTIP was approximately $9.8 million. The total potential value to be delivered under the LTIP is expected to change in the future for several reasons, including the addition of more eligible employees to the LTIP.

2018 Inducement Award Plan

On June 11, 2018, the Company established the 2018 Inducement Award Plan ("Inducement Plan"). The Inducement Plan allows for the grant of options, restricted stock, restricted stock unit awards, and performance unit awards to new employees of the Company by granting an award to such new employee as an inducement to begin employment with the Company. The Company reserved 3,000,000 shares of its common stock for issuance under the Inducement Plan. As of March 31, 2019, there were 1,090,000 shares available for issuance under the Inducement Plan.

Liquidity and Going Concern

The Company has an accumulated deficit as of March 31, 2019. To date, the Company has funded its operations primarily through sales and issuances of its capital stock, Convertible Notes and payments from its former collaboration partners, and will require substantial additional capital for research and product development. In January 2019, the Company entered into an equity distribution agreement to commence an "at the market" offering program, or the ATM program, under which the Company is permitted to offer and sell, from time to time, shares of common stock having a maximum aggregate offering price of up to $100 million. The ATM program will remain in full force and effect until the ATM program is terminated. The Company has not raised any funds through the ATM program. In March 2019, the Company completed an underwritten public offering of 13,000,000 shares of common stock concurrent with a private placement of 1,739,130 shares of common stock resulting in total net proceeds of $159.0 million, after deducting underwriting discounts and commissions, placement agent fees, and offering expenses.

The Company estimates the available cash, cash equivalents, investments and restricted cash as of March 31, 2019 will be sufficient to meet the Company's projected operating requirements into the latter part of 2020. These operating requirements consist principally of expenditures related to the establishment of the eptinezumab commercial drug supply chain, continued build-out of the Company's commercial organization (e.g., marketing, sales, medical affairs, payor access, information technology) and pre-launch market readiness activities. The Company has based its estimate of the timing for its projected expenditures on assumptions that may prove to be wrong, and it could utilize its available capital resources sooner than it currently expects. Furthermore, the Company's operating plans may change, and it may need additional funds to meet operational needs and capital requirements sooner than planned. The Company will need additional funding to execute and sustain the commercial launch of eptinezumab. The Company will also need to obtain substantial additional sources of funding to develop and commercialize ALD1910 and its other product candidates. The Company expects to finance future cash needs through equity financings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements, but there are no assurances that the Company will be able to raise sufficient amounts of funding in the future on acceptable terms, or at all. If such additional funding is not available on favorable terms or at all, the Company may need to delay or reduce the scope of its development programs or commercialization activities, or grant rights in the United States, as well as outside the United States, to its product candidates to one or more partners.

The condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates continuity of operations, the realization of assets and the satisfaction of liabilities and commitments in the normal course of business.

Recent Accounting Pronouncements

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820) – Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement. The amendment is intended to improve the effectiveness of disclosures in the notes to financial statements related to fair value measurements in Topic 820. This ASU will become effective for annual periods beginning after December 15, 2019, including interim periods within that period, and early adoption is permitted. The Company is currently evaluating the effect of this new guidance on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40) – Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. This amendment aligns the accounting for implementation costs incurred in a hosting arrangement that is a service contract with the guidance on capitalizing costs associated with developing or obtaining internal-use software. This ASU will become effective for annual periods beginning after December 15, 2019, including interim periods within that period, and early adoption is permitted. The Company does not expect this ASU to have a material effect on its consolidated financial statements.

The Company has reviewed other recent accounting pronouncements and concluded that they are either not applicable to the business, or that no material effect is expected on the condensed consolidated financial statements as a result of future adoption.

3. Net Loss Per Share Applicable to Common Stockholders

Basic net loss per share applicable to common stockholders is calculated by dividing net loss applicable to common stockholders by the weighted average common shares outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is calculated by adjusting the weighted average common shares outstanding for the dilutive effect of common stock equivalents outstanding for the period, determined using the treasury-stock method.

	Three Months Ended March 31,	
	2019	2018
Net loss applicable to common stockholders (in thousands)	$ (119,245)	$ (117,574)
Denominator		
Weighted average common shares outstanding - basic and diluted	73,056,907	67,844,872
Net loss per share applicable to common stockholders - basic and diluted	$ (1.63)	$ (1.73)

The following weighted average numbers of securities were excluded from the calculation of diluted net loss per share for the three months ended March 31, 2019 and 2018 because including them would have had an anti-dilutive effect. Therefore, basic and diluted net loss per share were the same for all periods presented.

	Three Months Ended March 31,	
	2019	2018
Common shares underlying 2025 convertible senior notes	14,197,526	9,060,357
Common shares underlying convertible preferred stock	7,607,530	6,366,241
Stock options and awards	12,491,632	8,688,966
Employee stock purchase plan	62,967	93,321
	34,359,655	24,208,885

4. Investments

Investments consisted of available-for-sale securities as follows:

	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
	(in thousands)			
Type of security as of March 31, 2019				
U.S. government agency obligations maturing in one year or less	$ 349,007	$ —	$ (490)	$ 348,517
Type of security as of December 31, 2018				
U.S. government agency obligations maturing in one year or less	$ 320,558	$ —	$ (1,054)	$ 319,504

Realized gains and losses are determined based on the specific identification method and are reported in other income in the condensed consolidated statement of operations. The Company had no realized gains or losses on sales of available-for-sale securities in the three months ended March 31, 2019. During the three months ended March 31, 2018, the Company recorded $0.3 million in realized losses related to available-for-sale securities included in the Company's condensed consolidated statement of operations. See Note 6 for additional information about fair value disclosures.

5. Investment in Unconsolidated Entity and Derivative Liability

In May 2016, the Company licensed the exclusive worldwide rights to its product candidate clazakizumab to Vitaeris. In exchange for the rights to clazakizumab, the Company received an equity stake in Vitaeris and is eligible to receive royalties and certain other payments. Since clazakizumab was developed internally by the Company, all previous expenditures to develop the compound were recognized as expense in the period incurred and there was no carrying value on the Company's condensed consolidated balance sheet. In 2016, the Company recognized a gain on the license agreement of $1.1 million, which was determined as the initial fair value of the Company's equity stake in Vitaeris.

Vitaeris is a VIE for which the Company is not the primary beneficiary as the Company does not have the power to direct the activities that most significantly influence the economic performance of the entity. In addition to the Company's exchange of license rights for clazakizumab, Vitaeris was capitalized through cash investments by other parties. The investment in Vitaeris is accounted for under the equity method of accounting because the Company holds common stock of Vitaeris and has significant influence over the operating and financial policies of Vitaeris through its ownership, license arrangement and representation on the board of directors. Therefore, the Company records its share of any loss or income generated by Vitaeris, which is recorded on a three-month lag, within the condensed consolidated statement of operations. The investment is reflected as an investment in unconsolidated entity on the Company's condensed consolidated balance sheet which represents the investment in Vitaeris, net of the Company's portion of any generated loss or income. The Company recorded $0.2 million in net loss with respect to Vitaeris in 2018, which was the remaining balance of the carrying value of the Company's investment in Vitaeris. The Company has no implied or unfunded commitments related to Vitaeris and its maximum exposure to loss is limited to the current carrying value of the investment.

In November 2017, the Company and Vitaeris amended the license agreement for clazakizumab and Vitaeris and its shareholders, including the Company, entered into a strategic collaboration and purchase option agreement (the "option agreement") with a third party, CSL Limited ("CSL"), an Australian entity, to expedite the development of clazakizumab as a therapeutic option for solid organ transplant rejection. Pursuant to the option agreement, CSL will provide research funding to Vitaeris for the development of clazakizumab and CSL received an exclusive option to acquire Vitaeris, subject to certain terms and conditions. Upon the execution of the option agreement, Vitaeris received an upfront payment of $15 million and Vitaeris will also receive future development milestone payments. If CSL exercises its purchase option, it will be required to make to Vitaeris' shareholders, including the Company, an immediate one-time payment and thereafter certain sales-based milestone payments. The Company will continue to be eligible to receive royalties and certain other payments following an acquisition of Vitaeris by CSL. The purchase option created a written call on the Company's shares in Vitaeris, which was determined to have a fair value of $1.7 million as of December 31, 2018 and is considered a derivative under GAAP (see Note 6). As of March 31, 2019, the fair value of the purchase option was $2.6 million. The Company recorded expense of $1.0 million on its March 31, 2019 consolidated statement of operations to recognize the increase in the fair value of the derivative liability. The Company will assess the fair value of the derivative at each reporting period.

6. Fair Value Disclosures

The Company holds financial instruments that are measured at fair value which is determined according to a fair value hierarchy that prioritizes the inputs and assumptions used, and the valuation techniques used to measure fair value. The three levels of the fair value hierarchy are described as follows:

Level 1	Inputs are unadjusted quoted prices in active markets for identical assets or liabilities.
Level 2	Inputs are quoted prices for similar assets and liabilities in active markets or quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets.
Level 3	Inputs are unobservable inputs based on the Company's own assumptions and valuation techniques used to measure assets and liabilities at fair value. The inputs require significant management judgment or estimation.

The Company's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of fair value assets and liabilities and their placement within the fair value hierarchy levels.

The Company established the fair value of its assets and liabilities using the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date and established a fair value hierarchy based on the inputs used to measure fair value.

The following table presents the Company's financial instruments by level within the fair value hierarchy:

	Fair Value Measurement Using			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
As of March 31, 2019				
Assets				
Cash equivalents				
Money market funds	$ 84,890	$ —	$ —	$ 84,890
Short-term investments				
U.S. government agency obligations	—	348,517	—	348,517
Restricted cash				
Money market funds	2,500	—	—	2,500
	$ 87,390	$ 348,517	$ —	$ 435,907
Liabilities				
2025 convertible senior notes	—	274,450	—	274,450
Derivative liability	—	—	2,633	2,633
	$ —	$ 274,450	$ 2,633	$ 277,083
As of December 31, 2018				
Assets				
Cash equivalents				
Money market funds	$ 85,323	$ —	$ —	$ 85,323
Short-term investments				
U.S. government agency obligations	—	319,504	—	319,504
Restricted cash				
Money market funds	5,000	—	—	5,000
	$ 90,323	$ 319,504	$ —	$ 409,827
Liabilities				
2025 convertible senior notes	—	230,538	—	230,538
Derivative liability	—	—	1,658	1,658
	$ —	$ 230,538	$ 1,658	$ 232,196

The Company's U.S. government agency obligations are valued using fair value measurements that are considered to be Level 2. The investment custodian provides the Company with valuations of its securities portfolio. The primary source for the security valuation is Interactive Data Corporation ("IDC"), which evaluates securities based on market data. IDC utilizes evaluated pricing models that vary by asset class and include available trade, bid, and other market information. Generally, the methodology includes broker quotes, proprietary models, vast descriptive terms and conditions databases, as well as extensive quality control programs.

Accounts payable and accrued liabilities are carried at cost, which approximates fair value due to the short-term nature of these financial instruments.

Fair Value of Convertible Notes

The fair value of the Convertible Notes is determined based upon data from readily available pricing sources which utilize market observable inputs and other characteristics for similar types of instruments and is included in Level 2 of the fair value hierarchy. See Note 8 for information about the determination of the carrying value of the Convertible Notes at March 31, 2019.

Fair Value of Derivative Liability

The fair value of the derivative liability related to the purchase option under which CSL could acquire the Company's interest in Vitaeris (see Note 5) was $2.6 million as of March 31, 2019. In accordance with ASC 815, Derivatives and Hedging, the fair value of a derivative is required to be recorded on the balance sheet with any changes in fair value recorded in earnings. The determination of the fair value requires judgment based on significant inputs not observable in the market which represents a Level 3 measurement

within the fair value hierarchy. If factors change and different assumptions are used, the fair value of the derivative liability and related gains or losses could be materially different in the future.

7. Accrued Liabilities

Accrued liabilities consisted of the following for the dates indicated:

	March 31, 2019	December 31, 2018
	(in thousands)	
Loss contingency – vendor contract termination (Note 12)	$ 26,000	$ —
Compensation and benefits	6,606	9,260
Contracted research and development	4,161	5,655
Professional services and other	4,722	1,307
Interest on 2025 convertible senior notes	1,198	2,995
	$ 42,687	$ 19,217

8. 2025 Convertible Senior Notes, Net

On February 1, 2018, the Company issued $250.0 million aggregate principal amount of Convertible Notes in a registered underwritten public offering. In addition, on February 13, 2018, the Company issued an additional $37.5 million principal amount of Convertible Notes pursuant to the exercise of an over-allotment option granted to the underwriters in the offering.

The Convertible Notes are senior unsecured obligations of the Company and bear interest at a rate of 2.5% per annum, payable semi-annually in arrears on February 1 and August 1 of each year, commencing on August 1, 2018. Upon conversion, the Convertible Notes will be convertible into cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. The Convertible Notes will be subject to redemption at the Company's option, on or after February 1, 2022, in whole or in part, if the conditions described below are satisfied. The Convertible Notes will mature on February 1, 2025, unless earlier converted, redeemed or repurchased in accordance with their terms. Subject to satisfaction of certain conditions and during the periods described below, the Convertible Notes may be converted at an initial conversion rate of 49.3827 shares of common stock per $1,000 principal amount of the Convertible Notes (equivalent to an initial conversion price of approximately $20.25 per share of common stock). The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued and unpaid interest. In addition, if certain corporate events occur prior to the maturity date, the Company will increase the conversion rate for a holder of Convertible Notes who elects to convert its Convertible Notes in connection with such a corporate event in certain circumstances.

Holders of the Convertible Notes may convert all or any portion of their notes, in multiples of $1,000 principal amount, at their option at any time prior to the close of business on the business day immediately preceding November 1, 2024 only under the following circumstances:

1. during any calendar quarter commencing after the calendar quarter ending on March 31, 2018 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
2. during the five business day period after any five consecutive trading day period (the "measurement period") in which the "trading price" per $1,000 principal amount of the Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day;
3. if the Company calls any or all of the Convertible Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or
4. upon the occurrence of specified corporate events.

On or after November 1, 2024 and prior to the close of business on the business day immediately preceding February 1, 2025, holders may convert their Convertible Notes at any time.

Prior to February 1, 2022, the Company may not redeem the Convertible Notes. On or after February 1, 2022, the Company may redeem any or all of the Convertible Notes at a redemption price equal to 100% of the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date, if the last reported sale price of the Common Stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the trading day immediately prior to the date of the redemption notice exceeds 130% of the applicable conversion price for the Convertible Notes on

each applicable trading day. If a "make-whole fundamental change" (as defined in the indenture) occurs prior to February 1, 2025, the Company will, in certain circumstances, increase the conversion rate for a holder who elects to convert its Convertible Notes in connection with the make-whole fundamental change.

The Convertible Notes do not contain any financial or operating covenants or any restrictions on the payment of dividends, the issuance of other indebtedness or the issuance or repurchase of securities by the Company. The Convertible Notes indenture contains customary events of default, including that upon certain events of default, 100% of the principal and accrued and unpaid interest on the Convertible Notes will automatically become due and payable.

In accordance with accounting guidance for debt with conversion and other options, the Company separately accounted for the embedded conversion feature of the Convertible Notes by allocating the proceeds between the liability component and the Equity Component, due to the Company's ability to settle the Convertible Notes in cash, common stock or a combination of cash and common stock, at its option. The initial amount of the liability component of $177.6 million was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature and the residual between the proceeds from the issuance of $287.5 million and the fair value of the liability of $177.6 million is allocated to the Equity Component, which was recorded at $109.9 million and recognized as a debt discount. In addition, the Company incurred approximately $9.8 million of debt issuance costs, which primarily consisted of underwriting, legal and other professional fees. The issuance costs were allocated to the liability component and Equity Component proportionally based on the allocation of total proceeds. A total of $3.7 million was allocated to the Equity Component and recorded as a reduction to additional paid-in capital and $6.1 million was allocated to the liability component and is recorded as a reduction of the Convertible Notes in the Company's condensed consolidated balance sheet.

The debt discount and the issuance costs will be amortized to interest expense using the effective interest method over seven years, the expected life of the Convertible Notes as discussed below. The Equity Component is not remeasured as long as it continues to meet the conditions for equity classification. During the three months ended March 31, 2019 and 2018, the Company recorded $3.0 million and $1.7 million, respectively, of interest expense related to the amortization of the debt discount and issuance costs.

While the Convertible Notes are classified on the Company's condensed consolidated balance sheet at March 31, 2019 as long-term, the resulting balance sheet classification of this liability will be monitored at each quarterly reporting date and will be analyzed dependent upon whether the Convertible Notes are convertible or subject to an event triggering potential redemption during the prescribed measurement periods. In the event that the holders of the Convertible Notes have the election to convert the Convertible Notes or the Convertible Notes become redeemable at any time during the prescribed measurement period, the Convertible Notes would then be considered a current obligation and classified as such.

While for GAAP purposes, the Convertible Notes are allocated between the liability component and the Equity Component, for U.S. tax purposes there is no allocation, and a deferred tax liability is recognized related to such difference. Because the Company has a full valuation allowance recorded against net deferred tax assets, there is no net impact on the Company's condensed consolidated balance sheets or condensed consolidated statements of operations as a result of establishing this deferred tax liability.

The outstanding balances of the Convertible Notes as of March 31, 2019 consisted of the following:

	2025 Convertible Senior Notes (in thousands)
Liability component:	
Principal	$ 287,500
Less: unamortized debt discount and issuance costs	(102,354)
Net carrying amount of Liability Component	$ 185,146
Net carrying amount of Equity Component	$ 106,148

The Company determined the expected life of the Convertible Notes was equal to its seven-year term and the effective interest rate on the liability component was 10.6%. As of March 31, 2019, the "if-converted value" did not exceed the remaining principal amount of the Convertible Notes. The fair value of the Convertible Notes is based on data from readily available pricing sources which utilize market observable inputs and other characteristics for similar types of instruments, and, therefore, these Convertible Notes are classified within Level 2 in the fair value hierarchy. The fair value of the Convertible Notes, which differs from their carrying value, is influenced by interest rates, the Company's stock price and stock price volatility. The estimated fair value of the Convertible Notes as of March 31, 2019 was approximately $274.4 million.

The following table sets forth total interest expense recognized related to the Convertible Notes during the three months ended March 31, 2019 and 2018:

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Contractual interest expense	$ 1,796	$ 1,162
Amortization of debt discount and issuance costs	3,042	1,689
Total interest expense	$ 4,838	$ 2,851

Future minimum payments including interest on our long-term debt as of March 31, 2019 were as follows:

Years ended December 31,	Future Minimum Payments
	(in thousands)
2019	$ 3,594
2020	7,188
2021	7,188
2022	7,188
2023	7,188
2024 and thereafter	298,279
Total minimum payments	330,625
Less: interest	(43,125)
Less: unamortized discount and issuance costs	(102,354)
Less: current portion	—
2025 convertible senior notes, net	$ 185,146

9. Convertible Preferred Stock

On January 7, 2018, the Company entered into a Preferred Stock Purchase Agreement (the "Purchase Agreement") with certain institutional and other accredited investors affiliated with or managed by Redmile Group, LLC (the "Buyers"). Under the terms of the Purchase Agreement, on January 12, 2018, the Company sold to the Buyers in a private placement 725,268 shares of Series A-1 convertible preferred stock at $137.88 per share for net proceeds of approximately $97.7 million, after deducting fees and applicable expenses of $2.3 million. The Buyers hold more than 5% of our capital stock and therefore are considered a related party of the Company. The Purchase Agreement also provided the Company with an option to sell up to $150 million of convertible preferred stock in aggregate beginning after the 90-day period following the date of the initial purchase of the convertible preferred stock. This option was classified as an asset and was determined to have immaterial fair value at inception and subsequently. The Company's right to sell the additional $150 million of convertible preferred stock terminated upon closing of the Convertible Notes on February 1, 2018 (see Note 8) and no additional shares will be issued under the Purchase Agreement, except in the event of warrants issued and exercised as a result of a deemed liquidation event, as described further below. The terms and conditions of the convertible preferred stock are governed by the Certificate of Designation of Preferences, Rights and Limitations (the "Certificate of Designation").

Liquidation Preference

In the event of any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary, occurs within 24 months of the date of the Purchase Agreement, after satisfaction of all liabilities and obligations to creditors of the Company and before any distribution to holders of the Company's common stock, the holders of each share of convertible preferred stock shall be entitled to receive the amount of $137.88 per share, plus all accrued but unpaid dividends. If, upon the occurrence of such event, the proceeds distributed among the holders of the convertible preferred stock are insufficient to make payment in full to all holders, then the entire proceeds legally available for distribution to the holders of the convertible preferred stock shall be distributed ratably in proportion to the full amounts to which the holders would otherwise be respectively entitled. A liquidation shall be deemed to include the occurrence of either (i) the Company merges into or consolidates with any other entity, or any entity merges into or consolidates with the Company and, after giving effect to such transaction, the stockholders of the Company immediately prior to such transaction own less than 50% of the aggregate voting power of the Company or the successor entity of such transaction or (ii) the Company sells, leases, licenses or transfers all or substantially all of its assets to another person or entity and the stockholders of the Company immediately prior to such transaction own less than 50% of the aggregate voting power of the acquiring entity immediately after the transaction (each a "Deemed Liquidation").

Dividends

The holders of the convertible preferred stock are entitled to receive cumulative dividends at a rate of 5% per annum payable semi-annually in arrears on June 30 and December 31 of each year. In the three months ended March 31, 2019, the Company accrued an aggregate of $1.3 million in dividends on convertible preferred stock, or $1.72 per weighted average share of convertible preferred stock. The dividends are payable in additional shares of convertible preferred stock and/or cash at the Company's option.

Conversion

Each share of convertible preferred stock is convertible, at any time and from time to time and after the issuance date, at the holders' option, into shares of common stock in a one-for-ten basis.

Voting Rights

Except specifically required by the Certificate of Designation or by the provisions of the Delaware General Corporation Law, the holders of the convertible preferred stock have no voting rights.

Warrants

In the event of a Deemed Liquidation that occurs within 24 months of the date of the Purchase Agreement, the Company will issue to the Buyers a warrant to purchase an aggregate of 75,000 shares of convertible preferred stock at a purchase price per share equal to the initial purchase price of $137.88. The number of shares and exercise price are each subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction.

Pursuant to applicable accounting standards, the warrant was considered a freestanding financial instrument, which is a financial liability and requires initial and subsequent measurements at fair value. The warrant was determined to have immaterial fair value initially and subsequently at March 31, 2019.

In accordance with ASC 480-10-S99, the convertible preferred stock has been recorded as temporary equity on the Company's condensed consolidated balance sheet because the convertible preferred stock is redeemable for cash or other assets of the Company upon Deemed Liquidation events that are not within the control of the Company. The net carrying amount of the convertible preferred stock is not currently accreted to a redemption value because the preferred stock is not currently redeemable or probable of becoming redeemable in the future.

In accordance with ASC 470-20, the Company recognized a beneficial conversion feature representing a conversion right with an effective conversion price less than the market price of the underlying stock at the commitment date of January 12, 2018. The beneficial conversion feature of $29.5 million was recognized by allocating the intrinsic value of the conversion option, which is the number of shares of common stock available upon conversion multiplied by the difference between the effective conversion price per share and the fair value of common stock per share on the commitment date, to additional paid-in capital. On the last trading day prior to the entering into the Purchase Agreement, the closing price of the Company's common stock was $12.95 per share. The transaction closed on January 12, 2018, at which time last closing price of the Company's common stock was $17.85 per share, which is the value used in calculating the intrinsic value of the beneficial conversion feature. Since the convertible preferred stock is currently convertible at holder's option, the Company immediately accreted the full amount of discount created by allocation of proceeds to the beneficial conversion feature and recognized as a deemed dividend to the convertible preferred stockholders.

10. Leases

Under two real estate operating lease agreements, the Company leases office space in three adjacent buildings in Bothell, Washington, for its research and development and administrative activities under leases that will expire on July 31, 2023. The leases include an option to extend the lease for an additional three years. None of these optional periods have been included in the determination of the lease term as the Company is not reasonably certain that it would exercise any such options. The lease agreements include escalating rental payments and common area maintenance charges. The lease agreements do not contain any material residual value guarantees or material restrictive covenants. Upon adoption of the new lease standard, discount rates used for existing leases were established at January 1, 2019.

Supplemental balance sheet information related to leases was as follows:

	March 31, 2019 (in thousands)
Assets	
Long-term	
Right of use assets	$ 4,693
Liabilities	
Current operating lease liabilities	$ 946
Long-term operating lease liabilities	4,321
Total operating lease liabilities	$ 5,267

	March 31, 2019
Weighted-average remaining lease term (years)	4.3
Weighted-average discount rate	10.3%

For the three months ended March 31, 2019, the Company recorded $0.3 million of operating lease cost, $0.1 million of variable lease cost, and $21,000 of short-term lease cost. The lease expense for the three months ended March 31, 2018 is $0.3 million. Cash paid for amounts included in the measurement of lease liabilities for the three months ended March 31, 2019 was $0.2 million.

The table below reconciles the undiscounted cash flows to the operating lease liabilities recorded on the consolidated balance sheet as of March 31, 2019.

Years ended December 31,	(in thousands)
2019 (excluding three months ended March 31, 2019)	$ 1,079
2020	1,477
2021	1,521
2022	1,568
2023	938
Total minimum payments	6,583
Less: amount of lease payments representing interest	(1,316)
Present value of future lease payments	5,267
Less: current lease liabilities	(946)
Noncurrent lease liabilities	$ 4,321

Future aggregate minimum payments under noncancelable operating leases are as follows:

Years ended December 31,	(in thousands)
2019	$ 1,434
2020	1,477
2021	1,521
2022	1,568
2023	938
Total minimum lease payments	$ 6,938

11. Teva License Agreement

On January 5, 2018, the Company entered into a Settlement and License Agreement with Teva Pharmaceuticals International GmbH ("Teva GmbH"). Under the terms of the Settlement and License Agreement, the Company received a non-exclusive license to Teva's calcitonin gene-related peptide ("CGRP") patent portfolio for the development, manufacturing and commercialization of eptinezumab in the U.S. and worldwide, excluding Japan and Korea. While the agreement does not provide the Company with a license for Japan and Korea, the Company believes it has freedom to develop, manufacture and commercialize eptinezumab in these countries.

Upon the execution of the agreement, the Company made an immediate one-time, non-refundable payment of $25 million, which was included in research and development expense in the Company's condensed consolidated statement of operations. In addition, a second one-time, non-refundable payment of $25 million is payable upon the approval of a Biologics License Application ("BLA") for eptinezumab with the U.S. Food and Drug Administration ("FDA") or of an earlier equivalent filing with a regulatory authority elsewhere in the license territory in which Teva GmbH licensed patents exist. The Company is also obligated to pay $75 million at each of two sales-related milestones (at $1 billion and $2 billion in annual sales) and to provide certain royalty payments on net sales at rates from 5% to 7% following the commercial launch of eptinezumab.

12. Loss Contingency

In February 2019, the Company terminated for breach a contract manufacturing agreement for the delivery of future services. The vendor has disputed the termination and in April 2019 filed for arbitration. Accounting Standards Codification 450 (Contingencies) requires the Company to evaluate both the probability of a loss and whether an amount of loss can be reasonably estimated. While the Company believes it is not obligated to make any payments for future services under the agreement, including any portion of the amount accrued, the ultimate resolution of the matter could result in a loss of up to $26 million in excess of the amount accrued.

13. Subsequent Events

Subsequent to March 31, 2019, the FDA accepted the BLA for eptinezumab for review. As a result, a portion of the Company's performance-based restricted stock unit awards under its long-term incentive plan vested and certain performance-based stock options vested. The estimated stock-based compensation expense recognized by the Company is approximately $4.7 million.

Item 2. **MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

This section should be read in conjunction with our unaudited condensed consolidated financial statements and related notes included in Part I, Item 1 of this report and our audited consolidated financial statements and related notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2018 included in our Annual Report on Form 10-K, or 2018 Form 10-K.

Forward-Looking Statements

This discussion contains certain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements are identified by words such as "believe," "will," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "could," "potentially" or the negative of these terms or similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in this report in Part II, Item 1A — "Risk Factors," and elsewhere in this report. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. These statements, like all statements in this report, speak only as of their date, and we undertake no obligation to update or revise these statements in light of future developments.

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. On April 22, 2019, we announced that the FDA accepted the BLA for review. The FDA has set the Prescription Drug User Fee Act (PDUFA) target action date of February 21, 2020. If the FDA grants approval of eptinezumab, Alder anticipates a commercial launch in the first quarter of 2020.

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. 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.

Our deliberate approach to engineering and developing eptinezumab is designed to provide a unique clinical profile that, after a single administration via an infusion procedure, provides rapid, effective and sustained migraine prevention. We believe that this clinical profile, as supported by data from our clinical trials, will present a potentially compelling value proposition for patients, physicians, payors and our stakeholders.

Eptinezumab is the only potent and selective anti-CGRP monoclonal antibody in clinical development for migraine prevention delivered by quarterly infusion. We believe that eptinezumab's design, coupled with the infusion mode of administration, provides the following key benefits:

- High specificity and strong binding for rapid and sustained suppression of CGRP biology;
- Allows for the total dose to be immediately active to inhibit CGRP with 100% bioavailability; and
- Supervised administration by quarterly infusion has the potential to promote patient adherence while maximizing product control and consistency of delivery.

In PROMISE 1 and PROMISE 2, eptinezumab demonstrated the following characteristics:

1. Rapid: Onset to prevention achieved on the first day post infusion
2. Effective: Significant reductions in migraine days for months 1 through 3 and high ≥50%, ≥75% and 100% responder rates attained within 1 month following a single administration
3. Sustained: Migraine free days sustained for 3 months following a single administration
4. Safety and tolerability profile similar to placebo and consistent with earlier eptinezumab studies

Assuming eptinezumab administered via infusion is approved by the FDA, we plan to focus our initial commercialization efforts on procedure oriented headache specialists in the United States with a specialty sales force sizing of approximately 75 to 100. We believe that these procedure oriented headache specialists comprise neurologists, pain specialists and primary care physicians and treat the highest proportion of the five million to seven million highly impacted migraine patients described above. We estimate this group of procedure oriented headache specialists to number approximately 3,000 physicians. Our market research suggests that eptinezumab is well-positioned for adoption by physicians in this group due to eptinezumab's clinical profile and mode of delivery via infusion. They also value patient adherence benefits associated with supervised administration by quarterly infusion and they have an infrastructure in place for patient flow, supply and reimbursement. We estimate that 94% of these physicians have previously prescribed an infusion therapy for migraine or other conditions within practice, hospital, or free-standing infusion centers.

We are committed to commercializing eptinezumab in the United States as a migraine prevention therapy, and are focused on capturing the full commercial value of eptinezumab globally. We recognize the potential for strategic partnerships or other arrangements that bring additional capabilities and infrastructure, as well as value to the program. Thus, as a key component of our commercial readiness activities, we are actively reviewing options for partnerships or arrangements that will allow us to realize the commercial potential of eptinezumab outside of the United States. We will only pursue partnerships or arrangements that we believe have the potential to deliver the greatest value to the eptinezumab program and our stakeholders.

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 investigational new drug (IND) application with the FDA.

In May 2016, we licensed the exclusive worldwide rights for clazakizumab, another product candidate internally developed by Alder, to Vitaeris, Inc., or Vitaeris, based in Vancouver, British Columbia. Clazakizumab was designed to block the pro-inflammatory cytokine IL-6. In November 2017 Alder and Vitaeris amended the license agreement for clazakizumab and Vitaeris and its shareholders, including Alder, entered into a strategic collaboration and purchase option agreement with a third party, CSL Limited (CSL), an Australian entity, to expedite the development of clazakizumab as a therapeutic option for solid organ transplant rejection. Prior to the license to Vitaeris, clazakizumab completed two positive Phase 2b clinical trials establishing proof-of-concept in patients with rheumatoid arthritis.

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 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 ≥50%, ≥75%, 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.

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 □ 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 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).

Financial Operations Overview

Revenues

We did not recognize any revenue for the three months ended March 31, 2019 and 2018. We have not generated any revenues from the sale of products. In the future, we may generate revenues from product sales and from collaboration agreements in the form of license fees, milestone payments, reimbursements for clinical supply and development costs and royalties on product sales. We expect that any revenues we generate will fluctuate from quarter to quarter as a result of the uncertain timing and amount of such payments and sales.

Research and Development Expenses

Research and development expenses represent costs incurred by us for the discovery and development of our product candidates. The following items are included in research and development expenses:

- external costs under agreements with clinical research organizations, or CROs, contract manufacturing organizations, or CMOs, and other significant third-party vendors or consultants used to perform preclinical, clinical, medical affairs and manufacturing activities;
- internal costs including employee-related costs such as salaries, benefits, stock-based compensation expense, travel, laboratory consumables and services for our research and development personnel; and
- allocated facilities, depreciation, and other expenses, which include rent and maintenance of facilities, information technology services and other infrastructure expenses.

We use our employee and infrastructure resources across multiple research and development programs directed toward evaluating our monoclonal antibodies for selecting product candidates. We manage certain activities such as preclinical toxicology studies, clinical trial operations and manufacture of product candidates through third-party CROs, CMOs or other third-party vendors. We track our significant external costs by each product candidate. We also track our human resource efforts on certain programs for purposes of billing our collaborators for time incurred at agreed upon rates. We do not, however, assign or allocate to individual product candidates or development programs our internal costs and we group these internal research and development activities into three categories:

Category	Description
Preclinical discovery and development	Research and development expenses incurred in activities substantially in support of discovery of new targets through the selection of a single product candidate. These activities encompass the discovery and translational medicine functions, including pharmacokinetic and drug metabolism preclinical studies, toxicology and early strain and assay development activities.
Pharmaceutical operations	Research and development expenses incurred related to manufacturing preclinical study and clinical trial materials, including scale-up process development and quality control activities.
Clinical development	Research and development expenses incurred related to Phase 1, Phase 2 and Phase 3 clinical trials, including regulatory and medical affairs activities.

We plan to increase our research and development expenses for the foreseeable future as we continue the development of eptinezumab, ramp up our manufacturing activities in preparation for commercial drug supply, continue to develop our medical affairs capability, continue to prepare for regulatory submissions and advance the ALD1910 program. The timing and amount of research and development expenses incurred will depend largely upon the outcomes of current and future clinical trials for our product candidates

as well as the related regulatory requirements, manufacturing costs and any costs associated with the advancement of our preclinical programs. We cannot determine with certainty the duration and completion costs of the current or future clinical trials of our product candidates. The duration, costs and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing, as well as any additional, clinical trials and other research and development activities;
- future clinical trial results;
- potential changes in government regulation;
- potential changes in the reimbursement landscape; and
- the timing and receipt of any regulatory approvals.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related benefits, including stock-based compensation, related to our executive, business development, intellectual property, finance, human resources, marketing and support functions. Other general and administrative expenses include allocated facility-related costs not otherwise included in research and development expenses, travel expenses and professional fees for marketing, auditing, tax and legal services, including intellectual property related legal services. We expect our general and administrative costs will continue to rise in 2019 as we increase our headcount and expand our support staffing, build commercial infrastructure including information technology systems and personnel support for the commercial organization, and other activities to support our growth as we prepare for a potential commercial launch of eptinezumab.

Other Income (Expense)

Other income (expense) consists primarily of interest income, interest expense on the 2.5% Convertible Senior Notes due 2025, (the "Convertible Notes"), and the change in fair value of the derivative liability. We anticipate other expenses to increase due to interest expense on the Convertible Notes.

Results of Operations

Comparison of the Three Months Ended March 31, 2019 and 2018

Revenue

We did not recognize any revenue for the three months ended March 31, 2019 and 2018.

Research and Development Expenses

Research and development expenses incurred in the three months ended March 31, 2019 and 2018 were as follows:

	Three Months Ended March 31,		
	2019	2018	% change
	(dollars in thousands)		
External costs:			
Eptinezumab	$ 46,056	$ 53,117	(13%)
ALD1910	1,016	3,367	(70%)
Unallocated internal costs:			
Preclinical discovery and development	5,773	4,876	18%
Pharmaceutical operations	7,772	6,703	16%
Clinical development	8,972	5,985	50%
Total research and development expenses	$ 69,589	$ 74,048	(6%)

Research and development expenses decreased by $4.5 million, or 6%, for the three months ended March 31, 2019 compared to the same period in 2018. During the three months ended March 31, 2019, external costs incurred for eptinezumab decreased by $7.1

million, or 13%. External costs for eptinezumab decreased primarily due to the $25 million initial payment to Teva GmbH under our settlement and license agreement in January 2018 and a decrease in clinical trial expenses by $14.4 million due to the completion of patient treatments for several of our clinical trials, offset by an increase of $32.1 million in manufacturing costs. We expect our manufacturing costs to increase in subsequent quarters in preparation for commercial supply. Unallocated internal costs increased by $5.0 million primarily due to an increase of $4.5 million in professional fees and compensation to support our commercial development.

General and Administrative Expenses

General and administrative expenses increased by $32.8 million, or 282%, for the three months ended March 31, 2019 compared to the same period of 2018. The increase was primarily attributable to a provision for a loss contingency of $26 million, as discussed in Notes 7 and 12 to our condensed consolidated financial statements, and an increase in professional and general services fees of $6.7 million primarily related to activities to support commercial readiness activities.

Interest Income

The increase in interest income for the three months ended March 31, 2019, was primarily due to higher average balances of cash, cash equivalents, investments and restricted cash compared to the same period of 2018.

Interest Expense

Interest expense was $4.8 million and $2.9 million for three months ended March 31, 2019 and 2018, respectively, related to the Convertible Notes and the associated accretion of debt discount and issuance costs.

Change in Fair Value of Derivative Liability

The derivative liability is related to the purchase option agreement which grants CSL an option, under certain conditions, to purchase our interest in Vitaeris. We recognized $1.0 million in the change in fair value of the derivative liability for the three months ended March 31, 2019. There was no change in fair value of the derivative liability in the three months ended March 31, 2018.

Equity in Net Loss of Unconsolidated Entity

The equity in net loss of unconsolidated entity relates to our investment in Vitaeris. We record our share of any loss or income generated by Vitaeris under the equity method of accounting on a three-month lag. Beginning in the first quarter of 2018, our share of Vitaeris' net losses exceeded the carrying value of our investment, and we suspended recognizing additional losses. We did not recognize any equity in net loss for the three months ended March 31, 2019. We recognized $0.2 million in equity in net loss for the three months ended March 31, 2018.

Deemed Dividend on Convertible Preferred Stock Attributable to Accretion of Beneficial Conversion Feature

In January 2018, we completed a private placement of 725,268 shares of convertible preferred stock with certain institutional and other accredited investors. The deemed dividend of $29.5 million in the three months ended March 31, 2018 relates to the accretion of the beneficial conversion feature, which is the difference between the effective conversion price and the fair value of our common stock, calculated by using the closing trading price on the closing date of the offering, multiplied by the number of shares of common stock into which the preferred stock was initially convertible.

Dividends on Convertible Preferred Stock

Holders of the convertible preferred stock are entitled to receive cumulative dividends at a rate of 5% per annum payable semi-annually in arrears on June 30 and December 31 of each year, payable in additional shares of convertible preferred stock and/or cash at our option and as permitted by the Certificate of Designation of Preferences, Rights and Limitations.

We recorded $1.3 million and $1.1 million in dividends on preferred stock in the three months ended March 31, 2019 and 2018, respectively.

Liquidity and Capital Resources

Due to our significant research and development expenditures, we have generated significant operating losses from inception and we expect to incur significant operating losses in the future. We have funded our operations primarily through sales of our equity securities, debt securities and payments from our former collaboration partners.

As of March 31, 2019, we had an accumulated deficit of $1.1 billion and cash, cash equivalents and investments of $474.6 million, consisting of cash, money market funds and U.S. government agency obligations, and restricted cash of $23.9 million. Cash in

excess of immediate requirements is invested with a view toward liquidity and capital preservation, and we seek to minimize the potential effects of concentration and degrees of risk.

We are focusing our resources and development efforts principally on eptinezumab in order to maximize its therapeutic and commercial potential. We believe that our available cash, cash equivalents, investments and restricted cash as of March 31, 2019 will be sufficient to meet our projected operating requirements through the anticipated launch of eptinezumab and into the latter part of 2020. 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. 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. We expect to finance future cash needs through equity financings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements, but there are no assurances that we will be able to raise sufficient amounts of funding in the future on acceptable terms, or at all. 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. As of the date of this filing, we have not raised any funds through the ATM program. 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. Our future funding requirements will depend on many factors, as we:

- continue to prioritize the advancing clinical development of eptinezumab for the prevention of migraine;
- leverage the commercial potential of eptinezumab by commercializing it for the prevention of migraine in the United States, if approved by the FDA;
- advance the ALD1910 program;
- establish a sales, marketing and distribution infrastructure and scale-up manufacturing capabilities to commercialize eptinezumab or any of our future product candidates if they receive regulatory approval;
- enhance operational, financial and information management systems and hire additional personnel, including personnel to support development of our product candidates and, if a product candidate is approved, our commercialization efforts.
- leverage our technology platform to discover future product candidates for areas of unmet need; and
- build a leading biopharmaceutical company to transform current treatment paradigms.

There are no assurances that we will be able to raise sufficient amounts of funding in the future on acceptable terms, or at all. The sale of additional equity would result in dilution to our stockholders. The incurrence of debt financings would result in debt service obligations and the instruments governing such debt could provide for operating and financing covenants that would restrict our operations. We may consider partnering one or more of our product candidates for further clinical development and commercialization. To the extent that we raise additional capital through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us.

Historical Cash Flow Trends

The following table summarizes our cash flows for the periods indicated:

	Three Months Ended March 31,	
	2019	2018
	(in thousands)	
Net cash used in operating activities	$ (74,576)	$ (74,095)
Net cash used in investing activities	(28,035)	(176,231)
Net cash provided by financing activities	159,737	375,386

Cash Used in Operating Activities

Net cash used in operating activities includes net loss, adjusted for non-cash charges and changes in the components of working capital. Net cash used in operating activities was $74.6 million in the three months ended March 31, 2019, compared to $74.1 million during the same period in 2018. Although there was an increase of $30.9 million in net loss in the 2019 period compared to the same period of 2018, this was offset by a decrease in the change in accounts payable and accrued liabilities of $28.4 million. This was also offset by other non-cash adjustments including an increase in the accretion of discount on convertible notes of $1.4 million and a change in the fair value of derivative liability of $1.0 million.

Cash Used in Investing Activities

Net cash used in investing activities was $28.0 million in the three months ended March 31, 2019 compared to net cash used in investing activities of $176.2 million during the same period in 2018. The decrease of $148.2 million in net cash used by investing activities was primarily due to lower purchases of investments offset by lower proceeds of maturities and sales of investments. Purchases of equipment increased by $0.1 million in the three months ended March 31, 2019 compared to the same period in 2018.

Cash Provided by Financing Activities

Net cash provided by financing activities was $159.7 million in the three months ended March 31, 2019 was primarily due to the March 2019 public offering in which we received approximately $159.3 million net of underwriting discounts and commissions, placement agent fees, and offering costs and $0.4 million from the exercise of stock options.

Net cash provided by financing activities of $375.4 million in the three months ended March 31, 2018 was due to the January 2018 issuance of convertible preferred stock and the February 2018 issuance of Convertible Notes in which we received proceeds of $97.7 million and $277.7 million, respectively, net of offering costs.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet arrangements as of March 31, 2019.

Contractual Obligations

Our contractual obligations as of March 31, 2019 were as follows:

	Total	For the years ended March 31, 2020	2021	2022	2023	2024	Thereafter
				(in thousands)			
Convertible debt obligation[1]	$ 330,625	$ 7,188	$ 7,188	$ 7,188	$ 7,188	$ 7,188	$ 294,685
Operating leases[2]	6,472	1,335	1,488	1,532	1,579	538	—
License agreements[2]	655	60	60	60	60	60	355
Purchase obligations[3]	4,017	4,017	—	—	—	—	—
Contract manufacturing obligations[4]	35,048	35,005	26	13	4	—	—
Total contractual obligations	$ 376,817	$ 47,605	$ 8,762	$ 8,793	$ 8,831	$ 7,786	$ 295,040

(1) Represents future minimum payments of interest and principal under the Convertible Notes.

(2) Represents future minimum lease payments under our non-cancelable facility leases. The minimum lease payments above do not include any related common area maintenance charges or real estate taxes. $5.3 million of these future payments are recorded as a lease liability in our condensed consolidated balance sheets as of March 31, 2019.

(3) Some of our licensing agreements obligate us to pay a royalty on net sales of products utilizing licensed technology. Such royalties are dependent on future product sales and are not provided for in the table above as they are not estimable.

(4) We enter into agreements in the normal course of business for commercial readiness activities, research and development and other services for operating purposes, which are cancelable at any time by us, generally upon 30 days prior written notice. These payments are not included in this table of contractual obligations.

(5) Represents contractual obligations related to manufacturing our product candidates for use in our clinical trials or commercial use, if approved. We expect to incur additional purchase obligations relating to future purchase orders under such agreements.

Certain contract manufacturing obligations may be cancelled three to 12 months prior to the commencement date of the manufacturing campaign. Although the payment of the cancellation fee will generally be due at the scheduled commencement date, we may record the manufacturing expense and related obligation as an accrued liability at the time of cancellation.

Under our settlement and license agreement with Teva, we are obligated to make a payment of $25 million upon the approval of a BLA for eptinezumab with the FDA or of an earlier equivalent filing with a regulatory authority elsewhere in the license territory in which any Teva GmbH licensed patents exist, to pay $75 million at each of two sales-related milestones (at $1 billion and $2 billion in annual sales) and to provide certain royalty payments on net sales at rates from 5% to 7% following the commercial launch of eptinezumab.

The holders of our convertible preferred stock are entitled to receive cumulative dividends at a rate of 5% per annum payable semi-annually in arrears on June 30 and December 31 of each year. We currently anticipate settling future dividends by the issuance of additional shares of convertible preferred stock.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States general accepted accounting principles, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

On January 1, 2019, we adopted ASU-2016-02, Leases and ASU 2018-07, Compensation-Stock Compensation (Topic 718) – Improvements to Nonemployee Share-Based Payment Accounting. For a discussion of our accounting policies, please see Note 2 to our condensed consolidated financial statements, which are included in this report. There have been no other significant and material changes in our critical accounting policies during the three months ended March 31, 2019, as compared to those disclosed in "Management's Discussion and Analysis of Financial Conditions and Results of Operations - Critical Accounting Policies and Significant Judgments and Estimates" in our 2018 Form 10-K. We believe that the accounting policies discussed in our 2018 Form 10-K are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements, please see Note 2 to our condensed consolidated financial statements, which are included in this report.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

The primary objective of our investment activities is to preserve our capital to fund our operations. We also seek to maximize income from our investments without assuming significant risk. To achieve our objectives, we maintain a portfolio of cash equivalents and investments in a variety of securities of high credit quality. As of March 31, 2019, we had cash, cash equivalents, investments and restricted cash of $498.5 million consisting of cash, money market funds, and U.S. government agency obligations. A portion of our investments may be subject to interest rate risk and could fall in value if market interest rates increase. We have estimated the effect on our investment portfolio of a hypothetical increase in interest rates by one percent to be a reduction of $1.8 million in the fair value of our investments as of March 31, 2019. In addition, a hypothetical decrease of 10% in the effective yield of our investments would reduce our expected investment income by approximately $0.9 million over the next twelve months based on our investment balance at March 31, 2019.

Foreign Currency Risk

We contract for the conduct of certain clinical development activities with vendors in Australia and we contract for the conduct of manufacturing activities in the United Kingdom, Switzerland and Austria. Our foreign subsidiaries in Australia and Ireland also maintain bank accounts in their local currencies which are Australian dollars and Euros. We are subject to exposure due to fluctuations in foreign exchange rates in connection with these currencies. We manage a portion of these cash flow exposures through our bank accounts in which we hold foreign currencies. Our holdings in foreign currencies are marked to market at the end of each period and any net change is recorded as gains or losses in the condensed consolidated statements of operations. As of March 31, 2019, we held the U.S. dollar equivalent of approximately $1.2 million in foreign currencies. A hypothetical 10% change in the exchange rate between the U.S. dollar and Swiss francs, Australian dollars, and Euros from the March 31, 2019 rate would have increased / decreased our total unrealized foreign currency loss on our holdings by approximately $0.1 million. We generally transfer funds to our Australian subsidiary and our Irish subsidiary to fund operating needs within 30 days of disbursement and these cash balances are also subject to exposure due to fluctuations in exchange rates. We recorded net foreign currency gains of $0.1 million in both of the three month periods ended March 31, 2019 and 2018.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures. Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer have evaluated our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) prior to the filing of this quarterly report. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that, as of the end of the period covered by this quarterly report, our disclosure controls and procedures were, in design and operation, effective.

Changes in internal control over financial reporting. There were no changes in our internal control over financial reporting during the quarter ended March 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PART II. – OTHER INFORMATION

Item 1. Legal Proceedings

In February 2019, we terminated a Development and Manufacturing Services Agreement, dated February 26, 2016, as amended (DMSA), with Lonza Ltd. (Lonza), based on material breaches of that agreement by Lonza. On April 19, 2019, Lonza filed a Statement of Claim and Demand for Arbitration with the American Arbitration Association in New York, NY, in which Lonza asserts claims for breach of contract and declaratory judgment arising from the termination. Lonza disputes the material breaches asserted by us, denies that we are entitled to terminate the DMSA without further payment, and seeks monetary damages representing Lonza's calculation of the fee due upon termination for convenience. See Note 7 – Accrued Liabilities and Note 12 – Loss Contingency of our condensed consolidated financial statements regarding our accounting treatment and estimated range of losses. We have not yet responded to Lonza's arbitration demand, but believe Lonza's claims are without merit and intend to deny any liability and vigorously defend against Lonza's claims. We further intend to assert counterclaims arising from Lonza's breach of the DMSA.

Other than as set forth above, there were no material changes with respect to the matters disclosed in "Item 3. Legal Proceedings" in our 2018 Form 10-K during the period covered by this report.

Item 1A. Risk Factors

You should carefully consider the following risk factors, in addition to the other information contained in this report on Form 10-Q, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes. If any of the events described in the following risk factors and the risks described elsewhere in this report occurs, our business, operating results and financial condition could be seriously harmed. This report on Form 10-Q also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report.

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 three months ended March 31, 2019, our net loss applicable to common stockholders was $119.2 million, and as of March 31, 2019, we had an accumulated deficit of $1.1 billion.

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. 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.

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.

As of March 31, 2019, we had $474.6 million in cash, cash equivalents and investments, and $23.9 million in restricted cash. We believe that our available cash, cash equivalents, investments and restricted cash as of March 31, 2019 will be sufficient to meet our projected operating requirements through the anticipated launch of eptinezumab and into the latter part of 2020. 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, 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 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 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.

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.

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 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 the TCJA, which 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 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 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;
- 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, and on April 22, 2019, we announced that the FDA accepted the BLA for review. The FDA has set the Prescription Drug User Fee Act (PDUFA) target action date of February 21, 2020. 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 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 of 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;
- 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 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 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 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 drugs for commercial sale, if approved, and 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 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;
- 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.

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;
- 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 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;
- 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;
- 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 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.

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.

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.

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.

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 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 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 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.

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 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.

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 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 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 "Item 1. Legal Proceedings" of this report, in February 2019, we terminated the DMSA with Lonza, based on material breaches of that agreement by Lonza. We believe we are not obligated to make any payments for future services under the agreement, including any portion of the amount accrued. We have accrued $26 million for the termination-related costs, although Lonza has asserted the remaining amount owed under the contract is significantly higher than our estimated amount. See Note 7 – Accrued Liabilities and Note 12 – Loss Contingency of our condensed consolidated financial statements regarding our accounting treatment and estimated range of losses. 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;
- 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;
- 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 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 March 31, 2019, we had options and restricted stock awards outstanding that, if fully exercised or vested, as applicable, would result in the issuance of 13,616,218 shares of common stock. As of March 31, 2019, there were also 1,000,730 shares of common stock reserved for issuance under our 2014 Equity Incentive Plan and 2,391,761 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 March 31, 2019, there were 1,090,000 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 March 31, 2019, 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 our March 2019 private placement of common stock, we entered into a registration rights agreement with Redmile. Under the registration rights agreement, we agreed to 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 such 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.

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.

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 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."

Item 6. Exhibits

Exhibit Number	Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Alder BioPharmaceuticals, Inc.	8-K	001-36431	3.1	May 13, 2014	
3.2	Amended and Restated Bylaws of Alder BioPharmaceuticals, Inc.	S-1	333-194672	3.5	April 25, 2014	
3.3	Certificate of Designation of Preferences, Rights and Limitations of Class A-1 Convertible Preferred Stock of Alder BioPharmaceuticals, dated January 12, 2018.	8-K	001-36431	3.1	January 19, 2018	
4.1	Amended and Restated Investors' Rights Agreement, dated as of April 16, 2012, by and among Alder BioPharmaceuticals, Inc. and certain of its stockholders.	S-1	333-194672	4.1	March 19, 2014	
4.2	Amendment No. 1 to Amended and Restated Investors' Rights Agreement, dated as of April 7, 2014, by and among Alder BioPharmaceuticals, Inc. and certain of its stockholders.	S-1	333-194672	4.2	April 25, 2014	
4.3	Form of Common Stock Certificate.	S-1	333-201201	4.3	December 22, 2014	
4.4	Registration Rights Agreement by and between Alder BioPharmaceuticals, Inc. and the buyers listed on the Schedule of Buyers thereto, dated January 12, 2018.	8-K	001-36431	4.1	January 19, 2018	
4.5	Base Indenture, dated February 1, 2018, between the Company and U.S. Bank National Association, as Trustee.	8-K	001-36431	4.1	February 1, 2018	
4.6	First Supplemental Indenture, dated February 1, 2018, between the Company and U.S. Bank National Association, as Trustee (including the form of 2.50% convertible senior notes due 2025).	8-K	001-36431	4.2	February 1, 2018	
4.7	Registration Rights Agreement by and between Alder BioPharmaceuticals, Inc. and the buyers listed on the Schedule of Buyers thereto, dated March 4, 2019.	8-K	001-36431	4.1	March 5, 2019	
10.1	Common Stock Purchase Agreement, dated February 26, 2019, by and between Alder BioPharmaceuticals, Inc., Redmile Group, LLC and certain institutional and other accredited investors affiliated with or managed by Redmile Group, LLC.	8-K	001-36431	10.1	March 1, 2019	
10.2	Distribution Agreement, dated January 4, 2019, by and between Alder BioPharmaceuticals, Inc. and J.P. Morgan Securities LLC	8-K	001-36431	10.1	January 4, 2019	
10.3+	Amendment to Offer Letter between Alder BioPharmaceuticals, Inc. and Carlos E. Campoy dated February 7, 2019.	10-K	001-36431	10.31	February 25, 2019	
10.4+	Transition and Consulting Agreement between Alder BioPharmaceuticals, Inc. and John A. Latham, Ph.D. dated March 28, 2019.					X
10.5	Compensation Information for Non-Employee Directors.					X
10.6†	Amendment No. 5 to the Contract Manufacturing Agreement between Alder BioPharmaceuticals, Inc. and Sandoz GmbH, effective January 1, 2019.	10-K	001-36431	10.44	February 25, 2019	
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a).					X
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a).					X
32.1*	Certifications of Principal Executive Officer and Principal Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X

Exhibit Number	Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
101.INS**	XBRL Instance Document.					X
101.SCH**	XBRL Taxonomy Extension Schema Document.					X
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document.					X

* The Certifications attached as Exhibits 32.1 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-Q, irrespective of any general incorporation language contained in such filing.

** Attached as Exhibit 101 to this Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 formatted in XBRL (Extensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations, (iii) Condensed Consolidated Statements of Comprehensive Income (Loss), (iv) Condensed Consolidated Statements of Cash Flows, and (v) Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags.

\+ Indicates a management contract or compensatory plan.

† Pursuant to a request for confidential treatment, portions of this exhibit have been redacted from the publicly filed document and have been furnished separately to the Securities and Exchange Commission as required by Rule 24b-2 under the Securities Exchange Act of 1934.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Alder BioPharmaceuticals, Inc.

Date: May 2, 2019

By: /s/ Robert W. Azelby
Robert W. Azelby
President and Chief Executive Officer
(Principal Executive Officer)

Alder BioPharmaceuticals, Inc.

Date: May 2, 2019

By: /s/ Carlos E. Campoy
Carlos E. Campoy
Chief Financial Officer
(Principal Financial Officer)

Exhibit 10.4

March 28, 2019

John A. Latham, Ph.D.

Re: Transition and Consulting Agreement

Dear John:

This letter sets forth the terms of the transition and consulting agreement (the "**Agreement**") which Alder BioPharmaceuticals, Inc. (the "**Company**") is offering to you to aid in your employment transition.

1. Transition. As part of this Agreement, your employment will continue until April 5, 2019 (the "**Separation Date**"), unless your employment ends earlier pursuant to this provision. From the date of this Agreement through the Separation Date (the **"Transition Period"**), you must continue to abide by all Company policies and procedures and any agreements between you and the Company, you will continue to be employed in your role of "Chief Scientific Officer," and you will perform duties as requested by Bob Azelby. During the Transition Period, you will be paid your current base salary and you will continue to be eligible to participate in the Company's employee benefit plans pursuant to the terms of those plans. As part of this Agreement, the Company agrees that it will not terminate your employment other than for Cause (as defined in the Severance Plan, as defined below). (If your employment ends earlier than April 5, 2019 pursuant to this provision, the actual last day of your employment shall become the "Separation Date" for purposes of this Agreement. If you do not accept this offer or such last day occurs prior to your acceptance, then your last day of employment will be the date that is the earlier of April 5, 2019 or twenty-one (21) days after the date of this Agreement.). By executing this Agreement, you hereby acknowledge that you have resigned from every position you hold with the Company and its affiliated entities, effective as of the Separation Date, and you hereby agree to execute any necessary documentation to memorialize such resignation as the Company may request from time to time.

2. Accrued Salary and Vacation. Shortly after your last day of employment with the Company, the Company will pay you all accrued salary and all accrued and unused vacation time earned through the last day of your employment, subject to standard payroll deductions and withholdings. You will receive these payments regardless of whether or not you sign this Agreement.

3. Severance Benefits. As part of this Agreement, the Company will deem your employment separation to be a Non-Change in Control Termination under the terms of that certain Alder BioPharmaceuticals, Inc. Executive Severance Benefit Plan, as amended and restated

effective December 15, 2016, a copy of which is attached hereto as ***Exhibit A*** (the "**Severance Plan**"). Accordingly, in full satisfaction and in excess of, and subject to Section 3 ("Eligibility for Benefits") of, the Severance Plan, if you (i) timely return this fully signed Agreement to the Company and allow it to become effective; (ii) comply fully with your obligations hereunder; and (iii) sign the Separation Date Release attached hereto as ***Exhibit B*** on or within twenty-one (21) days after the Separation Date and allow that release to become effective, then the Company will provide you with the following as your sole severance benefits (the "**Severance Benefits**"):

(a) Severance Pay. The Company will pay you the Non-Change in Control Cash Severance for a Participant who is not the Chief Executive Officer ("**CEO**") of the Company, as set forth in Section 4(a)(ii) of the Severance Plan in the total amount of $686,492.28, which is equivalent to twelve (12) months of your current monthly base salary and your annual target bonus, payable as follows: $57,207.69 per month, less appropriate withholdings, beginning with the first payment on June 4, 2019 (provided this Agreement has become effective by such time), and thereafter on the last business day of each month, from June 28, 2019 with the last payment due on March 31, 2020.

(b) Health Insurance. To the extent provided by the federal COBRA law or, if applicable, state insurance laws (collectively, "**COBRA**"), and by the Company's current group health insurance policies, you will be eligible to continue your group health insurance benefits at your own expense after the last day of your employment. Later, you may be able to convert to an individual policy through the provider of the Company's health insurance, if you wish. You will be provided with a separate notice describing your rights and obligations under COBRA laws on or after the last day of your employment. As an additional Severance Benefit, provided that you timely elect continued coverage under COBRA, the Company will provide you with the COBRA severance benefits for a Participant who is not the CEO of the Company, as set forth in Section 4(b) of the Severance Plan.

4. Consulting Agreement. In exchange for your (i) entering into this Agreement and allowing it to become effective, (ii) complying with it, and (iii) signing the Separation Date Release and allowing it to become effective, then as an additional benefit, the Company agrees to retain you as a consultant under the terms specified below**.**

(a) Consulting Period. The consulting relationship will be deemed to commence on the day after the Separation Date and will continue for a period of twelve (12) months, unless terminated earlier pursuant to Paragraph 4(h) below or extended by agreement of you and the Company (the "**Consulting Period**"). Any agreement to extend the Consulting Period after the initial period must be set forth in writing signed by you and a duly authorized member of the Board of Directors of the Company.

(b) Consulting Services. You agree to provide consulting services to the Company in any area of your expertise, including but not limited to, providing transition briefing information regarding projects you have worked on for the Company and providing strategic advice (the "**Consulting Services**"). During the Consulting Period, you will report directly to the CEO. You agree to exercise the highest degree of professionalism and utilize your expertise and creative talents in performing these services. You agree to make yourself available to perform such Consulting Services throughout the Consulting Period, on an as-needed basis, up to a

maximum of twenty (20) hours per month. You will not be required to report to the Company's offices during the Consulting Period, except as specifically requested by the Company. When providing such services, you shall abide by the Company's policies and procedures.

(c) Independent Contractor Relationship. Your relationship with the Company during the Consulting Period will be that of an independent contractor, and nothing in this Agreement is intended to, or should be construed to, create a partnership, agency, joint venture or employment relationship after the Separation Date. Other than the Severance Benefits, you will not be entitled to any of the benefits which the Company may make available to its employees, including but not limited to, group health or life insurance, profit-sharing or retirement benefits, and you acknowledge and agree that your relationship with the Company during the Consulting Period will not be subject to the Fair Labor Standards Act or other laws or regulations governing employment relationships.

(d) Consulting Compensation. Vesting of your outstanding stock options, restricted stock units and any other equity awards, if any (the "**Equity**"), will continue during the Consulting Period. Your Equity, including the terms and conditions of the Equity and your rights and obligations with respect to the Equity, will continue to be governed by the terms of your stock option grant notices, restricted stock unit grant notices and applicable plan documents pursuant to which you acquired the Equity. You understand and agree that the tax treatment of certain of your stock options may change depending upon when you exercise them and that the Company makes no representation as to the tax treatment that will be afforded to any of your options. In addition, during the Consulting Period and provided that you remain in compliance with this Agreement, you will receive as consulting fees $500 per hour for each hour of Consulting Services you are approved to perform and actually perform for the Company (the "**Consulting Fees**"). Because you will be providing the Consulting Services as an independent contractor, the Company will not withhold any amount for taxes, social security or other payroll deductions from the Consulting Fees. The Company will report the Consulting Fees on an IRS Form 1099. You acknowledge that you will be entirely responsible for payment of any taxes that may be due on the Consulting Fees, and you hereby indemnify, defend and save harmless the Company, and its officers and directors in their individual capacities, from any liability for any taxes, penalties or interest that may be assessed by any taxing authority with respect to the Consulting Fees. The Consulting Fees will be paid within thirty (30) business days of receipt by Company of each of your invoice(s) for Consulting Services.

(e) Limitations on Authority. You will have no responsibilities or authority as a consultant to the Company other than as provided above. You will have no authority to bind the Company to any contractual obligations, whether written, oral or implied, except with the written authorization of the CEO. You agree not to represent or purport to represent the Company in any manner whatsoever to any third party unless authorized by the Company, in writing, to do so.

(f) Proprietary Information and Inventions. During the Consulting Period and thereafter, to the maximum extent permitted by applicable law, you agree not to use or disclose any confidential or proprietary information or materials of the Company, including any confidential or proprietary information that you obtain or develop in the course of performing the Consulting Services. Notwithstanding the foregoing, pursuant to 18 U.S.C. Section 1833(b), you

shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that: (1) is made in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney, and solely for the purpose of reporting or investigating a suspected violation of law; or (2) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Any and all work product you create in the course of performing the Consulting Services will be the sole and exclusive property of the Company. You hereby assign to the Company all right, title, and interest in all inventions, techniques, processes, materials, and other intellectual property developed in the course of performing the Consulting Services. You further acknowledge and reaffirm your continuing obligations under the Severance Plan and under your signed Proprietary Information and Inventions Agreement, a copy of which is attached hereto as ***Exhibit C***.

(g) Other Work Activities. Throughout the Consulting Period, you retain the right to engage in employment, consulting, or other work relationships in addition to your work for the Company. The Company will make reasonable arrangements to enable you to perform your work for the Company at such times and in such a manner so that it will not interfere with other activities in which you may engage. In order to protect the trade secrets and confidential and proprietary information of the Company, you agree that, during the Consulting Period, you will notify the Company, in writing, before you obtain employment with or perform competitive work for any business entity, or engage in any other work activity that is competitive with the Company.

(h) Termination of Consulting Period. Without waiving any other rights or remedies, the Company may terminate immediately the Consulting Period upon your breach of any provision of this Agreement or your Proprietary Information and Inventions Agreement (and your failure to cure said breach after you have been given thirty (30) days' notice to cure said breach, if deemed curable), or upon your performing competitive work for any business entity or engaging in any other work activity that is competitive with the Company. Upon termination of the Consulting Period, the Company will pay those fees incurred through and including the effective date of such termination.

5. No Other Compensation or Benefits. You acknowledge that payment of the Severance Benefits and provision of other benefits set forth in this Agreement fulfills and exceeds all of the Company's obligations to pay you severance or other benefits for a Non-Change in Control Termination pursuant to the Severance Plan, and that to the extent this Agreement differs from the Severance Plan with respect to the payment of any severance payments or benefits, this Agreement nevertheless supersedes the Company's severance obligations to you under the Severance Plan or any other plan, policy or agreement. You further acknowledge that upon receipt of the Severance Benefits as provided herein, if so required pursuant to this Agreement, the Company's severance obligations to you under the Severance Plan or any other plan, policy or agreement shall be extinguished. You further acknowledge that, except as expressly provided in this Agreement, you have not earned, will not earn by the last day of your employment, and will not receive from the Company any additional compensation, severance, or benefits on or after the last day of your employment, with the exception of any vested right you may have under the express terms of any applicable written ERISA-qualified benefit plan (e.g., 401(k) account). By way of example, you acknowledge that you have not earned and are not owed any equity, bonus, incentive compensation, or commissions.

6. Expense Reimbursements. You agree that, within thirty (30) days after the Separation Date, you will submit your final documented expense reimbursement statement reflecting all business expenses you incurred through the last day of your employment, if any, for which you seek reimbursement. The Company will reimburse you for reasonable business expenses pursuant to its regular business practice.

7. Return of Company Property. Within fifteen (15) days after the Separation Date (or earlier if requested by the Company), you shall return to the Company all Company documents (and all copies thereof) and other Company property in your possession or control, including but not limited to Company files, notes, financial and operational information, customer lists and contact information, product and services information, research and development information, drawings, records, plans, forecasts, reports, payroll information, spreadsheets, studies, analyses, compilations of data, proposals, agreements, sales and marketing information, personnel information, specifications, code, software, databases, computer-recorded information, tangible property and equipment (including but not limited to computers, facsimile machines, mobile telephones, tablets, handheld devices, and servers), credit cards, entry cards, identification badges and keys; and any materials of any kind which contain or embody any proprietary or confidential information of the Company and all reproductions thereof in whole or in part and in any medium. You agree that you will make a diligent search to locate any such documents, property and information within the timeframe referenced above. In addition, if you have used any personally owned computer, server, or e-mail system to receive, store, review, prepare or transmit any confidential or proprietary data, materials or information of the Company, then within fifteen (15) days after the Separation Date (or earlier if requested by the Company), you must provide the Company with a computer-useable copy of such information and then permanently delete and expunge such confidential or proprietary information from those systems without retaining any reproductions (in whole or in part); and you agree to provide the Company access to your system, as requested, to verify that the necessary copying and deletion is done. **Your entitlement to and receipt of the Severance Benefits described in this Agreement are expressly conditioned upon return of all Company property.** In addition, during the Consulting Period only, and after your return of property as required in this paragraph above, the Company will permit you to receive, and/or use any documents and/or information reasonably necessary to perform the Consulting Services, all of which equipment, documents and information you must return to the Company upon request and not later than the last day of the Consulting Period.

8. Mutual Nondisparagement. You agree not to disparage the Company, its respective officers, directors, employees, stockholders, agents and affiliates, in any manner likely to be harmful to them or their business, business reputation or personal reputation. Similarly, the Company agrees to instruct its officers and directors not to disparage you in any manner likely to be harmful to you or your business or personal reputation. Notwithstanding the foregoing in this paragraph, you and the Company (including the officers and directors of the Company) may respond accurately and fully to any question, inquiry or request for information when required by legal process or in connection with a government investigation. In addition, nothing in this provision is intended to prohibit or restrain any party in any manner from reporting possible violations of federal law or regulation to any governmental agency or entity, including but not limited to the Department of Justice and the Securities and Exchange Commission ("**SEC**"), or

making other disclosures that are protected under the whistleblower provisions of federal law or regulation.

9. No Admissions. The promises and payments in consideration of this Agreement shall not be construed to be an admission of any liability or obligation by either party to the other party, and neither party makes any such admission.

10. Release of Claims.

(a) General Release. In exchange for the consideration provided to you under this Agreement to which you would not otherwise be entitled, you hereby generally and completely release the Company and its affiliated, related, parent and subsidiary entities, and each of its and their current and former directors, officers, employees, stockholders, partners, agents, attorneys, predecessors, successors, insurers, affiliates, and assigns (collectively, the "**Released Parties**") from any and all claims, liabilities and obligations, both known and unknown, that arise out of or are in any way related to events, acts, conduct, or omissions occurring prior to or on the date you sign this Agreement (collectively, the "**Released Claims**").

(b) Scope of Release. The Released Claims include, but are not limited to: (i) all claims arising out of or in any way related to your employment with the Company, or the decision to terminate that employment; (ii) all claims related to compensation or benefits from the Company, including salary, bonuses, commissions, vacation, paid time off, expense reimbursements, severance pay, fringe benefits, stock, stock options, restricted stock units, or any other ownership, equity, or profits interests in the Company; (iii) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (iv) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (v) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys' fees, or other claims arising under the federal Civil Rights Act of 1964, the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) (the "**ADEA**"), the Washington Law Against Discrimination (RCW chapter 49.60; WAC 162-04-10, *et seq.*), the Washington Family Leave Act and the Washington Minimum Wage Act.

(c) Excluded Claims/Protected Rights. Notwithstanding the foregoing, the following are not included in the Released Claims (the "**Excluded Claims**"): (i) any rights or claims for indemnification you may have pursuant to any written indemnification agreement with the Company to which you are a party or under applicable law; (ii) any rights which cannot be waived as a matter of law; (iii) any rights you have to file or pursue a claim for workers' compensation or unemployment insurance; and (iv) any claims for breach of this Agreement. You understand that nothing in this Agreement limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the SEC, the Washington State Human Rights Commission, or any other federal, state, or local government agency or commission (collectively, "**Government Agencies**"). You further understand that this Agreement does not limit your ability to cooperate with, communicate with, or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, (including providing documents or other information without notice to the Company). While this Agreement does not limit your right to receive an award for information

provided to the SEC, you understand and agree that, to the maximum extent permitted by law, you are otherwise waiving any and all rights you have to individual relief based on any claims that you have released and waived by signing this Agreement. You represent and warrant that, other than the Excluded Claims, you are not aware of any claims you have or might have against any of the Released Parties that are not included in the Released Claims.

(d)ADEA Waiver. You acknowledge that you are knowingly and voluntarily waiving and releasing any rights you may have under the ADEA, and that the consideration given for the waiver and release in this section is in addition to anything of value to which you are already entitled. You further acknowledge that you have been advised, as required by the ADEA, that: (i) your waiver and release do not apply to any rights or claims that may arise after the date that you sign this Agreement; (ii) you should consult with an attorney prior to signing this Agreement (although you may choose voluntarily not to do so); (iii) you have twenty-one (21) days to consider this Agreement (although you may choose voluntarily to sign it earlier); (iv) you have seven (7) days following the date you sign this Agreement to revoke it (by providing written notice of your revocation to me); and (v) this Agreement will not be effective until the date upon which the revocation period has expired, which will be the eighth day after the date that this Agreement is signed by you provided that you do not revoke it (the "**Effective Date**").

11. Release of Unknown Claims. YOU UNDERSTAND THAT THIS AGREEMENT INCLUDES A RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS, EVEN IF THOSE UNKNOWN CLAIMS THAT, IF KNOWN BY YOU, WOULD AFFECT YOUR DECISION TO ACCEPT THIS AGREEMENT . In giving the release herein, which includes claims which may be unknown to you at present, you hereby expressly waive and relinquish all rights and benefits under any law of any jurisdiction with respect to your release of any unknown or unsuspected claims herein.

12. Representations. You hereby represent that you have been paid all compensation owed and for all hours worked, you have received all the leave and leave benefits and protections for which you are eligible pursuant to the federal Family and Medical Leave Act, the Washington Family Leave Act, or otherwise, and you have not suffered any on-the-job injury for which you have not already filed a workers' compensation claim. You further acknowledge and understand that the Company may disclose this Agreement, including without limitation by publicly filing it in connection with any corporate or public disclosure or filing requirements.

13. Miscellaneous. This Agreement, including its exhibits, constitutes the complete, final and exclusive embodiment of the entire agreement between you and the Company with regard to the subject matter hereof. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other agreements, promises, warranties or representations concerning its subject matter. This Agreement may not be modified or amended except in a writing signed by both you and a duly authorized officer of the Company. This Agreement will bind the heirs, personal representatives, successors and assigns of both you and the Company, and inure to the benefit of both you and the Company, their heirs, successors and assigns. If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement and the provision in question will be modified so as to be rendered enforceable in a manner consistent with the intent of the parties insofar as possible under applicable

law. This Agreement will be deemed to have been entered into and will be construed and enforced in accordance with the laws of the State of Washington as applied to contracts made and to be performed entirely within Washington. This Agreement may be executed in counterparts, each of which will be deemed an original, all of which together constitutes one and the same instrument. This Agreement may be signed and delivered by facsimile signature, PDF or any electronic signature complying with the U.S. federal ESIGN Act of 2000 (e.g., www.docusign.com).

If this Agreement is acceptable to you, please sign and date below within twenty-one (21) days and send me the fully signed Agreement. The Company's offer contained herein will automatically expire if we do not receive the fully signed Agreement within this timeframe.

I wish you good luck in your future endeavors.

Sincerely,

Alder BioPharmaceuticals, Inc.

By: Robert W. Azelby
Robert Azelby
President and Chief Executive Officer

Understood and Agreed:

/s/ John A. Latham
John A. Latham, Ph.D.

March 28, 2019
Date

Exhibit A

Severance Plan

ALDER BIOPHARMACEUTICALS, INC.

EXECUTIVE SEVERANCE BENEFIT PLAN

1. Introduction. This Alder BioPharmaceuticals, Inc. Executive Severance Benefit Plan (the "***Plan***") amends and restates the Alder BioPharmaceuticals, Inc. Executive Change in Control Severance Benefit Plan established effective June 13, 2012 and the Executive Severance Benefit Plan effective May 7, 2014. The Plan is hereby amended and restated effective December 15, 2016. The purpose of the Plan is to provide for the payment of severance benefits to certain eligible executive employees of Alder BioPharmaceuticals, Inc. (the "***Company***") or any Affiliate (as defined below)in the event that such persons become subject to involuntary or constructive employment terminations. This Plan document also is the Summary Plan Description for the Plan.

2. Definitions. For purposes of the Plan, the following terms are defined as follows:

(a) "***Accrued Amounts***" means any unpaid annual base salary accrued through the date of a Participant's Qualifying Termination and any accrued but unpaid vacation pay.

(b) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405 of the Securities Act of 1933, as amended. The Plan Administrator shall have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(c) "***Annual Bonus***" means the annual cash bonus that a Participant is eligible to earn, if any, under the Company's or any Affiliate's annual cash incentive program, as in effect from time to time.

(d) "***Annual Target Bonus***" means the annual bonus that a Participant is expected to earn under the Company's or any Affiliate's annual cash incentive program assuming achievement of target-level performance on all metrics.

(e) "***Board***" means the Board of Directors of the Company.

(f) "***Cause***" shall include, but not be limited to: (i) employee's continued failure, in the reasonable opinion of the Board, to perform one or more assigned duties or responsibilities to the Company or an Affiliate, such failure being evidenced by a written report submitted on behalf of the Company or an Affiliate to the Board so indicating failure and including a remedy or remedies reasonably satisfactory to the Board for correcting the asserted failure(s); (ii) failure to follow the lawful directives of employee's manager(s), such failure being evidenced by a written report submitted by such manager(s) to the Board so indicating failure and including a remedy or remedies reasonably satisfactory to the Board; (iii) material violation of any Company or Affiliate policy; (iv) commission of any act of fraud, embezzlement, dishonesty or any other misconduct that has caused or is reasonably expected to result in material injury to the Company or an Affiliate; (v) unauthorized use or disclosure of any proprietary information or trade secrets of the Company or an Affiliate or any other party to whom employee owes an obligation of nondisclosure as a result of the relationship with the Company or an Affiliate; (vi) material breach by employee of any obligations under any written agreement or covenant with the Company or an Affiliate; or (vii) conviction of, or plea of "guilty" or "no contest" to, a felony under the laws of the United States or any state.

(g) "***Change in Control***" shall have the meaning set forth in the Company's 2014 Equity Incentive Plan. The definition of Change in Control is intended to conform to the definitions of "change in ownership of a corporation" and "change in ownership of a substantial portion of a corporation's assets" provided in Treasury Regulation Sections 1.409A-3(i)(5)(v) and (vii).

(h) "***Change in Control Termination***" means a Participant's Separation from Service due to (i) dismissal or discharge by the Company or an Affiliate for a reason other than death, disability, or Cause, or (ii) a Resignation for Good Reason, either of which occurs in connection with or within twelve (12) months following the effective date of a Change in Control. In no event will a Participant's Separation from Service due to death, disability or Cause, or a resignation by a Participant without Good Reason, constitute a Change in Control Termination.

(i) "***Code***" means the Internal Revenue Code of 1986, as amended.

(j) "***Common Stock***" means the common stock of the Company.

(k) "***Company***" means Alder BioPharmaceuticals, Inc. or, following a Change in Control, the surviving entity resulting from such event.

(l) "***ERISA***" means the Employee Retirement Income Security Act of 1974, as amended.

(m) "***Monthly Annual Target Bonus***" means a Participant's Annual Target Bonus, divided by 12.

(n) "***Monthly Base Salary***" means the Participant's annual base salary, ignoring any decrease in annual base salary that forms the basis for a Resignation for Good Reason, as in effect on the date of the Qualifying Termination, divided by 12.

(o) "***Non-Change in Control Termination***" means a Participant's dismissal or discharge by the Company or an Affiliate resulting in a Separation from Service, for a reason other than death, disability, or Cause, other than in connection with or within twelve (12) months following the effective date of a Change in Control. In no event will a Participant's Separation from Service due to death, disability or Cause, or a resignation by a Participant for any reason, constitute a Non-Change in Control Termination.

(p) "***Participant***" means each individual who (i) is employed by the Company or an Affiliate as an executive officer or key employee designated by the Board, and (ii) has received and returned a signed Participation Notice.

(q) "***Participation Notice***" means the latest notice delivered by the Company to a Participant informing the Participant that he or she is eligible to participate in the Plan, in substantially the form of **Exhibit A** to the Plan.

(r) "***Plan Administrator***" means the Board or any committee of the Board duly authorized to administer the Plan. The Plan Administrator may be, but is not required to be, the Compensation Committee of the Board. The Board may at any time administer the Plan, in whole or in part, notwithstanding that the Board has previously appointed a committee to act as the Plan Administrator.

(s) "***Qualifying Termination***" means either a Change in Control Termination or a Non-Change in Control Termination.

(t) "***Resignation for Good Reason***" means a Participant's resignation from all positions the Participant then holds with the Company and its Affiliates, resulting in a Separation from Service, within thirty (30) days after the expiration of the cure period set forth below, provided the Participant has given the Plan Administrator written notice of the occurrence of any of the following events taken without the Participant's written consent within thirty (30) days after the first occurrence of such event and the Company and its Affiliates have not cured such event, to the extent curable, within thirty (30) days thereafter: (1) a material reduction in the Participant's annual base salary; (2) a material adverse change in Participant's position causing such position to be of materially reduced status or responsibility; (3) relocation of the Participant's principal place of employment to a place that increases the Participant's one-way commute by more than fifty (50) miles as compared to the Participant's then-current principal place of employment immediately prior to such relocation; or (4) the failure of any successor-in-interest to assume a material obligation of the Company under this Plan or material written contractual obligation to Participant, which (in either case) adversely affects the Participant.

(u) "***Separation from Service***" means a "separation from service" within the meaning of Treasury Regulations Section 1.409A-1(h), without regard to any alternative definition thereunder.

(v) "***Severance Multiplier***" means:

(1) for a Participant who is the Chief Executive Officer of the Company at the time of the Qualifying Termination, eighteen (18); and

(2) for a Participant who is not the Chief Executive Officer of the Company at the time of the Qualifying Termination, six (6) plus one (1) for each full year of employment with the Company or an Affiliate up to a maximum of twelve (12).

(w) "***Severance Period***" means a period of months commencing on the date of a Participant's Qualifying Termination, with the number of months being equal to a Participant's applicable Severance Multiplier.

(x) "***Stock Awards***" means outstanding stock options and any other equity awards granted to a Participant from a Company plan.

3. Eligibility for Benefits.

(a) Eligibility; Exceptions to Benefits. Subject to the terms and conditions of the Plan, the Company (or the Participant's employing Affiliate) will provide the benefits described in Section 4 to the affected Participant. The Plan does not provide for duplication (in whole or in part) of benefits with any other agreement or plan and any payments under this Plan shall be reduced by any severance benefit payable to Participant under any other Company or Affiliate plan, program or agreement. A Participant will not receive benefits under the Plan in the following circumstances, as determined by the Plan Administrator, in its sole discretion:

(i) The Participant's employment is terminated by the Company, an Affiliate or the Participant for any reason other than a Qualifying Termination.

(ii) The Participant has not entered into the Employee Proprietary Information and Inventions Agreement or any similar or successor document (the "***Proprietary Information Agreement***").

(iii) The Participant has failed to execute and allow to become effective the Release (as defined and described below) within sixty (60) days following the Participant's Separation from Service.

(iv) The Participant has failed to return all Company Property. For this purpose, "***Company Property***" means all paper and electronic Company and Affiliate documents (and all copies thereof) created and/or received by the Participant during his or her period of employment with the Company or any Affiliate and other Company or Affiliate materials and property that the Participant has in his or her possession or control, including, without limitation, Company and Affiliate files, correspondence, emails, memoranda, notes, notebooks, drawings, records, plans, forecasts, reports, studies, analyses, proposals, agreements, financial information, research and development information, sales and marketing information, operational and personnel information, specifications, code, software, databases, computer-recorded information, tangible property and equipment (including, without limitation, leased vehicles, computers, computer equipment, software programs, facsimile machines, mobile telephones, servers), credit and calling cards, entry cards, identification badges and keys, and any materials of any kind that contain or embody any proprietary or confidential information of the Company or any Affiliate (and all reproductions thereof, in whole or in part). As a condition to receiving benefits under the Plan, a Participant must not make or retain copies, reproductions or summaries of any such Company or Affiliate documents, materials or property and must make a diligent search to locate any such documents, property and information. If the Participant has used any personally owned computer, server, or e-mail system to receive, store, review, prepare or transmit any Company or Affiliate confidential or proprietary data, materials or information, then within ten (10) business days after the Separation from Service, the Participant must provide the Company or an Affiliate with a computer-useable copy of all such information and then permanently delete and expunge such confidential or proprietary information from those systems. However, a Participant is not required to return his or her personal copies of documents evidencing the Participant's hire, termination, compensation, benefits and stock options and any other documentation received as a stockholder of the Company. A Participant's failure to return Company Property that is neither confidential nor material, such as an identification badge or calling card, will not, in and of itself, disqualify such Participant from receiving benefits under the Plan; *provided*, that any such items of Company Property are subsequently returned to the Company upon request.

(v) The Participant has failed to cooperate fully with the Company or an Affiliate in connection with its actual or contemplated defense, prosecution, or investigation of any existing or future litigation, arbitrations, mediations, claims, demands, audits, government or regulatory inquiries, or other matters arising from events, acts, or failures to act that occurred during the time period in which the Participant was employed by the Company or an Affiliate (including any period of employment with an entity acquired by the Company). Such cooperation includes, without limitation, being available upon reasonable notice, without subpoena, to provide accurate and complete advice, assistance and information to the Company and an Affiliate, including offering and explaining evidence, providing truthful and accurate sworn statements, and participating in discovery and trial preparation and testimony. As a condition of receiving benefits under the Plan, the Participant must also promptly send the Company copies of all correspondence (for example, but not limited to, subpoenas) received by the Participant in connection with any such legal proceedings, unless the Participant is expressly prohibited by law from so doing. The Company will (A) make reasonable efforts to accommodate the Participant's scheduling needs, (B) reimburse the Participant for reasonable out-of-pocket expenses incurred in connection with any such cooperation (excluding foregone wages, salary, or other compensation, except as set forth in subsection C below) within thirty (30) days after the Participant's timely presentation of appropriate documentation thereof, in accordance with the Company's standard reimbursement policies and procedures, and (C) to the extent the Participant provides such cooperation following the latter of the termination of Participant's

employment with the Company or an Affiliate or the Severance Period, will pay Participant for his or her

time in providing such cooperation at a rate equivalent to a per diem based upon his or her base salary as in effect on the date of termination of Participant's employment with the Company or an Affiliate.

(b) Termination of Benefits. A Participant's right to receive benefits under the Plan will terminate immediately if, at any time prior to or during the period for which the Participant is receiving benefits under the Plan, the Participant, without the prior written approval of the Plan Administrator:

(i) willfully breaches a material provision of the Participant's Proprietary Information Agreement and/or any obligations of confidentiality, non-solicitation, non-disparagement, no conflicts or non-competition provision set forth in any other agreement between the Company (or an Affiliate) and a Participant (including, without limitation, the Participant's employment agreement or offer letter) or under applicable law;

(ii) encourages or solicits any of the then current employees of the Company or any Affiliate to leave the employ of the Company or any Affiliate for any reason or interferes in any other manner with employment relationships at the time existing between the Company or any Affiliate and their then current employees; or

(iii) induces any of the Company's or any Affiliate's then current clients, customers, suppliers, vendors, distributors, licensors, licensees, or other third party to terminate their existing business relationship with the Company or any Affiliate or interferes in any other manner with any existing business relationship between the Company of any Affiliate and any then current client, customer, supplier, vendor, distributor, licensor, licensee, or other third party.

4. Payments & Benefits. Except as may otherwise be provided in a Participant's Participation Notice, in the event of a Qualifying Termination, the Company, directly or through an Affiliate, will pay the Participant the Accrued Amounts, if any, on the date of such Qualifying Termination. In addition, subject to Sections 5 and 6 and a Participant's continued compliance with the provisions of any agreement with the Company or any Affiliate, including, without limitation, the Participant's Proprietary Information Agreement, in the event of a Qualifying Termination, the Participant shall be entitled to the payments and benefits described in this Section 4, subject to the terms and conditions of the Plan.

(a) Cash Severance.

(i) ***Change in Control Termination*****.** Upon a Change in Control Termination, the Participant will receive as severance an amount equal to the product of (i) the sum of the Participant's Monthly Base Salary and Monthly Annual Target Bonus, and (ii) the Participant's applicable Severance Multiplier (the "***Change in Control Cash Severance***"). The Change in Control Cash Severance will be paid in a single lump sum, less all applicable withholdings and deductions; *provided*, *however*, that no payments will be made prior to the first business day to occur on or after the 60th day following the date of the Participant's Qualifying Termination.

(ii) ***Non-Change in Control Termination*****.** Upon a Non-Change in Control Termination, the Participant will receive as severance an amount equal to the product of (i) the sum of the Participant's Monthly Base Salary and Monthly Annual Target Bonus, and (ii) the Participant's applicable Severance Multiplier (the "***Non-Change in Control Cash Severance***"). The Non-Change in Control Cash Severance will be paid in equal installments on the Company's (or the Participant's employing Affiliate) regular payroll schedule over the Severance Period, less all applicable withholdings and deductions; *provided*, *however*, that no payments will be made prior to the first business day to occur on or after the 60th day following the date of the Participant's Qualifying Termination. On the first business day to occur on or after the 60th day following the date of the Participant's Qualifying Termination, the Company (or the

Participant's employing Affiliate) will pay the Participant in a lump sum the Non-Change in Control Cash Severance that the Participant would have received on or prior to such date under the original schedule but for the delay while waiting for the 60th day in compliance with Section 409A of the Code and the effectiveness of the Release referenced in Section 5(a) below, with the balance of the Non-Change in Control Cash Severance being paid as originally scheduled.

(b) COBRA Benefits.

(i) If the Participant is eligible and has made the necessary elections for continuation coverage pursuant to COBRA under a health, dental, or vision plan sponsored by the Company or an Affiliate, the Company (or the Participant's employing Affiliate) will pay, as and when due directly to the COBRA carrier, the COBRA premiums necessary to continue the COBRA coverage for the Participant and his or her eligible dependents until the earliest to occur of (i) the end of the applicable Severance Period, (ii) the date on which the Participant becomes eligible for coverage under the group health insurance plans of a subsequent employer, and (iii) the date on which the Participant is no longer eligible for continuation coverage under COBRA (such period from the date of the Qualifying Termination through the earliest of (i) through (iii), the "***COBRA Payment Period***").

(ii) Notwithstanding the foregoing, if at any time the Company (or the Participant's employing Affiliate) determines, in its sole discretion, that the payment of COBRA premiums hereunder is likely to result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including, without limitation, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA premiums, the Company will instead pay the Participant, on the first day of each month of the remainder of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings and deductions. To the extent applicable, on the first business day to occur on or after the 60th day following the date of the Participant's Qualifying Termination, the Company (or the Participant's employing Affiliate) will make the first payment under this Section 4(b)(ii) in a lump sum equal to the aggregate amount of payments that the Company (or the Participant's employing Affiliate) would have paid through such date had such payments commenced on the Separation from Service through such 60th day, with the balance of the payments paid thereafter on the original schedule. The Participant may, but is not obligated to, use such payments toward the cost of COBRA premiums.

(iii) If the Participant becomes eligible for coverage under another employer's group health plan or otherwise ceases to be eligible for COBRA during the applicable Severance Period, the Participant must immediately notify the Company (or the Participant's employing Affiliate) of such event, and all payments and obligations under this section 4(b) will cease. For purposes of this Section 4(b), references to COBRA also refer to analogous provisions of state law. Any applicable insurance premiums that are paid by the Company (or the Participant's employing Affiliate) will not include any amounts payable by the Participant under a Code Section 125 health care reimbursement plan, which are the sole responsibility of the Participant.

(c) Accelerated Vesting.

(i) ***Change in Control.*** Upon a Change in Control, the vesting and exercisability (if applicable) of outstanding and unvested Stock Options that are held by the Participant on the effective date of the Change in Control will accelerate and become fully vested upon any of the following events: (i) any Stock Awards that do not remain in effect and are not assumed or substituted with similarly equivalent options, restricted stock, stock appreciation rights, restricted stock units or the like following the closing of a Change in Control; (ii) if within one year following the closing of a Change of

Control there is a Change in Control Termination for Participant, and (iii) if the Participant is the Chief Executive Officer and remains an employee of the Company (or the Participant's employing Affiliate) or its successor on the one-year anniversary of the closing of a Change in Control.

5. Conditions and Limitations on Benefits.

(a) Release. To be eligible to receive any benefits under the Plan, a Participant must sign a general waiver and release in substantially the form used by the Company (or the Participant's employing Affiliate) from time to time.

(b) Prior Agreements; Certain Reductions. The Plan Administrator will reduce a Participant's benefits under the Plan by any other statutory severance obligations or contractual severance benefits, obligations for pay in lieu of notice, and any other similar benefits payable to the Participant by the Company of an Affiliate that are due in connection with the Participant's Qualifying Termination and that are in the same form as the benefits provided under the Plan (e.g., equity award vesting credit). Without limitation, this reduction includes a reduction for any benefits required pursuant to (i) any applicable legal requirement, including, without limitation, the Worker Adjustment and Retraining Notification Act (the "***WARN Act***"), (ii) a written employment, severance or equity award agreement with the Company of an Affiliate, (iii) any Company or Affiliate policy or practice providing for the Participant to remain on the payroll for a limited period of time after being given notice of the termination of the Participant's employment, and (iv) any required salary continuation, notice pay, statutory severance payment, or other payments either required by local law, or owed pursuant to a collective labor agreement, as a result of the termination of the Participant's employment. The benefits provided under the Plan are intended to satisfy, to the greatest extent possible, and not to provide benefits duplicative of, any and all statutory, contractual and collective agreement obligations of the Company and its Affiliates in respect of the form of benefits provided under the Plan that may arise out of a Qualifying Termination, and the Plan Administrator will so construe and implement the terms of the Plan. Reductions may be applied on a retroactive basis, with benefits previously provided being recharacterized as benefits pursuant to the Company's or an Affiliate's statutory or other contractual obligations. The payments pursuant to the Plan are in addition to, and not in lieu of, any unpaid salary, bonuses or employee welfare benefits to which a Participant may be entitled for the period ending with the Participant's Qualifying Termination.

(c) Mitigation. Except as otherwise specifically provided in the Plan, a Participant will not be required to mitigate damages or the amount of any payment provided under the Plan by seeking other employment or otherwise, nor will the amount of any payment provided for under the Plan be reduced by any compensation earned by a Participant as a result of employment by another employer or any retirement benefits received by such Participant after the date of the Participant's termination of employment with the Company (or the Participant's employing Affiliate) (except as provided for in Section 5(b)).

(d) Indebtedness of Participants. To the extent permitted under applicable law, if a Participant is indebted to the Company or any Affiliate on the effective date of a Participant's Qualifying Termination, the Company and its Affiliates reserve the right to offset the payment of any benefits under the Plan by the amount of such indebtedness. Such offset will be made in accordance with all applicable laws. The Participant's execution of the Participation Notice constitutes knowing written consent to the foregoing.

(e) Parachute Payments.

(i) Except as otherwise expressly provided in an agreement between a Participant and the Company or an Affiliate, if any payment or benefit the Participant would receive in

connection with a Change in Control from the Company or otherwise (a "***Payment***") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "***Excise Tax***"), then such Payment will be equal to the Reduced Amount. The "***Reduced Amount***" will be either (A) the largest portion of the Payment that would result in no portion of the Payment being subject to the Excise Tax, or (B) the largest portion, up to and including the total, of the Payment, whichever amount ((A) or (B)), after taking into account all applicable federal, state, provincial, foreign, and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in the Participant's receipt, on an after-tax basis, of the greatest economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in payments or benefits constituting "parachute payments" is necessary so that the Payment equals the Reduced Amount, reduction will occur in the following order: (1) reduction of cash payments; (2) cancellation of accelerated vesting of stock awards other than stock options; (3) cancellation of accelerated vesting of stock options; and (4) reduction of other benefits paid to the Participant. Within any such category of Payments (that is, (1), (2), (3) or (4)), a reduction will occur first with respect to amounts that are not "deferred compensation" within the meaning of Section 409A of the Code and then with respect to amounts that are "deferred compensation." In the event that acceleration of vesting of stock award compensation is to be reduced, such acceleration of vesting will be cancelled in the reverse order of the date of grant of the Participant's applicable type of stock award (*i.e.*, earliest granted stock awards are cancelled last). If Section 409A of the Code is not applicable by law to a Participant, the Company will determine whether any similar law in the Participant's jurisdiction applies and should be taken into account.

(ii) The professional firm engaged by the Company for general tax purposes as of the day prior to the effective date of the Change in Control shall make all determinations required to be made under this Section 5(e). If the professional firm so engaged by the Company is serving as an accountant or auditor for the individual, entity or group effecting the Change in Control, the Company shall appoint a nationally recognized independent registered public accounting firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such professional firm required to be made hereunder. Any good faith determinations of the professional firm made hereunder shall be final, binding and conclusive upon the Company and the Participant.

6. Tax Matters.

(a) Application of Code Section 409A. Notwithstanding anything herein to the contrary, (i) if at the time of Participant's termination of employment with the Company or an Affiliate, the Participant is a "specified employee" as defined in Section 409A of the Code and the applicable guidance and regulations thereunder (collectively, "***Section 409A***"), and the deferral of the commencement of any payments or benefits otherwise payable hereunder as a result of such termination of employment is necessary in order to prevent any accelerated or additional tax under Section 409A, then the Company (or the Participant's employing Affiliate) will defer the commencement of the payment of any such payments or benefits hereunder (without any reduction in such payments or benefits ultimately paid or provided to Participant) until the first business day to occur following the date that is six (6) months following Participant's termination of employment with the Company (or the Participant's employing Affiliate) (or the earliest date as is permitted under Section 409A); and (ii) if any other payments of money or other benefits due to Participant hereunder could cause the application of an accelerated or additional tax under Section 409A, such payments or other benefits shall be deferred if deferral will make such payment or other benefits compliant under Section 409A, or otherwise such payment or other benefits shall be restructured, to the extent possible, in a manner, determined by the Board, that does not cause such an accelerated or additional tax. In the event that payments under the Plan are deferred pursuant to this Section 6 in order to prevent any accelerated tax or additional tax under Section 409A, then such payments shall be paid at the time specified under this Section 6 without any interest thereon. The Company shall consult with

Participant in good faith regarding the implementation of this Section 6; *provided*, that neither the Company, any Affiliate nor any of its employees or representatives shall have any liability to Participant with respect thereto. Notwithstanding anything to the contrary herein, to the extent required by Section 409A, a termination of employment shall not be deemed to have occurred for purposes of any provision of the Plan providing for the payment of amounts or benefits upon or following a termination of employment unless such termination is also a "separation from service" within the meaning of Section 409A and, for purposes of any such provision of this Agreement, references to a "resignation," "termination," "termination of employment" or like terms shall mean separation from service. For purposes of Section 409A, each payment made under the Plan shall be designated as a "separate payment" within the meaning of the Section 409A. Notwithstanding anything to the contrary herein, except to the extent any expense, reimbursement or in-kind benefit provided pursuant to the Plan does not constitute a "deferral of compensation" within the meaning of Section 409A, (A) the amount of expenses eligible for reimbursement or in-kind benefits provided to a Participant during any calendar year will not affect the amount of expenses eligible for reimbursement or in-kind benefits provided to a Participant in any other calendar year; (B) the reimbursements for expenses for which a Participant is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred; and (C) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit.

(b) Withholding. All payments and benefits under the Plan will be subject to all applicable deductions and withholdings, including, without limitation, obligations to withhold for federal, state, provincial, foreign and local income and employment taxes.

(c) Tax Advice. By becoming a Participant in the Plan, the Participant agrees to review with the Participant's own tax advisors the federal, state, provincial, local, and foreign tax consequences of participation in the Plan. The Participant will rely solely on such advisors and not on any statements or representations of the Company, any Affiliate or any of its agents. The Participant understands that Participant (and not the Company or any Affiliate) will be responsible for his or her own tax liability that may arise as a result of becoming a Participant in the Plan.

7. Reemployment. In the event of a Participant's reemployment by the Company of an Affiliate during the period of time in respect of which severance benefits have been provided (that is, benefits as a result of a Qualifying Termination), the Company or the Participant's employing Affiliate, in its sole and absolute discretion, may require such Participant to repay to the Company or an Affiliate all or a portion of such severance benefits as a condition of reemployment.

8. Clawback; Recovery. All payments and severance benefits provided under the Plan will be subject to recoupment in accordance with any clawback policy that the Company or an Affiliate is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in the Participation Notice, as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to Resignation for Good Reason, constructive termination, or any similar term under any plan of or agreement with the Company or any Affiliate.

9. Right to Interpret Plan; Amendment and Termination.

(a) Exclusive Discretion. The Plan Administrator shall have the exclusive discretion and authority to establish rules, forms, and procedures for the administration of the Plan and to construe

and interpret the Plan and to decide any and all questions of fact, interpretation, definition, computation or administration arising in connection with the operation of the Plan, including, but not limited to, the eligibility to participate in the Plan and amount of benefits paid under the Plan. The rules, interpretations, computations and other actions of the Plan Administrator shall be binding and conclusive on all persons.

(b) Amendment or Termination. The Company reserves the right to amend or terminate the Plan, any Participation Notice issued pursuant to the Plan or the benefits provided hereunder at any time; *provided, however*, that no such amendment or termination will apply to any Participant who would be adversely affected by such amendment or termination unless such Participant consents in writing to such amendment or termination. Any action amending or terminating the Plan or any Participation Notice will be in writing and executed by a duly authorized officer of the Company.

10. No Implied Employment Contract.

The Plan shall not be deemed (i) to give any employee or other person any right to be retained in the employ of the Company or any Affiliate or (ii) to interfere with the right of the Company or an Affiliate to discharge any employee or other person at any time, with or without cause, which right is hereby reserved.

11. ERISA; Legal Construction.

This Plan is intended to be governed by and shall be construed in accordance with the Employee Retirement Income Security Act of 1974 ("***ERISA***") and, to the extent not preempted by ERISA, the laws of the State of Washington. A statement of ERISA rights, and other Plan information is set forth in Exhibit B attached hereto and incorporated by reference.

12. General Provisions.

(a) Notices. Any notice, demand or request required or permitted to be given by either the Company or a Participant pursuant to the terms of the Plan will be in writing and will be deemed given when delivered personally, when received electronically (including email addressed to the Participant's Company email account and to the Company email account of the Company's Chief Executive Officer), or deposited in the U.S. Mail, First Class with postage prepaid, and addressed to the parties, in the case of the Company, at the address set forth in Section 14(d), in the case of a Participant, at the address as set forth in the Company's employment file maintained for the Participant as previously furnished by the Participant or such other address as a party may request by notifying the other in writing.

(b) Transfer and Assignment. The rights and obligations of a Participant under the Plan may not be transferred or assigned without the prior written consent of the Company. The Plan will be binding upon any surviving entity resulting from a Change in Control and upon any other person who is a successor by merger, acquisition, consolidation or otherwise to the business formerly carried on by the Company without regard to whether or not such person or entity actively assumes the obligations hereunder.

(c) Waiver. Any party's failure to enforce any provision or provisions of the Plan will not in any way be construed as a waiver of any such provision or provisions, nor prevent any party from thereafter enforcing each and every other provision of the Plan. The rights granted to the parties herein are cumulative and will not constitute a waiver of any party's right to assert all other legal remedies available to it under the circumstances.

(d) Severability. Should any provision of the Plan be declared or determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions will not in any way be affected or impaired.

(e) Section Headings. Section headings in the Plan are included only for convenience of reference and will not be considered part of the Plan for any other purpose.

Exhibit A

Alder BioPharmaceuticals, Inc.
Executive Severance Benefit Plan
Participation Notice

To:

Date:

Alder BioPharmaceuticals, Inc. (the "***Company***") has adopted the Alder BioPharmaceuticals, Inc. Executive Severance Benefit Plan (the "***Plan***"). The Company is providing you this Participation Notice to inform you that you have been designated as a Participant in the Plan. A copy of the Plan document is attached to this Participation Notice. The terms and conditions of your participation in the Plan are as set forth in the Plan and this Participation Notice, which together constitute the Summary Plan Description for the Plan.

You understand that by accepting your status as a Participant in the Plan, [except as expressly stated in the Plan] you are waiving your rights to receive any severance benefits on any type of termination of employment under any other contract or agreement with the Company or any Affiliate.

You also understand that by accepting your status as a Participant in the Plan, your stock options that have been considered to be "incentive stock options" prior to the date hereof may cease to qualify as "incentive stock options" as a result of the vesting acceleration benefit provided in the Plan. By accepting participation, you represent that you have either consulted your personal tax or financial planning advisor about the tax consequences of your participation in the Plan, or you have knowingly declined to do so.

Please return a signed copy of this Participation Notice to the Company's Human Resources Director at the Company's offices and retain a copy of this Participation Notice, along with the Plan document, for your records.

Alder BioPharmaceuticals, Inc.:

(Signature)

By:

Title:

Participant:

(Signature)

Exhibit B

Matters related to Plan claims, ERISA rights and other information

I. Claims, Inquiries and Appeals.

(f) Applications for Benefits and Inquiries. Any application for benefits, inquiries about the Plan or inquiries about present or future rights under the Plan must be submitted to the Plan Administrator in writing by an applicant (or his or her authorized representative). The Plan Administrator is:

Alder BioPharmaceuticals, Inc.

11804 North Creek Parkway South
Bothell, WA 98011

(g) Denial of Claims. In the event that any application for benefits is denied in whole or in part, the Plan Administrator must provide the applicant with written or electronic notice of the denial of the application, and of the applicant's right to review the denial. Any electronic notice will comply with the regulations of the U.S. Department of Labor. The notice of denial will be set forth in a manner designed to be understood by the applicant and will include the following:

(1) the specific reason or reasons for the denial;

(2) references to the specific Plan provisions upon which the denial is based;

(3) a description of any additional information or material that the Plan Administrator needs to complete the review and an explanation of why such information or material is necessary; and

(4) an explanation of the Plan's review procedures and the time limits applicable to such procedures, including a statement of the applicant's right to bring a civil action under Section 502(a) of ERISA following a denial on review of the claim, as described in Section 9(d) below.

This notice of denial will be given to the applicant within ninety (90) days after the Plan Administrator receives the application, unless special circumstances require an extension of time, in which case, the Plan Administrator has up to an additional ninety (90) days for processing the application. If an extension of time for processing is required, written notice of the extension will be furnished to the applicant before the end of the initial ninety (90) day period.

This notice of extension will describe the special circumstances necessitating the additional time and the date by which the Plan Administrator is to render its decision on the application.

(h) Request for a Review. Any person (or that person's authorized representative) for whom an application for benefits is denied, in whole or in part, may appeal the denial by submitting a request for a review to the Plan Administrator within sixty (60) days after the application is denied. A request for a review shall be in writing and shall be addressed to:

Alder BioPharmaceuticals, Inc.

11804 North Creek Parkway South
Bothell, WA 98011

A request for review must set forth all of the grounds on which it is based, all facts in support of the request and any other matters that the applicant feels are pertinent. The applicant (or his or her representative) shall have the opportunity to submit (or the Plan Administrator may require the applicant to submit) written comments, documents, records, and other information relating to his or her claim. The applicant (or his or her representative) shall be provided, upon request and free of charge, reasonable access to, and copies of, all documents, records and other information relevant to his or her claim. The review shall take into account all comments, documents, records and other information submitted by the applicant (or his or her representative) relating to the claim, without regard to whether such information was submitted or considered in the initial benefit determination.

(i) Decision on Review. The Plan Administrator will act on each request for review within sixty (60) days after receipt of the request, unless special circumstances require an extension of time (not to exceed an additional sixty (60) days), for processing the request for a review. If an extension for review is required, written notice of the extension will be furnished to the applicant within the initial sixty (60) day period. This notice of extension will describe the special circumstances necessitating the additional time and the date by which the Plan Administrator is to render its decision on the review. The Plan Administrator will give prompt, written or electronic notice of its decision to the applicant. Any electronic notice will comply with the regulations of the U.S. Department of Labor. In the event that the Plan Administrator confirms the denial of the application for benefits in whole or in part, the notice will set forth, in a manner calculated to be understood by the applicant, the following:

(1) the specific reason or reasons for the denial;

(2) references to the specific Plan provisions upon which the denial is based;

(3) a statement that the applicant is entitled to receive, upon request and free of charge, reasonable access to, and copies of, all documents, records and other information relevant to his or her claim; and

(4) a statement of the applicant's right to bring a civil action under Section 502(a) of ERISA.

(j) Rules and Procedures. The Plan Administrator will establish rules and procedures, consistent with the Plan and with ERISA, as necessary and appropriate in carrying out its responsibilities in reviewing benefit claims. The Plan Administrator may require an applicant who wishes to submit additional information in connection with an appeal from the denial of benefits to do so at the applicant's own expense.

(k) Exhaustion of Remedies. No legal action for benefits under the Plan may be brought until the applicant (i) has submitted a written application for benefits in accordance with the procedures described by Section 9(a) above, (ii) has been notified by the Plan Administrator that the application is denied, (iii) has filed a written request for a review of the application in accordance with the appeal procedure described in Section I(c) above, and (iv) has been notified that the Plan Administrator has denied the appeal. Notwithstanding the foregoing, if the Plan Administrator does not respond to a Eligible Employee's claim or appeal within the relevant time limits specified in this Section 9, the Eligible Employee may bring legal action for benefits under the Plan pursuant to Section 502(a) of ERISA.

II. Basis of Payments to and from Plan.

The Plan shall be unfunded, and all cash payments under the Plan shall be paid only from the general assets of the Company.

III. Other Plan Information.

(a) Employer and Plan Identification Numbers. The Employer Identification Number assigned to the Company (which is the "Plan Sponsor" as that term is used in ERISA) by the Internal Revenue Service is _____. The Plan Number assigned to the Plan by the Plan Sponsor pursuant to the instructions of the Internal Revenue Service is _____.

(b) Ending Date for Plan's Fiscal Year. The date of the end of the fiscal year for the purpose of maintaining the Plan's records is December 31.

(c) Agent for the Service of Legal Process. The agent for the service of legal process with respect to the Plan is:

Alder BioPharmaceuticals, Inc.

11804 North Creek Parkway South
Bothell, WA 98011

In addition, service of legal process may be made upon the Plan Administrator.

(d) Plan Sponsor and Administrator. The "Plan Sponsor" and the "Plan Administrator" of the Plan is:

Randall Schatzman

Alder BioPharmaceuticals, Inc.

11804 North Creek Parkway South
Bothell, WA 98011

The Plan Sponsor's and Plan Administrator's telephone number is (425) 205-2910. The Plan Administrator is the named fiduciary charged with the responsibility for administering the Plan.

IV. Statement of ERISA Rights.

Eligible Employees in this Plan (which is a welfare benefit plan sponsored by Alder BioPharmaceuticals, Inc.) are entitled to certain rights and protections under ERISA. If you are an Eligible Employee, you are considered a participant in the Plan and, under ERISA, you are entitled to:

(e) Receive Information About Your Plan and Benefits

(1) Examine, without charge, at the Plan Administrator's office and at other specified locations, such as worksites, all documents governing the Plan and a copy of the latest annual report (Form 5500 Series), if applicable, filed by the Plan with the U.S. Department of Labor and available at the Public Disclosure Room of the Employee Benefits Security Administration;

(2) Obtain, upon written request to the Plan Administrator, copies of documents governing the operation of the Plan and copies of the latest annual report (Form 5500 Series), if applicable, and an updated (as necessary) Summary Plan Description. The Administrator may make a reasonable charge for the copies; and

(3) Receive a summary of the Plan's annual financial report, if applicable. The Plan Administrator is required by law to furnish each participant with a copy of this summary annual report.

(f) Prudent Actions by Plan Fiduciaries. In addition to creating rights for Plan participants, ERISA imposes duties upon the people who are responsible for the operation of the employee benefit plan. The people who operate the Plan, called "fiduciaries" of the Plan, have a duty to do so prudently and in the interest of you and other Plan participants and beneficiaries. No one, including your employer, your union or any other person, may fire you or otherwise discriminate against you in any way to prevent you from obtaining a Plan benefit or exercising your rights under ERISA.

(g) Enforce Your Rights. If your claim for a Plan benefit is denied or ignored, in whole or in part, you have a right to know why this was done, to obtain copies of documents relating to the decision without charge, and to appeal any denial, all within certain time schedules.

Under ERISA, there are steps you can take to enforce the above rights. For instance, if you request a copy of Plan documents or the latest annual report from the Plan, if applicable, and do not receive them within thirty (30) days, you may file suit in a Federal court. In such a case, the court may require the Plan Administrator to provide the materials and pay you up to $110 a day until you receive the materials, unless the materials were not sent because of reasons beyond the control of the Plan Administrator.

If you have a claim for benefits which is denied or ignored, in whole or in part, you may file suit in a state or Federal court.

If you are discriminated against for asserting your rights, you may seek assistance from the U.S. Department of Labor, or you may file suit in a Federal court. The court will decide who should pay court costs and legal fees. If you are successful, the court may order the person you have sued to pay these costs and fees. If you lose, the court may order you to pay these costs and fees, for example, if it finds your claim is frivolous.

(h) Assistance with Your Questions. If you have any questions about the Plan, you should contact the Plan Administrator. If you have any questions about this statement or about your rights under ERISA, or if you need assistance in obtaining documents from the Plan Administrator, you should contact the nearest office of the Employee Benefits Security Administration, U.S. Department of Labor, listed in your telephone directory or the Division of Technical Assistance and Inquiries, Employee Benefits Security Administration, U.S. Department of Labor, 200 Constitution Avenue N.W., Washington, D.C. 20210. You may also obtain certain publications about your rights and responsibilities under ERISA by calling the publications hotline of the Employee Benefits Security Administration.

Exhibit B

SEPARATION DATE RELEASE

(To be signed and returned on or within 21 days after the Separation Date.)

In exchange for the severance benefits provided to me by Alder BioPharmaceuticals, Inc. (the "**Company**") under the terms of the transition and consulting agreement between me and the Company dated _____, 2019 (the "**Agreement**"), I agree to the terms below.

In exchange for the consideration to which I am not otherwise entitled, as defined in and to be provided to me by the Company under the terms of the Agreement, I hereby generally and completely release the Company and its affiliated, related, parent and subsidiary entities, and each of its and their current and former directors, officers, employees, stockholders, partners, agents, attorneys, predecessors, successors, insurers, affiliates, and assigns (collectively, the "**Released Parties**") from any and all claims, liabilities and obligations, both known and unknown, that arise out of or are in any way related to events, acts, conduct, or omissions occurring prior to or on the date that I sign this Separation Date Release (the "**Release**").

This general release includes, but is not limited to: (i) all claims arising out of or in any way related to my employment with the Company, or the termination of that employment; (ii) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, paid time off, expense reimbursements, severance pay, fringe benefits, stock, stock options, restricted stock units, or any other ownership, equity, or profits interests in the Company; (iii) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (iv) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (v) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys' fees, or other claims arising under the federal Civil Rights Act of 1964, the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act (as amended) (the "**ADEA**"), the Washington Law Against Discrimination (RCW chapter 49.60; WAC 162-04-10, et seq.), the Washington Family Leave Act and the Washington Minimum Wage Act.

Notwithstanding the foregoing, I am not releasing the following claims (the "**Excluded Claims**"): (i) any rights or claims for indemnification I may have pursuant to any written indemnification agreement with the Company to which I am a party or under applicable law; (ii) any rights which cannot be waived as a matter of law; (iii) any rights I have to file or pursue a claim for workers' compensation or unemployment insurance; and (iv) any claims for breach of this Agreement. I understand that nothing in this Agreement limits my ability to file a change or complaint with the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Securities and Exchange Commission ("**SEC**"), the Washington State Human Rights Commission, or any other federal, state, or local government agency or commission (collectively, "**Government Agencies**"). I further understand that this Agreement does not limit my ability to cooperate with, communicate with, or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, (including providing documents or other information without notice to the Company). While this Agreement does not limit my right to receive an award for information provided to the SEC, I understand and agree that, to the maximum extent permitted by law, I am otherwise waiving any and all rights I have to individual relief based on any claims that

I have released and waived by signing this Agreement. I represent and warrant that, other than the Excluded Claims, I am not aware of any claims I have or might have against any of the Released Parties that are not included in the Release herein.

I acknowledge that I am knowingly and voluntarily waiving and releasing any rights I may have under the ADEA. I also acknowledge that the consideration given for this waiver and release is in addition to anything of value to which I am already entitled. I further acknowledge that I have been advised, as required by the ADEA, that: (i) my waiver and release do not apply to any rights or claims that arise after the date I sign this Release; (ii) I should consult with an attorney prior to signing this Release; (c) I have had twenty-one (21) days to consider this Release; (iii) I have seven (7) days following the date I sign this Release to revoke it, with such revocation to be effective only if I deliver written notice of revocation to the Company within the seven-day period; and (iv) the Release will not be effective until the date upon which the revocation period has expired, which will be the eighth day after I sign it (the "**Release Effective Date**").

In giving the release herein, which includes claims which may be unknown to me at present, I hereby expressly waive and relinquish all rights and benefits under any law of any jurisdiction with respect to my release of any unknown or unsuspected claims herein.

I hereby represent that (i) I have been paid all compensation owed and have been paid for all hours worked; (ii) I have received all the leave and leave benefits and protections for which I am eligible, pursuant to the federal Family and Medical Leave Act, the Washington Family Leave Act, or otherwise; and (iii) I have not suffered any on-the-job injury for which I have not already filed a workers' compensation claim. I represent that I have no lawsuits, claims or actions pending in my name, or on behalf of any other person or entity, against the Company or any other person or entity subject to the release granted in this Release. I further acknowledge and understand that the Company may disclose this Release, including without limitation by publicly filing it in connection with any corporate or public disclosure or filing requirements.

By:

John A. Latham, Ph.D.

Date:

Exhibit C

ALDER BIOPHARMACEUTICALS, INC.

PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

In exchange for my becoming employed (or my employment being continued), or retained as a consultant (or my consulting relationship being continued, by Alder BioPharmaceuticals, Inc. or any of its current or future subsidiaries, affiliates, successors or assigns (collectively, the "Company"), and for any cash and equity compensation for my services, I hereby agree as follows:

1. **Duties.** I will perform for the Company such duties as may be designated by the Company from time to time. During my period of employment or consulting relationship with the Company, I will devote my best efforts to the interests of the Company and will not engage in any activities detrimental to the best interests of the Company without the prior written consent of the Company.

2. **Confidentiality Obligation.** I understand and agree that all Proprietary Information (as defined below) shall be the sole property of the Company and its assigns, including all trade secrets, patents, copyrights and other rights in connection therewith. I hereby assign to the Company any rights I may acquire in such Proprietary Information. I will hold in confidence and not directly or indirectly to use or disclose, both during my employment by or consulting relationship with the Company and for a period of three years after its termination (irrespective of the reason for such termination), any Proprietary Information I obtain or create during the period of my employment or consulting relationship, whether or not during working hours, except to the extent authorized by the Company, until such Proprietary Information becomes generally known. I agree not to make copies of such Proprietary Information except as authorized by the Company. Upon termination of my employment or consulting relationship or upon an earlier request of the Company, I will return or deliver to the Company all tangible forms of such Proprietary Information in my possession or control, including but not limited to drawings, specifications, documents, records, devices, models or any other material and copies or reproductions thereof. Notwithstanding anything in this Section 2, pursuant to 18 U.S.C. Section 1833(b), I shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that: (1) is made in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney, and solely for the purpose of reporting or investigating a suspected violation of law; or (2) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

3. **Ownership of Physical Property.** All document, apparatus, equipment and other physical property in any form, whether or not pertaining to Proprietary Information, furnished to me by the Company or produced by me or others in connection with my employment or consulting relationship shall be and remain the sole property of the Company. I shall return to the Company all such documents, materials and property as and when requested by the Company, except only (i) my personal copies of records relating to my compensation, if any; (ii) if applicable, my personal copies of any materials evidencing shares of the Company's capital stock purchased by me and/or options to purchase shares of the Company's capital stock granted to me; (iii) my copy of this Agreement and (iv) my personal property and personal documents I bring with me to the Company and any personal correspondence and personal materials that I accumulate and keep at my office during my employment (my "Personal Documents"). Even if the Company does not so request, I shall return all such documents, materials and property upon termination of my employment or consulting relationship, and, except for my Personal Documents, I will not take with me any such documents, material or property or any reproduction thereof upon such termination.

4. **Assignment of Inventions.**

(a) Without further compensation, I hereby agree promptly to disclose to the Company, all Inventions (as defined below) which I may solely or jointly develop or reduce to practice during the period of my employment or consulting relationship with the Company which (i) pertain to any line of business activity of the Company, (ii) are aided by the use of time, material or facilities of the Company, whether or not during working hours or (iii) relate to any of my work during the period of my employment or consulting relationship with the Company,

whether or not during normal working hours ("Company Inventions"). During the term of my employment or consultancy, all Company Inventions that I conceive, reduce to practice, develop or have developed (in whole or in part, either alone or jointly with others) shall be the sole property of the Company and its assigns to the maximum extent permitted by law (and to the fullest extent permitted by law shall be deemed "works made for hire"), and the Company and its assigns shall be the sole owner of all patents, copyrights, trademarks, trade secrets and other rights in connection therewith. I hereby assign to the Company any rights that I may have or acquire in such Company Inventions.

(b) I attach hereto as Exhibit A a complete list of all Inventions, if any, made by me prior to my employment or consulting relationship with the Company that are relevant to the Company's business, and I represent and warrant that such list is complete. If no such list is attached to this Agreement, I represent that I have no such Inventions at the time of signing this Agreement. If in the course of my employment or consultancy (as the case may be) with the Company, I use or incorporate into a product or process an Invention not covered by Section 4(a) of this Agreement in which I have an interest, the Company is hereby granted a nonexclusive, fully paid-up, royalty-free, perpetual, worldwide license of my interest to use and sublicense such Invention without restriction of any kind.

NOTICE REQUIRED BY REVISED CODE OF WASHINGTON 49.44.140:

Any assignment of Inventions required by this Agreement does not apply to an Invention for which no equipment, supplies, facility or trade secret information of the Company was used and which was developed entirely on the employee's own time, unless (a) the Invention relates (i) directly to the business of the Company or (ii) to the Company's actual or demonstrably anticipated research or development or (b) the Invention results from any work performed by the employee for the Company.

5. **Further Assistance; Power of Attorney.** I agree to perform, during and after my employment or consulting relationship, all acts deemed necessary or desirable by the Company to permit and assist it, at its expense, in obtaining and enforcing the full benefits, enjoyment, rights and title throughout the world in the Inventions assigned to the Company as set forth in Section 4 above. Such acts may include, but are not limited to, execution of documents and assistance or cooperation in legal proceedings. I hereby irrevocably designate the Company and its duly authorized officers and agents as my agent and attorney-in fact, to execute and file on my behalf any such applications and to do all other lawful acts to further the prosecution and issuance of patents, copyright and mask work registrations related to such Inventions. This power of attorney shall not be affected by my subsequent incapacity.

6. **Inventions.** As used in this Agreement, the term "Inventions" means discoveries, developments, concepts, designs, ideas, know-how, improvements, inventions, trade secrets and/or original works of authorship, whether or not patentable, copyrightable or otherwise legally protectable. This includes, but is not limited to, any new product, machine, article of manufacture, biological material, method, procedure, process, technique, use, equipment, device, apparatus, system, compound, formulation, composition of matter, design or configuration of any kind, or any improvement thereon.

7. **Proprietary Information.** As used in this Agreement, the term "Proprietary Information" means information or physical material not generally known or available outside the Company or information or physical material entrusted to the Company by third parties. This includes, but is not limited to, Inventions, confidential knowledge, copyrights, product ideas, techniques, processes, formulas, object codes, biological materials, mask works and/or any other information of any type relating to documentation, laboratory notebooks, data, schematics, algorithms, flow charts, mechanisms, research, manufacture, improvements, assembly, installation, marketing, forecasts, sales, pricing, customers, the salaries, duties, qualifications, performance levels and terms of compensation of other employees, and/or cost or other financial data concerning any of the foregoing or the Company and its operations. Proprietary Information may be contained in material such as drawings, samples, procedures, specifications, reports,

studies, customer or supplier lists, budgets, cost or price lists, compilations or computer programs, or may be in the nature of unwritten knowledge or know-how.

8. **Solicitation of Employees, Consultants and Other Parties.** During the term of my employment or consulting relationship with the Company, and for a period of one year following the termination of my relationship with the Company for any reason, I will not directly or indirectly solicit, induce, recruit or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for myself or any other person or entity. For a period of one year following termination of my relationship with the Company for any reason, I shall not solicit any licensor to or customer of the Company or licensee of the Company's products, that are known to me, with respect to any business, products or services that are competitive to the products or services offered by the Company or under development as of the date of termination of my relationship with the Company.

9. **Noncompetition.** During the term of my employment or consulting relationship with the Company and for one year following the termination of my relationship with the Company for any reason, I will not, without the Company's prior written consent, directly or indirectly work on any products or services that are competitive with products or services (a) being commercially developed or exploited by the Company during my employment or consultancy and (b) on which I worked or about which I learned Proprietary Information during my employment or consultancy with the Company.

10. **No Conflicts.** I represent that my performance of all the terms of this Agreement as an employee of or consultant to the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my becoming an employee or consultant of the Company, and I will not disclose to the Company, or induce the Company to use, any confidential or proprietary information or material belonging to any previous employer or others. I agree not to enter into any written or oral agreement that conflicts with the provisions of this Agreement.

11. **No Interference.** I certify that, to the best of my information and belief, I am not a party to any other agreement which will interfere with my full compliance with this Agreement.

12. **Effects of Agreement.** This Agreement (a) shall survive for a period of five years beyond the termination of my employment by or consulting relationship with the Company, (b) inures to the benefit of successors and assigns of the Company and (c) is binding upon my heirs and legal representatives.

13. **At-Will Relationship.** I understand and acknowledge that my employment or consulting relationship with the Company is and shall continue to be at-will, as defined under applicable law, meaning that either I or the Company may terminate the relationship at any time for any reason or no reason, without further obligation or liability.

14. **Injunctive Relief.** I acknowledge that violation of this Agreement by me may cause irreparable injury to the Company, and I agree that the Company will be entitled to seek extraordinary relief in court, including, but not limited to, temporary restraining orders, preliminary injunctions and permanent injunctions without the necessity of posting a bond or other security and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

15. **Miscellaneous.** This Agreement supersedes any oral, written or other communications or agreements concerning the subject matter of this Agreement, and may be amended or waived only by a written instrument signed by me and the Chief Executive Officer of the Company. This Agreement shall be governed by the laws of the State of Washington applicable to contracts entered into and performed entirely within the State of Washington, without giving effect to principles of conflict of laws. If any provision of this Agreement is held to be unenforceable under applicable law, then such provision shall be excluded from this Agreement only to the extent unenforceable, and the remainder of such provision and of this Agreement shall be enforceable in accordance with its terms.

16. **Acknowledgment.** I certify and acknowledge that I have carefully read all of the provisions of this Agreement and that I understand and will fully and faithfully comply with such provisions.

Alder BioPharmaceuticals, Inc.	**Employee**
By: /s/ Randall C. Schatzman	/s/ John A. Latham
Randall C. Schatzman	Name: John A. Latham
Title: President and CEO	
Dated: August 16, 2004	Dated: August 16, 2004

Exhibit A

Alder BioPharmaceuticals, Inc.

c/o Seattle Genetics, Inc.

21823 30th Drive S.E.

Bothell, WA 98021

Ladies and Gentlemen:

1. The following is a complete list of all Inventions relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me, alone or jointly with others or which has become known to me prior to my employment by the Company. I represent that such list is complete.

Patent: Methods of Synthesizing hetero-multimeric polypeptides in yeast application using a haploid mating strategy

2. I propose to bring to my employment or consultancy the following materials and documents of a former employer:

No materials or documents.

X See below:

By: /s/ John A. Latham
John A. Latham

(1) Scientific literature surrounding topics in: Medicine, Pathology, Biochemistry, Cell Biology, Immunology, Organic Chemistry

Exhibit 10.5

Alder BioPharmaceuticals, Inc. Non-Employee Director Compensation Information

Pursuant to our non-employee director compensation policy, as most recently amended in March 2019, we compensate our non-employee directors with an annual cash retainer. Each such director receives an annual base cash retainer of $40,000 for such service, to be paid monthly. The non-executive chair of our Board of Directors receives an additional annual base cash retainer of $30,000 for such service, to be paid monthly.

The policy also provides that we compensate the members of our Board of Directors for service on our committees as follows:

- The chair of our Audit Committee receives an annual cash retainer of $20,000 for such service, paid monthly, and each of the other members of the Audit Committee receives an annual cash retainer of $10,000, paid monthly.
- The chairperson of our Compensation Committee receives an annual cash retainer of $15,000 for such service, paid monthly, and each of the other members of the Compensation Committee receives an annual cash retainer of $7,000, paid monthly.
- The chairperson of our Nominating and Corporate Governance Committee receives an annual cash retainer of $10,000 for such service, paid monthly, and each of the other members of the Nominating and Corporate Governance Committee receives an annual cash retainer of $7,000, paid monthly.

The policy further provides for the grant of equity awards as follows:

- Upon a non-employee director's election to our Board of Directors, such director will receive an option to purchase 45,000 shares of our common stock. One-third of the shares subject to each stock option will vest on the one-year anniversary of the date of grant, one-third of the shares subject to each stock option will vest on the two-year anniversary of the date of grant and one-third of the shares subject to each stock option will vest on the three year anniversary of the date of grant, such that the option is fully vested on the third anniversary of the date of grant, subject to the director's continued service through each such vesting date and will vest in full upon a change in control.
- On the date of each annual meeting of stockholders, each non-employee director will receive an option to purchase an additional 22,500 shares of our common stock.

Each of these options will be granted with an exercise price equal to the fair market value of our common stock on the date of such grant.

Exhibit 31.1

CERTIFICATIONS

I, Robert W. Azelby, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Alder BioPharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 2, 2019

/s/ Robert W. Azelby

Robert W. Azelby
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Carlos E. Campoy, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Alder BioPharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 2, 2019

/s/ Carlos E. Campoy
Carlos E. Campoy
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Robert W. Azelby, President and Chief Executive Officer of Alder BioPharmaceuticals, Inc. (the "Company"), and Carlos E. Campoy, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Quarterly Report on Form 10-Q for the period ended March 31, 2019, to which this Certification is attached as Exhibit 32.1 (the "Periodic Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 2nd day of May, 2019.

/s/ Robert W. Azelby
Robert W. Azelby
President and Chief Executive Officer
(Principal Executive Officer)

/s/ Carlos E. Campoy
Carlos E. Campoy
Chief Financial Officer
(Principal Financial Officer)

"This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Alder BioPharmaceuticals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing."