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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2018

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 001-37345

ADURO BIOTECH, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	**94-3348934**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

740 Heinz Avenue
Berkeley, California 94710
(Address of principal executive offices including zip code)

Registrant's telephone number, including area code: (510) 848-4400

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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	☐ (Do not check if a small reporting company)	Small 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 ☒

The number of shares of Registrant's Common Stock outstanding as of July 27, 2018 was 79,059,764.

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In this Quarterly Report on Form 10-Q, "we," "our," "us," "Aduro" and the "Company" refer to Aduro Biotech, Inc. and its consolidated subsidiaries. Aduro, Aduro Biotech, the Aduro logo and other trade names, trademarks or service marks of Aduro are the property of Aduro Biotech, Inc. This report contains references to our trademarks and to trademarks belonging to other entities. Trade names, trademarks and service marks of other companies appearing in this report are the property of their respective holders. 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 (unaudited)

ADURO BIOTECH, INC.
Condensed Consolidated Balance Sheets
(In thousands, except share and per share amounts)
(Unaudited)

	June 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 114,401	$ 157,614
Short-term marketable securities	174,711	168,489
Accounts receivable	1,042	989
Income tax receivable	17,495	17,495
Prepaid expenses and other current assets	4,606	5,544
Total current assets	312,255	350,131
Long-term marketable securities	16,783	23,614
Property and equipment, net	30,331	31,085
Goodwill	8,506	8,723
Intangible assets, net	30,044	31,107
Restricted cash	468	468
Total assets	$ 398,387	$ 445,128
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 992	$ 1,150
Accrued clinical trial and manufacturing expenses	4,110	5,898
Accrued expenses and other liabilities	8,801	12,601
Contingent consideration	6,799	6,829
Deferred revenue	17,613	14,923
Total current liabilities	38,315	41,401
Deferred rent	10,955	9,991
Contingent consideration	947	759
Deferred revenue	164,586	148,148
Deferred tax liabilities	6,319	6,538
Other long-term liabilities	831	818
Total liabilities	221,953	207,655
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 10,000,000 shares authorized; and no shares issued and outstanding at June 30, 2018 and December 31, 2017	—	—
Common stock, $0.0001 par value; 300,000,000 shares authorized; and 79,059,764 and 77,736,201 shares issued and outstanding at June 30, 2018 and December 31, 2017	8	8
Additional paid-in capital	530,312	519,435
Accumulated other comprehensive income	1,179	1,893
Accumulated deficit	(355,065)	(283,863)
Total stockholders' equity	176,434	237,473
Total liabilities and stockholders' equity	$ 398,387	$ 445,128

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

ADURO BIOTECH, INC.
Condensed Consolidated Statements of Operations
(In thousands, except share and per share amounts)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenue:				
Collaboration and license revenue	$ 2,639	$ 5,876	$ 9,266	$ 9,648
Grant revenue	—	41	—	41
Total revenue	2,639	5,917	9,266	9,689
Operating expenses:				
Research and development	19,420	21,440	39,547	42,011
General and administrative	8,827	8,245	17,872	16,523
Amortization of intangible assets	147	136	299	268
Total operating expenses	28,394	29,821	57,718	58,802
Loss from operations	(25,755)	(23,904)	(48,452)	(49,113)
Interest income	1,340	780	2,539	1,430
Other loss, net	(20)	(64)	(36)	(68)
Loss before income tax	(24,435)	(23,188)	(45,949)	(47,751)
Income tax benefit	38	3,788	59	6,540
Net loss	$ (24,397)	$ (19,400)	$ (45,890)	$ (41,211)
Net loss per common share, basic and diluted	$ (0.31)	$ (0.27)	$ (0.59)	$ (0.59)
Shares used in computing net loss per common share, basic and diluted	78,817,840	71,101,336	78,364,914	69,679,746

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

ADURO BIOTECH, INC.
Condensed Consolidated Statements of Comprehensive Loss
(In thousands)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Net loss	$ (24,397)	$ (19,400)	$ (45,890)	$ (41,211)
Other comprehensive income (loss):				
Unrealized gain/(loss) on marketable securities	53	25	(96)	2
Foreign currency translation adjustments	(1,495)	1,925	(618)	2,290
Comprehensive loss	$ (25,839)	$ (17,450)	$ (46,604)	$ (38,919)

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

ADURO BIOTECH, INC.
Condensed Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2018	2017
Cash Flows from Operating Activities		
Net loss	$ (45,890)	$ (41,211)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	2,178	1,659
Amortization of intangible assets	299	268
Accretion of discounts and amortization of premiums on marketable securities	(519)	497
Stock-based compensation	9,251	7,985
Loss from remeasurement of fair value of contingent consideration	360	1,636
Loss on disposal of property and equipment	3	5
Deferred income tax	(59)	1,272
Changes in operating assets and liabilities:		
Accounts receivable	(52)	(2,238)
Prepaid expenses and other assets	1,540	(5,832)
Accounts payable	(669)	607
Deferred revenue	(6,184)	(7,514)
Accrued clinical trial and manufacturing expenses	(1,740)	(576)
Accrued expenses and other liabilities	(3,464)	(670)
Net cash used in operating activities	(44,946)	(44,112)
Cash Flows from Investing Activities		
Purchase of marketable securities	(155,142)	(140,626)
Proceeds from maturities of marketable securities	156,174	233,678
Purchase of property and equipment	(825)	(1,453)
Proceeds from sale of property and equipment	4	—
Net cash provided by investing activities	211	91,599
Cash Flows from Financing Activities		
Proceeds from the issuance of common stock, net of issuance costs	—	60,467
Proceeds from employee stock purchase plan	366	494
Proceeds from exercise of stock options and warrants	1,260	435
Net cash provided by financing activities	1,626	61,396
Effect of exchange rate changes	(104)	—
Net (decrease) increase in cash, cash equivalents, and restricted cash	(43,213)	108,883
Cash, cash equivalents, and restricted cash at beginning of period	158,082	75,400
Cash, cash equivalents, and restricted cash at end of period	$ 114,869	$ 184,283
Supplemental Disclosure of Cash Flow Information		
Cash paid for taxes	$ —	$ 850
Supplemental Disclosure of Non-Cash Investing and Financing Activities		
Purchase of property and equipment in accounts payable and accrued liabilities	$ 652	$ 219
Reconciliation of Cash, Cash Equivalents and Restricted Cash		
Cash and cash equivalents	$ 114,401	183,815
Restricted cash	468	468
Total cash, cash equivalents and restricted cash	$ 114,869	$ 184,283

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

1. Organization and Nature of Business

Aduro Biotech, Inc., and its wholly owned subsidiaries, or the Company, is an immunotherapy company focused on the discovery, development and commercialization of therapies that transform the treatment of challenging diseases, including cancer. The Company is located in Berkeley, California and its wholly-owned subsidiary, Aduro Biotech Holdings, Europe B.V., or Aduro Biotech Europe, is based in the Netherlands. The Company operates in one business segment.

The Company believes its technologies are uniquely positioned to recruit and direct the immune system by activating cancer-fighting immune cells and inhibiting immune suppressive cells known to allow tumor growth. Product candidates from the Company's STING and B-select monoclonal antibody technology platforms and personalized, neoantigen-based LADD program are designed to stimulate and/or regulate innate and adaptive immune responses. The Company's diverse technology platforms have led to a strong pipeline of clinical and preclinical candidates, which are being developed for a number of cancer indications. Further, the Company believes that many of its product candidates are combinable with other conventional and novel treatment options, leveraging potential synergies between Aduro's agents and other therapies with established activity. The Company is also collaborating with leading global pharmaceutical companies to expand its products and technology platforms.

2. Basis of Presentation, Use of Estimates and Recent Accounting Pronouncements

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP, and follow the requirements of the Securities and Exchange Commission, or the SEC, for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by U.S. GAAP have been condensed or omitted, and accordingly the balance sheet as of December 31, 2017 has been derived from audited consolidated financial statements at that date but does not include all of the information required by U.S. GAAP for complete financial statements. These financial statements have been prepared on the same basis as the Company's annual financial statements and, in the opinion of management, reflect all adjustments (consisting only of normal recurring adjustments) that are necessary for a fair presentation of the Company's financial information. The results of operations for the three and six months ended June 30, 2018 are not necessarily indicative of the results to be expected for the year ending December 31, 2018 or for any other interim period or for any other future year.

The accompanying condensed consolidated financial statements and related financial information should be read in conjunction with the audited consolidated financial statements and the related notes thereto for the year ended December 31, 2017 included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 1, 2018.

The consolidated financial statements include the accounts of Aduro Biotech, Inc. and its wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities and reported amounts of revenue and expenses in the financial statements and accompanying notes. On an ongoing basis, management evaluates its estimates, including those related to revenue recognition, clinical trial accruals, contingent consideration, income taxes and stock-based compensation. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from these estimates.

Revenue Recognition

The Company recognizes revenue when its customers obtain control of the promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services.

Collaboration and license revenue

The Company's collaboration agreements may include the transfer of intellectual property rights in the form of licenses, obligations to provide research and development services and obligations to participate on certain development committees with the collaboration party. The terms of such agreements include payment to the Company of one or more of the following: nonrefundable upfront fees, payment for research and development services, development, regulatory and commercial milestone payments, and royalties on net sales of licensed products. The Company assesses whether the promises in these agreements are considered distinct performance obligations that should be accounted for separately. Judgment is required to determine whether the license to the Company's intellectual property is distinct from the research and development services or participation on development committees.

The transaction price in each agreement is allocated to the identified performance obligations based on the standalone selling price, or SSP, of each distinct performance obligation. Judgment is required to determine SSP. In instances where SSP is not directly observable, such as when a license or service is not sold separately, SSP is determined using information that may include market conditions and other observable inputs. Due to the early stage of the Company's licensed technology, the license of such technology is typically combined with the research and development services and committee participation as one performance obligation.

Revenue associated with nonrefundable upfront license fees where the license fees and research and development services cannot be accounted for as separate performance obligations is deferred and recognized as revenue over the expected period of performance using a cost-based input methodology. The Company utilizes judgment to assess the pattern of delivery of the performance obligation.

At the inception of each agreement that includes development, regulatory or commercial milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant reversal of cumulative revenue would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received or the underlying activity has been completed. The transaction price is then allocated to each performance obligation in the agreement based on relative SSP. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of each such milestone and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Contract Balances

Upfront payments and fees are recorded as deferred revenue upon receipt or when due, and may require deferral of revenue recognition to a future period until the Company performs its obligations under these arrangements. Amounts payable to the Company are recorded as accounts receivable when the Company's right to consideration is unconditional.

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2016-02, Leases (Topic 842), which establishes a comprehensive new lease accounting model. The new standard: (a) clarifies the definition of a lease; (b) requires a dual approach to lease classification similar to current lease classifications; and (c) causes lessees to recognize leases on the balance sheet as a lease liability with a corresponding right-of-use asset for leases with a lease-term of more than twelve months. The new standard is effective for fiscal years and interim periods beginning after December 15, 2018 and requires modified retrospective application. Early adoption is permitted. In preparation for adoption of the standard, the Company engaged a third-party service provider to assist the Company with the evaluation. The Company continues to evaluate the overall impact the adoption of this new guidance will have on the Company's consolidated financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326). The standard changes how entities will measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. Financial assets measured at amortized cost will be presented at the net amount expected to be collected by using an allowance for credit losses. The standard is effective for fiscal years and interim periods beginning after December 15, 2019. Early adoption is permitted for all periods beginning after December 15, 2018. The Company has evaluated the impact of this guidance and has concluded that adoption of the standard will not have a material impact on its consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, Income Statement-Reporting Comprehensive Income (Topic 220). The standard update allows for a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. Consequently, the ASU 2018-02 eliminates the stranded tax effects resulting from the Tax Cuts and Jobs Act. The new standard is effective for fiscal years and interim periods beginning after December 15, 2018. Early adoption is permitted, including adoption in any interim period for reporting periods for which financial statements have not yet

been issued. The new standard should be applied either in the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act is recognized. The Company has evaluated the impact of this guidance and has concluded that adoption of the standard will not have a material impact on its consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07 – Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Shared-Based Payment Accounting. The standard update expands the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. The new standard is effective for fiscal years and interim periods beginning after December 15, 2018. Early adoption is permitted, but no earlier than an entity's adoption date of Topic 606. The Company is currently evaluating the impact that the standard will have on its consolidated financial statements.

Recently Adopted Accounting Pronouncements

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments--Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, which amends the guidance in U.S. GAAP on the classification and measurement of financial instruments. In February 2018, the FASB issued ASU No. 2018-03 which provides additional clarification and implementation guidance on the previously issued ASU No. 2016-01. Changes to the current guidance primarily affect the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. In addition, the ASU clarifies guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. The new standard is effective for fiscal years and interim periods beginning after December 15, 2017, and upon adoption, an entity should apply the amendments by means of a cumulative-effect adjustment to the balance sheet at the beginning of the first reporting period in which the guidance is effective. The Company adopted this ASU on January 1, 2018. The adoption of the standard did not have a material impact on its condensed consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). This ASU as well as its related amendments affect any entity that either enters into contracts with customers to transfer goods and services or enters into contracts for the transfer of nonfinancial assets. ASU 2014-09 replaced most existing revenue recognition guidance in U.S. GAAP when it became effective. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which it expects to be entitled in exchange for those goods or services. The Company adopted this standard on January 1, 2018 using the modified retrospective method. The Company recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of its accumulated deficit. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

As a result, the Company changed its accounting policy for revenue recognition, and the details of the significant changes and quantitative impact of the changes are disclosed below.

Milestone payments – under the milestone method ASC 605-28, payments that were contingent upon the achievement of a substantive milestone were recognized entirely as revenue in the period in which the milestone was achieved. To the extent that non-substantive milestones were achieved and the Company had remaining performance obligations, milestones were deferred and recognized as revenue over the estimated remaining period of performance. If there were no remaining performance obligations, the revenue from non-substantive milestones was recognized in the period it was earned. The milestone method no longer exists under the new revenue standard. The revenue from the milestone payments must be estimated using either the expected value method or the most likely amount method. Revenue that is not probable of significant reversal of cumulative revenue is included in the transaction price. Therefore, substantive milestones that were recognized when achieved under the legacy revenue guidance will be recognized as revenue over the performance period under the new standard with a cumulative catch-up recorded for the portion associated with the performance to date.

Pattern of revenue recognition – the Company recognized revenue from performance obligations delivered over time, such as licenses combined with research and development services and participation on development committees, on a straight-line basis over the period of performance under the legacy revenue guidance. The new standard allows entities to use either an input method or an output method to measure progress toward complete satisfaction of a performance obligation. For contracts in progress at the adoption date of the new standard the Company determined that the input method of measuring costs incurred to date compared to total estimated costs to be incurred under the contract most accurately depicts its performance.

The change in the pattern of revenue recognition upon adoption of Topic 606 for milestone payments and performance obligations delivered over time resulted in an increase in the balance of deferred revenue and an increase in the accumulated deficit balance of $25.3 million on January 1, 2018.

The following table summarizes the impact of adopting Topic 606 on select unaudited condensed consolidated balance sheet line items (in thousands):

	June 30, 2018		
	As reported	Adjustments	Balances without the adoption of Topic 606
		(in thousands)	
Liabilities			
Deferred revenue	$ 17,613	$ (1,185)	$ 16,428
Deferred revenue – noncurrent	164,586	(25,432)	139,154
Stockholders' Equity			
Accumulated deficit	(355,065)	26,617	(328,448)

The following table summarizes the impact of adopting Topic 606 on select unaudited condensed consolidated statement of operations line items (in thousands, except per share data):

	Three Months Ended June 30, 2018			Six Months Ended June 30, 2018		
	As reported	Adjustments	Balances without the adoption of Topic 606	As reported	Adjustments	Balances without the adoption of Topic 606
				(in thousands)		
Collaboration and license revenue	$ 2,639	$ 1,185	$ 3,824	$ 9,266	$ 1,305	$ 10,571
Total revenue	2,639	1,185	3,824	9,266	1,305	10,571
Loss from operations	(25,755)	1,185	(24,570)	(48,452)	1,305	(47,147)
Net loss	(24,397)	1,185	(23,212)	(45,890)	1,305	(44,585)
Net loss per share, basic and diluted						

The following table summarizes the impact of adopting Topic 606 on select unaudited condensed consolidated statement of cash flows line items (in thousands):

	Six Months Ended June 30, 2018		
	As reported	Adjustments	Balances without the adoption of Topic 606
		(in thousands)	
Cash flows from operating activities			
Net loss	$ (45,890)	$ 1,305	$ (44,585)
Changes in operating assets and liabilities:			
Deferred revenue	(6,184)	(1,305)	(7,489)

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. ASU 2016-15 identifies how certain cash receipts and cash payments are presented and classified in the Statement of Cash Flows. The standard is effective for fiscal years and interim periods beginning after December 15, 2017. The standard should be applied retrospectively and early adoption is permitted, including adoption in an interim period. The Company adopted this standard on January 1, 2018 and the adoption of the standard did not have a material impact on its condensed consolidated statement of cash flows.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. ASU 2016-18 requires that the statement of cash flows explain the change during the period in the total cash, cash equivalents, and restricted cash. The standard is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. This standard should be applied retrospectively and early adoption is permitted, including adoption in an interim period. The Company adopted this standard on January 1, 2018 utilizing the required retrospective transition method and changed the presentation and classification of restricted cash in its condensed consolidated statement of cash flows.

In May 2017, the FASB issued ASU No. 2017-09, Compensation – Stock Compensation (Topic 718): Scope of Modification Accounting. ASU 2017-09 provides clarity and reduces the complexity of applying the guidance in Topic 718, Compensation – Stock Compensation, to a change to the terms or conditions of a share-based payment award. This standard is effective for annual periods beginning after December 15, 2017. The Company adopted this ASU on January 1, 2018; the adoption of the standard did not have a material impact on its condensed consolidated financial statements.

In March 2018, the FASB issued ASU No. 2018-05, Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118, which included amendments to expand income tax accounting and disclosure guidance pursuant to SEC Staff Accounting Bulletin No. 118 ("SAB 118") issued by the SEC in December 2017. SAB 118 provides guidance on accounting for the income tax effects of the Tax Reform Act. The Company adopted this ASU in the first quarter of 2018. Refer to Note 10 Income Taxes for more information and disclosures related to this amended guidance.

3. Fair Value Measurements

The carrying amounts of certain of the Company's financial instruments, including cash equivalents, accounts receivable and accounts payable, approximate their fair values due to their short maturities. Assets and liabilities recorded at fair value on a recurring basis in the balance sheets, as well as assets and liabilities measured at fair value on a non-recurring basis or disclosed at fair value, are categorized based upon the level of judgment associated with inputs used to measure their fair values. The accounting guidance for fair value provides a framework for measuring fair value and requires certain disclosures about how fair value is determined. Fair value is defined as the price that would be received upon the sale of an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the measurement date. The accounting guidance also establishes a three-level valuation hierarchy that prioritizes the inputs to valuation techniques used to measure fair value based upon whether such inputs are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect market assumptions made by the reporting entity. The three-level hierarchy for the inputs to valuation techniques is briefly summarized as follows:

Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;

Level 2—Inputs are observable, unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and

Level 3—Unobservable inputs that are significant to the measurement of the fair value of the assets or liabilities that are supported by little or no market data.

The Company's cash equivalents, which include money market funds, are classified as Level 1 because they are valued using quoted market prices. The Company's marketable securities consist of available-for-sale securities and are generally classified as Level 2 because their value is based on valuations using significant inputs derived from or corroborated by observable market data.

In certain cases where there is limited activity or less transparency around the inputs to valuation, financial instruments are classified as Level 3. Level 3 liabilities consist of the contingent consideration liability.

The following table sets forth the Company's financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	June 30, 2018			
	Level 1	Level 2	Level 3	Total
Financial Assets:				
Money market funds	$ 20,167	$ —	$ —	$ 20,167
U.S. government and agency securities	—	87,965	—	87,965
Corporate debt securities	—	67,033	—	67,033
Commercial paper	—	105,547	—	105,547
Total	$ 20,167	$ 260,545	$ —	$ 280,712
Financial Liabilities:				
Contingent consideration related to acquisition	$ —	$ —	$ 7,746	$ 7,746
Total	$ —	$ —	$ 7,746	$ 7,746

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Financial Assets:				
Money market funds	$ 86,461	$ —	$ —	$ 86,461
U.S. government and agency securities	—	108,076	—	108,076
Corporate debt securities	—	58,496	—	58,496
Commercial paper	—	74,011	—	74,011
Total	$ 86,461	$ 240,583	$ —	$ 327,044
Financial Liabilities:				
Contingent consideration related to acquisition	$ —	$ —	$ 7,588	$ 7,588
Total	$ —	$ —	$ 7,588	$ 7,588

The acquisition-date fair value of the contingent consideration liability represents the future consideration that is contingent upon the achievement of specified development milestones for a product candidate. The fair value of the contingent consideration is based on the Company's probability-weighted discounted cash flow assessment that considers probability and timing of future payments. The fair value measurement is based on significant Level 3 inputs such as anticipated timelines and probability of achieving development milestones. Changes in the fair value of the liability for contingent consideration, except for the impact of foreign currency, will be recognized as research and development expense in the condensed consolidated statements of operations until settlement.

The Company did not have any financial assets and liabilities measured at fair value on a non-recurring basis as of June 30, 2018 and December 31, 2017. There were no transfers between the fair value measurement category levels during any of the periods presented.

The following table sets forth a summary of the changes in the fair value of the Company's Level 3 financial liabilities (in thousands):

	Contingent Consideration
Balance at December 31, 2017	$ 7,588
Net change in fair value upon remeasurement	356
Foreign currency impact on contingent consideration	(198)
Balance at June 30, 2018	$ 7,746

The following tables summarize the estimated value of the Company's cash, cash equivalents and marketable securities and the gross unrealized holding gains and losses (in thousands):

	June 30, 2018			
	Amortized cost	Unrealized gains	Unrealized losses	Estimated Fair Value
Cash and cash equivalents:				
Cash	$ 25,183	$ —	$ —	$ 25,183
Money market funds	20,167	—	—	20,167
Commercial paper	69,051	—	—	69,051
Total cash and cash equivalents	$ 114,401	$ —	$ —	$ 114,401
Marketable securities:				
U.S. government and agency securities	$ 88,266	$ —	$ (301)	$ 87,965
Corporate debt securities	67,124	—	(91)	67,033
Commercial paper	36,496	—	—	36,496
Total marketable securities	$ 191,886	$ —	$ (392)	$ 191,494

	December 31, 2017			
	Amortized cost	Unrealized gains	Unrealized losses	Estimated Fair Value
Cash and cash equivalents:				
Cash	$ 22,673	$ —	$ —	$ 22,673
Money market funds	86,461	—	—	86,461
Commercial paper	48,480	—	—	48,480
Total cash and cash equivalents	$ 157,614	$ —	$ —	$ 157,614
Marketable securities:				
U.S. government and agency securities	$ 108,317	$ —	$ (241)	$ 108,076
Corporate debt securities	58,551	1	(56)	58,496
Commercial paper	25,531	—	—	25,531
Total marketable securities	$ 192,399	$ 1	$ (297)	$ 192,103

The amortized cost and estimated fair value of the Company's available-for-sale marketable securities by contractual maturity are summarized below as of June 30, 2018 (in thousands):

	Amortized cost	Estimated Fair Value
Mature in one year or less	$ 175,000	$ 174,711
Mature after one year through two years	16,886	16,783
Total available-for-sale marketable securities	$ 191,886	$ 191,494

4. Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consisted of the following (in thousands):

	June 30, 2018	December 31, 2017
Leasehold improvements	$ 26,965	$ 27,102
Lab equipment	7,906	7,243
Computer and office equipment	2,169	2,016
Furniture	1,797	1,767
Construction in progress	914	54
Total property and equipment	39,751	38,182
Less: accumulated depreciation	(9,420)	(7,097)
Property and equipment, net	$ 30,331	$ 31,085

Depreciation expense was $1.1 million and $0.8 million for the three months ended June 30, 2018 and 2017, respectively, and $2.2 million and $1.7 million for the six months ended June 30, 2018 and 2017, respectively.

Accrued Expenses and Other Liabilities

Accrued expenses and other liabilities consisted of the following (in thousands):

	June 30, 2018	December 31, 2017
Compensation and related benefits	$ 2,814	$ 5,320
Professional and consulting services	2,614	1,586
Accrued research expense	1,359	1,763
Accrued property and equipment	652	2,790
Deferred rent	557	434
Other	805	708
Total accrued expenses and other liabilities	$ 8,801	$ 12,601

5. Goodwill and Intangible Assets

Goodwill

The gross carrying amount of goodwill was as follows (in thousands):

Balance at December 31, 2017	$ 8,723
Foreign currency translation adjustment	(217)
Balance at June 30, 2018	$ 8,506

Intangible assets

The gross carrying amounts and net book value of intangible assets were as follows (in thousands):

	June 30, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Intangible assets with finite lives:			
License agreement	$ 11,552	$ 1,540	$ 10,012
Total intangible assets with finite lives	11,552	1,540	10,012
Acquired IPR&D assets	20,032	—	20,032
Total intangible assets	$ 31,584	$ 1,540	$ 30,044

	December 31, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Intangible assets with finite lives:			
License agreement	$ 11,847	$ 1,283	$ 10,564
Total intangible assets with finite lives	11,847	1,283	10,564
Acquired IPR&D assets	20,543	—	20,543
Total intangible assets	$ 32,390	$ 1,283	$ 31,107

Intangible assets are carried at cost less accumulated amortization. The license agreement is being amortized over a period of 20 years and the amortization expense is recorded in operating expenses. The decrease in the gross carrying amount of intangible assets as of June 30, 2018 compared to December 31, 2017 reflects the impact of foreign currency exchange.

Amortization expense was $147,000 and $136,000 for the three months ended June 30, 2018 and 2017, respectively, and $299,000 and $268,000 for the six months ended June 30, 2018 and 2017, respectively. Based on finite-lived intangible assets recorded as of June 30, 2018, the estimated future amortization expense is as follows (in thousands):

Year Ending December 31,	Estimated Amortization Expense
2018 (remaining six months)	$ 289
2019	578
2020	578
2021	578
2022	578
2023	578

6. Collaboration Agreements

Novartis Agreement

In March 2015, the Company entered into a collaboration and license agreement with Novartis Pharmaceuticals Corporation, or Novartis, pursuant to which the Company is collaborating worldwide with Novartis regarding the development and potential commercialization of product candidates containing an agonist of the molecular target known as STING in the field of oncology, including immuno-oncology and cancer vaccines. Under this agreement, or the Novartis Agreement, the Company granted Novartis a

co-exclusive license to develop such products worldwide, an exclusive license to commercialize such products outside the United States and a non-exclusive license to support the Company in commercializing such products in the United States if it requests such support. The collaboration is guided by a joint steering committee with each party having final decision-making authority regarding specified areas of development or commercialization.

Under the Novartis Agreement, the Company received an upfront payment of $200.0 million in April 2015. During the second quarter of 2016, the Company received a $35.0 million development milestone upon initiation of a Phase 1 trial for the first STING product candidate, ADU-S100. The Company also received reimbursement of research and development costs from Novartis of $1.3 million since inception through June 30, 2018. The Company is eligible to receive up to an additional $215.0 million in development milestones and up to an additional $250.0 million in regulatory approval milestones.

The Company is responsible for 38% of the joint development costs worldwide, and Novartis is responsible for the remaining 62% of the joint development costs worldwide.

The Company will receive 50% of gross profits on sales of any products commercialized pursuant to this collaboration in the United States and 45% of gross profits for specified European countries and Japan. For each of these profit share countries, each party will be responsible for its respective commercial sharing percentage of all joint commercialization costs incurred in that country.

For all other countries where the Company is not sharing profits, Novartis will be responsible for all commercialization costs and will pay the Company a royalty in the mid-teens on all net sales of product sold by Novartis, its affiliates and sublicensees, with such percentage subject to reduction post patent and data exclusivity expiration and subject to reduction, capped at a specified percentage, for royalties payable to third party licensors. Novartis' royalty obligation will run on a country-by-country basis until the later of expiration of the last valid claim covering the product, expiration of data exclusivity for the product or 12 years after first commercial sale of the product in such country.

With respect to the United States, specified European countries and/or Japan, the Company may elect for such region to either reduce by 50% or to eliminate in full the Company's development and commercialization cost sharing obligation. If the Company elects to reduce its cost sharing percentage by 50% in any such region, then its profit share in such region will also be reduced by 50%. If the Company elects to eliminate its development cost sharing obligation, then such region will be removed from the profit share, and instead Novartis will owe the Company royalties on any net sales of product for such region, as described above.

The Company has determined that the license is not distinct from the co-development services to be performed under the agreement, consisting of research and development services and regulatory filing services. Specifically, the Company's development license and the manufacturing license can only provide benefit to Novartis in combination with the Company's research and development services. The intellectual property related to STING agonists, proprietary to the Company, is the foundation for the research and development activities, and can only be utilized via engaging the Company's team in the research. Hence, the research and development services provided by the Company significantly affect the development and manufacturing license's utility to Novartis. The Company determined that the regulatory filing services of collaboration products are interrelated with research and development services, as the scope and timing of the regulatory filings will depend upon successful clinical outcomes. Therefore, the research and development services are the input of the regulatory services and thus are combined as one performance obligation with the license.

For revenue recognition purposes, the Company determined that the duration of the contract begins on the effective date in March 2015 and ends upon receipt of regulatory approval, estimated to occur in 2028. The Company's performance period commenced in May 2015. The transaction price consists of the $200.0 million upfront fee, a $35.0 million milestone payment received in the second quarter of 2016 upon commencement of a Phase 1 study, and $1.3 million in reimbursement of research and development costs through June 30, 2018. The Company determined that the remaining potential milestone payments are probable of significant reversal of cumulative revenue as their achievement is highly dependent on the successful completion of Phase 1 studies. Therefore, these payments are not included in the transaction price. Any consideration related to sales-based royalties and profit-sharing payments will be recognized when the related sales occur as they were determined to relate predominantly to the license granted to Novartis and have been excluded from the transaction price. The transaction price of $236.3 million is allocated to one combined performance obligation. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

The Company concluded that it will utilize a cost-based input method to measure its progress toward completion of its performance obligation and to calculate the corresponding amount of revenue to recognize each period. The Company believes this is the best measure of progress because other measures do not reflect how the Company transfers its performance obligation to Novartis. In applying the cost-based input method of revenue recognition, the Company uses actual clinical study enrollment figures as well as actual costs incurred relative to budgeted costs expected to be incurred for the combined performance obligation. These costs consist primarily of internal full-time equivalent effort and third-party contract costs relative to the level of patient enrollment in the study.

Revenue will be recognized based on the level of costs incurred relative to the total budgeted costs for the performance obligations. A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligation. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligation will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Cost-sharing payments from Novartis are included in the transaction price and subject to the cost-based input method to determine the amount to be recognized in license and collaboration revenue in the Company's condensed consolidated statements of operations, while cost-sharing payments to Novartis are accounted for as research and development expenses in the Company's condensed consolidated statements of operations.

If the Company recognizes revenue from the sale of any products commercialized pursuant to this collaboration in the United States, it will retain 50% of the gross profits from such sales, and will pay the remaining 50% of the gross profits to Novartis. The Company will receive from Novartis 45% of gross profits for specified European countries and Japan from the sale of any products commercialized pursuant to this collaboration in such countries. Profit sharing payments made to or received from Novartis will be aggregated by product by territory and reported as expenses or revenues, as applicable.

For the three months ended June 30, 2018 and 2017, the Company recognized $2.5 million and $3.8 million, respectively, and for the six months ended June 30, 2018 and 2017, the Company recognized $6.1 million and $7.5 million, respectively, in revenue from its collaboration with Novartis. The remaining balance of the transaction price of $182.2 million is included in deferred revenue at June 30, 2018.

Janssen ADU-214 Agreement

In October 2014, the Company entered into a Research and License Agreement, or the Janssen ADU-214 Agreement, with Janssen Biotech Inc., or Janssen, a wholly owned subsidiary of Johnson & Johnson Development Corporation, to develop a drug for the treatment of lung cancer. Under the terms of the Janssen ADU-214 Agreement, the Company granted Janssen an exclusive, worldwide license to research, develop, manufacture, use, sell and otherwise exploit products containing ADU-214 for any and all uses. Janssen has agreed not to administer or cause to be administered ADU-214 in humans in clinical trials for the treatment of pancreatic cancer or mesothelioma. The Company was responsible for certain research and development activities from the effective date of the agreement until investigational new drug application, or IND, approval which occurred in the fourth quarter of 2015.

Under the terms of the Janssen ADU-214 Agreement, the Company is eligible to receive future contingent payments up to a total of $766.0 million composed of development milestones through completion of all Phase 3 clinical trials, as well as regulatory and commercial milestones. The contingent payments are triggered upon the activities expected to be undertaken by Janssen. The Company is eligible to receive royalties on any net sales of licensed products by Janssen, its affiliates and sublicensees at a rate ranging from high-single digits to low teens based on the aggregate annual net sales of licensed products worldwide and based on the country of sale. Future milestone payments and royalties will be recognized when earned as the Company has no remaining performance obligations under this agreement.

The upfront license fee of $30.0 million was recognized on a straight-line basis from the effective date of the agreement through October 2015. In addition, the Company recognized milestone payments of $21.0 million in 2015 as all performance obligations were achieved.

Janssen ADU-741 and GVAX Prostate Agreements

In May 2014, the Company entered into a Research and License Agreement, or the Janssen ADU-741 Agreement, and a GVAX Prostate License Agreement, or Janssen GVAX Prostate Agreement, with Janssen to collaborate on the development of a drug for the treatment of prostate cancer. Under the terms of the Janssen ADU-741 Agreement, the Company granted Janssen an exclusive, worldwide license to research, develop, manufacture, use, sell and otherwise exploit products containing ADU-741 for any and all uses. The Company was responsible for certain research and development activities from the effective date of the agreement until IND approval which occurred in the fourth quarter of 2015.

Under the terms of the Janssen ADU-741 Agreement, the Company is eligible to receive future contingent payments up to a total of $343.0 million composed of development milestones through completion of all Phase 3 clinical trials, as well as regulatory and commercial milestones. The contingent payments are triggered upon the activities expected to be undertaken by Janssen. The Company is eligible to receive royalties on net sales of licensed products by Janssen, its affiliates and sublicensees at a rate ranging from mid-single digits to low teens based on aggregate annual net sales and based on the country of sale.

Under the Janssen GVAX Prostate Agreement, the Company granted Janssen an exclusive worldwide license to research, develop, manufacture, use, sell and otherwise exploit products containing GVAX Prostate for any and all uses. The Company is eligible to receive $2.0 million on the achievement of a specified commercial milestone. In addition, the Company is eligible to receive royalties in the high single digits based on net sales of the product. Future milestone payments and royalties will be recognized when earned as the Company has no remaining performance obligations under these agreements.

The upfront fees received totaling $12.5 million were recognized on a straight-line basis from the effective date of the agreements through October 2015. In addition, the Company recognized milestone payments of $10.0 million in 2015 as all performance obligations were achieved.

Merck License Agreement

In connection with the acquisition of Aduro Biotech Europe in October 2015, the Company became party to an agreement with Merck Sharp & Dohme Corp., or Merck. The agreement sets forth the parties' respective obligations for development, commercialization, regulatory and manufacturing and supply activities for antibody product candidates. The Company identified the following promises under the agreement: 1) the license, 2) the obligation to provide research activities and 3) the obligation to participate on a Joint Research Committee. The Company determined that the promises were not distinct which resulted in them being combined into one performance obligation. The Company completed its performance obligation under the agreement by the end of 2016.

The Company received a milestone payment of $2.0 million in 2017 for the initiation of a GLP toxicology study, which was recognized in revenue when received as the Company had no remaining performance obligation. The Company also received a milestone payment of $3.0 million in the first quarter of 2018 for the initiation of Phase 1 trial for the anti-CD27 antibody. The milestone was recognized as revenue in the first quarter ended March 31, 2018 as the Company had completed its performance obligations under the agreement. The Company is eligible to receive future contingent payments, including up to $307.0 million in potential development milestone payments, and up to $135.0 million in commercial and net sales milestones for a product candidate. In addition, the Company is eligible to receive royalties in the mid-single digits to low teens based on net sales of the product. Future milestone payments and royalties will be recognized when earned as the Company has no remaining performance obligations under this agreement.

7. Commitments and Contingencies

Leases

The Company moved into its corporate office and laboratory facility located in Berkeley, California in August 2016. The Company leases approximately 110,853 square feet pursuant to an Office/Laboratory lease that was entered into in September 2015, or the Heinz Lease. The Heinz Lease has an initial term of approximately thirteen and a half years expiring on December 31, 2029. The Company has the right to further extend the Heinz Lease term for up to two renewal terms of five years each, provided that the rental rate would be subject to market adjustment at the beginning of each renewal term. The Company is subleasing approximately 25,700 square feet in its Heinz facilities under subleases that expire on or before December 31, 2020.

The Company continues to lease its former office and research and development facility comprised of 25,000 square feet in Berkeley, California, under a non-cancelable operating lease, or the Bancroft Lease. The term of the Bancroft Lease expires on December 31, 2018. The Bancroft Lease also contains an option to extend the lease for an additional two years. The Company has transitioned the entirety of its Berkeley operations to its Heinz facility and in accordance with the terms of the Bancroft Lease, the Company has subleased the Bancroft facility.

The Company maintains a letter of credit with Bank of America Merrill Lynch as security for the Heinz Lease in the amount of $468,000. The letter of credit is collateralized by a certificate of deposit for $468,000 which has been included in restricted cash in the condensed consolidated balance sheets as of June 30, 2018 and December 31, 2017.

The Company also leases a research and development facility in Oss, the Netherlands, for employees of Aduro Biotech Europe. The term of the Oss lease has been extended through December 2020. The Company believes that its existing facilities are adequate to meet its current needs, and that suitable additional alternative spaces will be available in the future on commercially reasonable terms.

Rent expense was $1.5 million and $1.6 million for the three months ended June 30, 2018 and 2017, respectively, and $2.9 million and $2.9 million for the six months ended June 30, 2018 and 2017, respectively. Under the terms of the lease agreements, the Company is also responsible for certain insurance, property tax and maintenance expenses. Future minimum payments under the leases at June 30, 2018 are as follows (in thousands):

Year Ending December 31,	Amounts
2018 (remaining six months)	$ 3,002
2019	5,529
2020	5,679
2021	5,332
2022	5,460
Thereafter	41,406
Total	$ 66,408

Indemnification

In the ordinary course of business, the Company enters into agreements that may include indemnification provisions. Pursuant to such agreements, the Company may indemnify, hold harmless and defend an indemnified party for losses suffered or incurred by the indemnified party. Some of the provisions will limit losses to those arising from third party actions. In some cases, the indemnification will continue after the termination of the agreement. The maximum potential amount of future payments the Company could be required to make under these provisions is not determinable. The Company has never incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. The Company has also entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the fullest extent permitted by Delaware corporate law. The Company currently has directors' and officers' insurance.

Legal

The Company is not party to any material legal proceedings at this time. From time to time, the Company may become involved in various legal proceedings that arise in the ordinary course of its business.

Other Commitments

The Company has various manufacturing, clinical, research and other contracts with vendors in the conduct of the normal course of its business. All contracts are terminable, with varying provisions regarding termination. If a contract with a specific vendor were to be terminated, generally the Company would only be obligated for the products or services that the Company had received at the time the termination became effective as well as non-cancelable and non-refundable obligations, including those incurred by the vendor for products or services before the termination became effective, and in some cases a termination fee. In the case of terminating a clinical trial agreement at a particular site, the Company may also be obligated to provide continued support for appropriate treatment for clinical trial subjects at that site until or after completion or termination.

8. Stockholders' Equity

At-the-Market Sales Agreement

In August 2017, the Company entered into an "at-the-market" sales agreement, or the 2017 Sales Agreement, with Cowen and Company, LLC, or Cowen, through which the Company may offer and sell shares of its common stock having an aggregate offering price of up to $100.0 million through Cowen, as the Company's sales agent. The Company agreed to pay Cowen a commission of up to 3% of the gross proceeds of sales made through the arrangement. There were no sales of shares of common stock pursuant to the 2017 Sales Agreement during the three and six months ended June 30, 2018. As of June 30, 2018, the Company had an aggregate of $81.5 million available to be offered under the 2017 Sales Agreement, subject to the continued effectiveness of its shelf registration statement on Form S-3 (Registration No. 333-211063) or an effective replacement shelf registration statement.

In May 2016, the Company entered into an "at-the-market" sales agreement, or the 2016 Sales Agreement, with Cowen, through which the Company offered and sold 8,350,018 shares of its common stock for total net proceeds of $97.3 million from May 2016 through the second quarter of 2017 through Cowen, acting as the Company's sales agent. The issuance and sale of these shares by the Company pursuant to the 2016 Sales Agreement was deemed an "at-the-market" offering under the Securities Act of 1933, as amended. Under the 2016 Sales Agreement, the Company agreed to pay Cowen a commission of up to 3% of the gross proceeds of any sales made pursuant to the Sales Agreement. There are no amounts remaining for future sales under the 2016 Sales Agreement.

9. Equity Incentive Plans

2015 Plan

In March 2015, the Company's board of directors adopted and in April 2015 the Company's stockholders approved the 2015 Equity Incentive Plan, or the 2015 Plan, which became effective upon the initial public offering of the Company's common stock, or IPO, and provides for the granting of incentive stock options, nonstatutory stock options and other forms of stock awards to its employees, directors and consultants. The Company's 2009 Stock Incentive Plan, or the 2009 Plan, terminated on the date the 2015 Plan was adopted. Options granted or shares issued under the 2009 Plan that were outstanding on the date the 2015 Plan became effective will remain subject to the terms of the 2009 Plan.

The 2015 Plan is administered by the board of directors or a committee appointed by the board of directors, which determines the types of awards to be granted, including the number of shares subject to the awards, the exercise price and the vesting schedule. The exercise price of incentive stock options and nonqualified stock options will be no less than 100% of the fair value per share of the Company's common stock on the date of grant. If an individual owns capital stock representing more than 10% of the voting shares, the price of each share will be at least 110% of the fair value on the date of grant. Options expire after 10 years (five years for stockholders owning greater than 10% of the voting stock). The number of shares of common stock initially reserved for issuance under the 2015 Plan was 6,134,292 shares with an automatic annual increase to the shares issuable under the 2015 Plan equal to the lower of (i) 4% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or (ii) a lower number determined by the board of directors. On January 1, 2018 the shares issuable under the 2015 Plan increased by 3,109,448. The Company had 7,542,985 shares available for future grant under the 2015 Plan as of June 30, 2018.

2009 Plan

The 2009 Plan terminated on the date the 2015 Plan was adopted. Options granted or shares issued under the 2009 Plan that were outstanding on the date the 2015 Plan became effective will remain subject to the terms of the 2009 Plan. At June 30, 2018, options to purchase 3,633,580 shares of common stock under the 2009 Plan remained outstanding.

Stock Options

The following table summarizes stock option activity for the six months ended June 30, 2018:

		Options Outstanding		
	Shares Available for Grant	Number of Shares Underlying Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value
				(In thousands)
Balance—December 31, 2017	6,117,580	9,076,018	$ 8.04	$ 32,256
Authorized	3,109,448	—		
RSUs forfeited	244,600	—		
Granted	(2,616,150)	2,616,150		
Exercised	—	(1,241,293)		
Canceled	687,507 (1)	(830,761)		
Balance—June 30, 2018	7,542,985	9,620,114	$ 8.06	$ 23,705
Options exercisable—June 30, 2018		5,487,910	$ 7.37	$ 20,278
Options vested and expected to vest—June 30, 2018		9,409,069	$ 8.05	$ 23,569

(1) This excludes 143,254 subject to canceled options for the six months ended June 30, 2018 initially granted from the legacy stock option plans. As these plans have been terminated, any options canceled are not added back to the existing option plan pool.

The aggregate intrinsic value represents the difference between the exercise price of the options and the closing price of the Company's common stock. The aggregate intrinsic value of options exercised for the three and six months ended June 30, 2018 was $3.6 million and $8.4 million, respectively.

As of June 30, 2018, the total unrecognized compensation expense related to unvested options, net of estimated forfeitures, was $23.8 million, which the Company expects to recognize over an estimated weighted-average period of 2.6 years.

Restricted Stock Units (RSUs)

In September 2016, the Company's board of directors authorized the issuance of Restricted Stock Units, or RSUs, under the 2015 Plan and adopted a form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement, or the RSU Agreement, which is intended to serve as a standard form agreement for RSU grants issued to employees, executive officers, directors and consultants.

The following table summarizes RSU activity for the six months ended June 30, 2018:

	RSUs Outstanding	
	Number of Restricted Stock Units	Weighted-Average Grant Date Fair Value Per Share
Balance—December 31, 2017	1,436,623	$ 11.47
Vested	(26,175)	11.19
Canceled/forfeited	(244,600)	12.12
Balance—June 30, 2018	1,165,848	$ 11.34

The fair value of RSUs is determined on the date of grant based on the market price of the Company's common stock on that date. As of June 30, 2018, there was $10.2 million of unrecognized stock-based compensation expense, net of estimated forfeitures, related to RSUs to be recognized over a weighted-average period of 2.9 years.

2015 Employee Stock Purchase Plan

In March 2015, the Company's board of directors adopted and in April 2015 the Company's stockholders approved the 2015 Employee Stock Purchase Plan, or the 2015 ESPP, which became effective upon the IPO. The 2015 ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986, as amended, or the Code, and is administered by the Company's board of directors and the Compensation Committee of the board of directors.

The number of shares of common stock initially reserved for issuance under the 2015 ESPP was 720,000 shares with an automatic annual increase to the shares issuable under the 2015 ESPP equal to the lower of (i) 1% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or (ii) a lower number determined by the board of directors. There was no annual increase of shares issuable under the 2015 ESPP on January 1, 2018. The Company had 1,740,211 shares available for future issuance under the 2015 ESPP as of June 30, 2018.

As of June 30, 2018, the total unrecognized compensation expense related to ESPP was $105,000, which the Company expects to recognize over an estimated weighted-average period of 0.4 years.

Stock-based Compensation Expense

Total stock-based compensation expense recognized was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Research and development	$ 2,539	$ 2,343	$ 5,284	$ 4,593
General and administrative	1,788	1,655	3,967	3,392
Total stock-based compensation expense	$ 4,327	$ 3,998	$ 9,251	$ 7,985

In determining the fair value of the stock-based awards, the Company uses the Black-Scholes option-pricing model. The fair value of stock option awards granted to employees was estimated at the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Option Plan Six Months Ended June 30,		ESPP Six Months Ended June 30,	
	2018	2017	2018	2017
Expected term (in years)	5.32 - 6.05	5.31 - 6.04	0.5	0.5
Volatility	71.6 - 71.7%	73.2 - 74.1%	54.5%	65.4%
Risk-free interest rate	2.38 - 2.87 %	1.78 - 2.25%	2.09%	1.02%
Dividend yield	—%	—%	—%	—%

10. Income Taxes

Income tax benefit for the three months ended June 30, 2018 and 2017 was approximately $38,000 and $3.8 million, respectively, and $59,000 and $6.5 million for the six months ended June 30, 2018 and 2017, respectively. The income tax benefit recorded for the six months ended June 30, 2018 primarily related to the foreign deferred tax benefit from the amortization of intangibles. The income tax benefit recorded in 2017 primarily related to the current benefit of federal income taxes paid in 2016.

The Company files income tax returns in the United States and Netherlands. The federal and state income tax returns are open under the statute of limitations subject to tax examinations for the tax years ended December 31, 2013 through December 31, 2016. To the extent the Company has tax attribute carryforwards, the tax years in which the attribute was generated may still be adjusted upon examination by the IRS or state tax authorities to the extent utilized in a future period. For the Netherlands, the tax administration can impose an additional assessment within five years from the year in which the tax debt originated.

Also, on December 22, 2017, the SEC issued Staff Accounting Bulletin 118 (“SAB 118”), which provides guidance on accounting for tax effects of the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under ASC 740. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that a company’s accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate to be included in the financial statements. Provisional amounts or adjustments to provisional amounts identified in the measurement period, as defined, would be included as an adjustment to tax expense or benefit from continuing operations in the period the amounts are determined. Due to the broad complexities of the Tax Act, under the guidance of Staff Accounting Bulletin 118, the Company has determined a reasonable estimate for the effects of the Tax Act and reported the estimates as provisional amounts in its financial statements for which the accounting under ASC 740 is completed.

As of June 30, 2018, Aduro recorded a current income tax receivable of $17.5 million. The current income tax receivable relates to the 2017 net operating loss. Pursuant to Code Section 172(f), the Company plans to file a claim to carryback losses from 2017 to 2016. The Company anticipates filing this claim in August 2018 and expects to receive the refund by the end of 2018.

11. Net Loss per Common Share

Since the Company was in a loss position for all periods presented, diluted net loss per common share is the same as basic net loss per common share for all periods presented as the inclusion of all potential common shares outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per common share calculations because they would be anti-dilutive were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Options to purchase common stock	9,620,114	10,846,006	9,620,114	10,846,006
Restricted stock units	1,165,848	749,700	1,165,848	749,700
Common stock warrants	63,661	95,221	63,661	95,221
Total	10,849,623	11,690,927	10,849,623	11,690,927

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our unaudited condensed consolidated financial statements and related notes included in Part I, Item 1 of this report and with our audited consolidated financial statements and related notes thereto for the year ended December 31, 2017, included in our Annual Report on Form 10-K filed with the Securities and Exchange Commission.

Forward-Looking Statements

This discussion and other parts of this report contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, 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, strategies, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements are subject to 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. We caution investors that our business and financial performance are subject to substantial risks and uncertainties.

Overview

We are an immunotherapy company focused on the discovery, development and commercialization of therapies that transform the treatment of challenging diseases, including cancer. We believe our technologies are uniquely positioned to recruit and direct the immune system by activating cancer-fighting immune cells and inhibiting immune suppressive cells known to allow tumor growth. Product candidates from our STING and B-select monoclonal antibody technology platforms and personalized, neoantigen-based LADD program are designed to stimulate and/or regulate innate and adaptive immune responses. Our diverse technology platforms have led to a strong pipeline of clinical and preclinical candidates, which are being developed for a number of cancer indications. Further, we believe that many of our product candidates are combinable with other conventional and novel treatment options, leveraging potential synergies between Aduro's agents and other therapies with established activity.

Immuno-oncology is an emerging field of cancer therapy that aims to activate the immune system in the tumor microenvironment to create and enhance anti-tumor immune responses, as well as to overcome the immuno-suppressive mechanisms that cancer cells have developed against the immune system. Recent developments in the field of immuno-oncology, including checkpoint inhibitors—therapies which work to remove suppression mechanisms that prevent an immune response against cancer cells—have shown the potential to provide efficacy and extended survival, even in cancers where conventional therapies, such as surgery, chemotherapy and radiotherapy, have failed. The immunotherapy field is rapidly advancing with new immuno-oncology combinations that focus on strengthening therapeutic efficacy in a wide range of cancers. We intend to pursue a broad strategy of combining our technology platforms with conventional and novel therapies, based on their mechanisms of action, safety profiles and versatility.

Our STING Pathway Activator platform is designed to activate the intracellular Stimulator of Interferon Genes, or STING, receptor, resulting in a potent tumor-specific immune response. ADU-S100 is the first STING Pathway Activator compound to enter the clinic and is currently being evaluated in Phase 1 studies both as a monotherapy and in combination with an immune checkpoint inhibitor in patients with cutaneously accessible metastatic solid tumors or lymphomas. Our B-select monoclonal antibody platform includes a proprietary ultra-selective functional screening process to identify antibodies with unique binding properties against a broad range of targets that are being designed to modulate the innate and adaptive arms of the immune system. Our most advanced product candidate from the B-select platform, BION-1301, is being evaluated in a Phase 1 clinical trial in multiple myeloma. In addition, the B-select platform has delivered a number of immune modulating assets currently in research and preclinical development. Our LADD program is focused on the development of personalized LADD, or pLADD, therapeutics that encode and express antigens that are based on protein sequences that result from mutations specific to an individual patient's tumor (neoantigens). These antigens can be also derived from native protein sequences that are highly expressed in patients with certain tumor types (self antigens).

We are developing a pipeline of proprietary product candidates on our own and have a number of collaborations with leading global pharmaceutical companies to expand our products and technology platforms. We are developing STING Pathway Activator product candidates in oncology under our worldwide collaboration with Novartis Pharmaceuticals Corporation, or Novartis, and our

anti-CD27 antibody was developed with and is exclusively licensed to Merck Sharp and Dohme B.V., or Merck. In addition, we have developed self antigen-based LADD product candidates targeting lung and prostate cancers that are licensed to Janssen Biotech Inc., or Janssen. We have intellectual property protection on each of our product candidates, some of which we believe can be maintained into the 2030s.

Since commencing our operations, our efforts have been focused on research, development and the advancement of our product candidates into clinical trials. As a result, we have incurred significant losses. We have funded our operations primarily through the sale of common stock, licensing agreements with pharmaceutical partners and revenue from government grants. We incurred a net loss of $24.4 million and $19.4 million for the three months ended June 30, 2018 and 2017, respectively, and $45.9 million and $41.2 million for the six months ended June 30, 2018 and 2017, respectively. At June 30, 2018, our cash, cash equivalents and marketable securities totaled $305.9 million and our accumulated deficit was $355.1 million.

Components of Operating Results

Revenue

We have not generated any revenue from product sales. Our revenue to date has been primarily derived from our collaboration and license agreements. Our collaboration agreements may include the transfer of intellectual property rights in the form of licenses, promises to provide research and development services and promises to participate on certain development committees with the collaboration party. The terms of such agreements include payment to us of one or more of the following: nonrefundable upfront fees, payment for research and development services, development, regulatory and commercial milestone payments, and royalties on net sales of licensed products.

Revenue associated with nonrefundable upfront license fees where the license fees and research and development activities cannot be accounted for as separate performance obligations is deferred and recognized as revenue over the expected period of performance based on a cost-based input method. Revenue from contingent development, regulatory and commercial milestones, when not deemed probable of significant reversal of cumulative revenue, is also recognized over the performance period based on a similar method. Where we have no remaining performance obligations, revenue from such milestones is recognized when the accomplishment of the milestones is deemed probable.

We expect that any revenue we generate from our current collaboration, research and license agreements and any future collaboration partners will fluctuate from year to year as a result of the timing and amount of milestones and other payments.

Research and Development Expenses

The largest component of our total operating expenses has historically been our investment in research and development activities, including the clinical development of our product candidates. Research and development expenses represent costs incurred to conduct research, such as the discovery and development of our product candidates, as well as the development of product candidates pursuant to our research and license agreements with Novartis, Janssen and Merck. We recognize all research and development costs as they are incurred. Clinical trial costs, contract manufacturing and other development costs incurred by third parties are expensed as the contracted work is performed.

We expect our research and development expenses to increase in the future as we advance our product candidates into and through clinical trials and pursue regulatory approval of our product candidates. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time-consuming. The actual probability of success for our product candidates and technology platforms may be affected by a variety of factors including: the quality of our product candidates, early clinical data, investment in our clinical programs, competition, manufacturing capability and commercial viability. We may never succeed in obtaining regulatory approval for any of our product candidates. As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates.

The following table summarizes our research and development costs by platform:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
	(in thousands)		(in thousands)	
B-select	$ 5,950	$ 7,964	$ 11,200	$ 14,731
LADD	3,829	5,873	8,914	10,668
STING	3,153	1,907	5,886	4,551
Other research and development costs	2,031	1,095	4,211	3,175
Subtotal	14,963	16,839	30,211	33,125
Stock-based compensation	2,539	2,343	5,284	4,593
Facility costs and depreciation	1,918	2,258	4,052	4,293
Total research and development	$ 19,420	$ 21,440	$ 39,547	$ 42,011

Other research and development costs include early research programs, sponsored research grants and laboratory supplies and materials.

General and Administrative Expenses

General and administrative expenses include personnel costs, expenses for outside professional services and other allocated expenses. Personnel costs consist of salaries, bonuses, benefits and stock-based compensation. Outside professional services consist of legal, accounting and audit services, insurance expenses, investor relations activities, administrative services and other consulting fees. Allocated expenses consist of rent expense related to our offices and research and development facility.

Interest Income

Interest income consists of interest income from our cash equivalents and marketable securities.

Other Loss, Net

Other loss, net primarily consists of foreign currency transaction gains and losses.

Provision for Income Taxes

We are subject to income taxes in the United States and foreign jurisdictions in which we do business. These foreign jurisdictions have statutory tax rates different from those in the United States. Accordingly, our effective tax rates will vary depending on the relative proportion of foreign to U.S. income, the availability of research and development tax credits, changes in the valuation of our deferred tax assets and liabilities and changes in tax laws. We regularly assess the likelihood of adverse outcomes resulting from the examination of our tax returns by the IRS and other tax authorities to determine the adequacy of our income tax reserves and expense. Should actual events or results differ from our current expectations, charges or credits to our income tax expense may become necessary.

Results of Operations

Comparison of the Three Months Ended June 30, 2018 and 2017

	Three Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Revenue:			
Collaboration and license revenue	$ 2,639	$ 5,876	$ (3,237)
Grant revenue	—	41	(41)
Total revenue	2,639	5,917	(3,278)
Operating expenses:			
Research and development	19,420	21,440	(2,020)
General and administrative	8,827	8,245	582
Amortization of intangible assets	147	136	11
Total operating expenses	28,394	29,821	(1,427)
Loss from operations	(25,755)	(23,904)	(1,851)
Interest income	1,340	780	560
Other loss, net	(20)	(64)	44
Loss before income tax	(24,435)	(23,188)	(1,247)
Income tax benefit	38	3,788	(3,750)
Net loss	$ (24,397)	$ (19,400)	$ (4,997)

Revenue

Collaboration and license revenue was $2.6 million for the three months ended June 30, 2018, a decrease of $3.2 million compared to the three months ended June 30, 2017. The variation in collaboration and license revenue for the quarter was primarily due to the timing of milestone payments earned from Merck for advancement of its anti-CD27 antibody, which entered clinical development in early 2018.

Research and Development Expenses

The following table summarizes our research and development expenses incurred during the three months ended June 30, 2018 and 2017:

	Three Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Compensation and related personnel costs	$ 5,429	$ 5,760	$ (331)
Stock-based compensation expense	2,539	2,343	196
Clinical development	2,080	2,575	(495)
Facility costs	1,956	2,216	(260)
Supplies and materials	1,755	1,451	304
Contract manufacturing	1,618	1,896	(278)
Outside professional services	1,480	990	490
Contract research	1,412	1,358	54
Licensing fees	113	154	(41)
Other	1,038	2,697	(1,659)
Total research and development	$ 19,420	$ 21,440	$ (2,020)

Research and development expenses were $19.4 million for the three months ended June 30, 2018, a decrease of $2.0 million compared to the three months ended June 30, 2017. The decrease was primarily due to lower expenses for our antibody programs, including contingent consideration and contract manufacturing related to ADU-1604 and BION-1301, respectively. In addition, clinical development expenses declined in 2018 following the wind down of CRS-207 development activities, partially offset by increased expenses for our ongoing clinical programs including ADU-S100, BION-1301, ADU-1604, and our personalized neoantigen-based immunotherapy.

General and Administrative Expenses

The following table summarizes our general and administrative expenses incurred during the three months ended June 30, 2018 and 2017:

	Three Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Compensation and related personnel costs	$ 2,746	$ 2,776	$ (30)
Outside professional services	2,718	1,849	869
Stock-based compensation expense	1,788	1,655	133
Facility costs	952	1,149	(197)
Other general and administrative	623	816	(193)
Total general and administrative	$ 8,827	$ 8,245	$ 582

General and administrative expenses were $8.8 million for the three months ended June 30, 2018, an increase of $0.6 million compared to the three months ended June 30, 2017. The increase was primarily due to outside professional services, legal fees associated with our patent portfolio, and higher stock-based compensation expense.

Interest Income

Interest income was $1.3 million for the three months ended June 30, 2018, an increase of $560,000 compared to the three months ended June 30, 2017. Interest income is earned from our funds invested in cash equivalents and marketable securities. The increase for the three months ended June 30, 2018 is primarily due to increased interest rates.

Provision for Income Taxes

Income tax benefit was $38,000 for the three months ended June 30, 2018, a decrease of $3.8 million compared to the three months ended June 30, 2017. The income tax benefit for 2017 represents the federal income tax benefit associated with the carryback of 2017 losses as compared to the income tax benefit for 2018 which represents the foreign deferred tax benefit from the amortization of intangibles.

Comparison of the Six Months Ended June 30, 2018 and 2017

	Six Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Revenue:			
Collaboration and license revenue	$ 9,266	$ 9,648	$ (382)
Grant revenue	—	41	(41)
Total revenue	9,266	9,689	(423)
Operating expenses:			
Research and development	39,547	42,011	(2,464)
General and administrative	17,872	16,523	1,349
Amortization of intangible assets	299	268	31
Total operating expenses	57,718	58,802	(1,084)
Loss from operations	(48,452)	(49,113)	661
Interest income	2,539	1,430	1,109
Other loss, net	(36)	(68)	32
Loss before income tax	(45,949)	(47,751)	1,802
Income tax benefit	59	6,540	(6,481)
Net loss	$ (45,890)	$ (41,211)	$ (4,679)

Revenue

Collaboration and license revenue was $9.3 million for the six months ended June 30, 2018, a decrease of $382,000 compared to the six months ended June 30, 2017. The decrease in revenue for the first half of the year was primarily due to the adoption of the ASC 606 accounting standard on January 1, 2018, which resulted in a change in revenue recognition methodology for our Novartis collaboration revenue.

There was no grant revenue for the six months ended June 30, 2018, a decrease of $41,000 compared to the six months ended June 30, 2017, primarily due to most grants expiring in 2017.

Research and Development Expenses

The following table summarizes our research and development expenses incurred during the six months ended June 30, 2018 and 2017:

	Six Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Compensation and related personnel costs	$ 11,429	$ 11,313	$ 116
Stock-based compensation expense	5,284	4,593	691
Clinical development	4,465	4,320	145
Facility costs	4,094	4,236	(142)
Supplies and materials	3,153	2,860	293
Contract research	3,009	2,580	429
Contract manufacturing	2,767	6,106	(3,339)
Outside professional services	2,553	1,788	765
Licensing fees	500	382	118
Other	2,293	3,833	(1,540)
Total research and development	$ 39,547	$ 42,011	$ (2,464)

Research and development expenses were $39.5 million for the six months ended June 30, 2018, a decrease of $2.5 million compared to the six months ended June 30, 2017. The decrease was primarily due to lower expenses for our antibody programs, including contingent consideration and contract manufacturing related to ADU-1604 and BION-1301, respectively. The decrease was partially offset by increased expenses for our ongoing clinical programs including ADU-S100, BION-1301, ADU-1604, and our personalized neoantigen-based immunotherapy.

General and Administrative Expenses

The following table summarizes our general and administrative expenses incurred during the six months ended June 30, 2018 and 2017:

	Six Months Ended June 30,		
	2018	2017	Change
	(in thousands)		
Compensation and related personnel costs	$ 5,592	$ 5,708	$ (116)
Outside professional services	5,034	3,696	1,338
Stock-based compensation expense	3,967	3,392	575
Facility costs	2,016	2,126	(110)
Other general and administrative	1,263	1,601	(338)
Total general and administrative	$ 17,872	$ 16,523	$ 1,349

General and administrative expenses were $17.9 million for the six months ended June 30, 2018, an increase of $1.3 million compared to the six months ended June 30, 2017. The increase was primarily due to outside professional services, legal fees associated with our patent portfolio, and higher stock-based compensation

Interest Income

Interest income was $2.5 million for the six months ended June 30, 2018, an increase of $1.1 million compared to the six months ended June 30, 2017. The increase in interest income earned in 2018 is primarily due to increased interest rates.

Provision for Income Taxes

Income tax benefit recorded for the six months ended June 30, 2018 was $59,000, a decrease of $6.5 million compared to the six months ended June 30, 2017. The income tax benefit for 2017 represents the federal income tax benefit associated with the carryback of 2017 losses as compared to the income tax benefit for 2018 which represents the foreign deferred tax benefit from the amortization of intangibles.

Liquidity and Capital Resources

To date, our operations have been financed primarily through the public issuance of common stock, sale of convertible preferred stock, and proceeds from our collaboration and license agreements. At June 30, 2018, we had cash, cash equivalents and marketable securities of $305.9 million. We believe that our available cash, cash equivalents and marketable securities and anticipated funding from our collaboration agreements will be sufficient to fund our planned operations through 2020. We have based our cash sufficiency estimate on assumptions that may prove to be incorrect. If our assumptions prove to be incorrect, we could consume our available capital resources sooner than we currently expect or in excess of amounts that we currently expect, which could adversely affect our development activities.

In August 2017, we entered into an “at-the-market” sales agreement, or the 2017 Sales Agreement, with Cowen and Company, LLC, or Cowen, through which we may offer and sell shares of our common stock having an aggregate offering price of up to $100.0 million through Cowen, acting as sales agent. We agreed to pay Cowen a commission of up to 3% of the gross proceeds of sales made through the arrangement. There were no sales of shares of common stock pursuant to the 2017 Sales Agreement during the three and six months ended June 30, 2018. As of June 30, 2018, we had an aggregate of $81.5 million remaining for future sales under the 2017 Sales Agreement, subject to the continued effectiveness of our shelf registration statement on Form S-3 (Registration No. 333-211063) or an effective replacement shelf registration statement.

Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, clinical development costs including manufacturing, and other research and development services, laboratory and related supplies and legal and other professional services. Cash used to fund operating expenses is impacted by the timing of when we pay expenses, as reflected in the change in our outstanding accounts payable and accrued expenses. We expect to incur substantial expenditures in the foreseeable future for the development, manufacturing and potential commercialization of our product candidates.

We plan to continue to fund our operations and capital funding needs through equity and/or debt financing and potential milestones from existing collaboration agreements. We may also consider entering into additional collaboration arrangements or selectively partnering for clinical development and commercialization. In addition, we expect to continue to opportunistically seek access to the equity capital markets to support our development efforts and operations. The sale of additional equity would result in additional dilution to our stockholders. The incurrence of debt financing would result in debt service obligations and the instruments governing such debt could provide for operating and financing covenants that would restrict our operations. To the extent that we raise additional funds through collaboration or partnering arrangements, we may be required to relinquish some of our rights to our technologies or rights to market and sell our products in certain geographies, grant licenses on terms that are not favorable to us, or issue equity that may be substantially dilutive to our stockholders. If we are not able to secure adequate additional funding, we may be forced to make reductions in spending, extend payment terms with suppliers, liquidate assets where possible and/or suspend or curtail planned programs. Any of these actions could harm our business, results of operations, financial condition and future prospects.

Cash Flows

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

	Six Months Ended June 30,	
	2018	2017
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (44,946)	$ (44,112)
Investing activities	211	91,599
Financing activities	1,626	61,396
Effect of exchange rate changes	(104)	—
Net change in cash, cash equivalents, and restricted cash	$ (43,213)	$ 108,883

Operating Activities

Net cash used in operating activities was $44.9 million for the six months ended June 30, 2018, compared to $44.1 million for the six months ended June 30, 2017. Net cash used in operating activities during 2018 was higher in 2018 primarily related to clinical trial activities, personnel costs and research and development expenses.

Investing Activities

Net cash provided by investing activities was $0.2 million for the six months ended June 30, 2018, compared to net cash provided by investing activities of $91.6 million for the six months ended June 30, 2017. The change was primarily due to a higher level of purchases and timing of maturities of marketable securities in 2018 as compared to 2017.

Financing Activities

Net cash provided by financing activities was $1.6 million for the six months ended June 30, 2018, compared to $61.4 million for the six months ended June 30, 2017. The decrease was primarily related to net cash proceeds from the sale of our common stock through a sales agreement with Cowen during the six months ended June 30, 2017. There were no such sales during the six months ended June 30, 2018.

Critical Accounting Policies and Significant Judgments and Estimates

Our condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States, or U.S. GAAP. The preparation of these unaudited condensed consolidated 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 revenue 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.

Revenue from research activities under our collaboration arrangements is recognized when our customer obtains control of the promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. Revenue generated from our collaboration arrangements is not subject to repayment and typically includes upfront fees, development, regulatory and commercial milestone payments and royalties on the licensee’s future product sales.

Our collaboration agreements may include the transfer of intellectual property rights in the form of licenses, promises to provide research and development services and promises to participate on certain development committees with the collaboration party. We assess whether the promises in these agreements are considered distinct performance obligations that should be accounted for separately. Judgment is required to determine whether licenses to our intellectual property are distinct from the research and development services or participation on development committees.

The transaction price in each agreement is allocated to the identified performance obligations based on the SSP of each distinct performance obligation. Due to the early stage of our licensed technology, the license of such technology is typically combined with the research and development services and committee participation as one combined performance obligation.

Revenue associated with nonrefundable upfront license fees where the license fees and research and development activities cannot be accounted for as separate performance obligations is deferred and recognized as revenue over the expected period of performance using a cost-based input method. We utilize judgment to assess the pattern of delivery of the performance obligation. A cost-based input method of revenue recognition requires management to make estimates of costs to complete our performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete our performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in the assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

At the inception of each agreement that includes development, regulatory or commercial milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. The transaction price is allocated to each performance obligation in the agreement based on relative SSP. Milestone payments that are not within our or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At the end of each subsequent reporting period, we re-evaluate the probability of achievement of each such milestone and any related constraint, and if necessary, adjust our estimates of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

There have been no other material changes in our critical accounting policies during the six months ended June 30, 2018, as compared to those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Estimates" in our Annual Report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 1, 2018.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under SEC rules.

Contractual Obligations and Other Commitments

The following table summarizes our contractual obligations as of June 30, 2018:

	Payments due by period				
	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years	Total
			(in thousands)		
Operating leases	$ 3,002	$ 11,208	$ 10,792	$ 41,406	$ 66,408
Total contractual obligations	$ 3,002	$ 11,208	$ 10,792	$ 41,406	$ 66,408

Recently Adopted Pronouncements

On January 1, 2018, we adopted Accounting Standards Update, or ASU, No. 2014-09, Revenue from Contracts with Customers (Topic 606) using the modified retrospective method. The adoption of this standard had a material impact on our condensed consolidated financial statements. Refer to Note 2 – Basis of Presentation, Use of Estimates and Recent Accounting Pronouncements in the Notes to Consolidated Financial Statements (Part I, Item 1 of this Quarterly Report on Form 10-Q) for further discussion.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

The primary financial risk we are exposed to is foreign currency exchange, as certain operations, assets and liabilities are denominated in foreign currency. Foreign currency exposures arise from transactions denominated in a currency other than the functional currency and from foreign denominated revenue and profit translated into U.S. dollars. The primary foreign currency to which we are exposed is the Euro. We manage these risks through normal operating and financing activities and do not currently hedge our exposure to foreign currency exchange rate fluctuations.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures.

Our management, with the participation of our President and 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 on Form 10-Q. Based on that evaluation, our President and Chief Executive Officer and our Chief Financial Officer have concluded that, as of the end of the period covered by this Quarterly Report on Form 10-Q, 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 June 30, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent limitation on the effectiveness of internal control.

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurances. In addition, 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. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

We are not party to any material legal proceedings at this time. From time to time, we may become involved in various legal proceedings that arise in the ordinary course of our business.

Item 1A. Risk Factors.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and all of the other information contained in this Quarterly Report on Form 10-Q, including our unaudited condensed consolidated financial statements and related notes and the section "Management's Discussion and Analysis of Financial Condition and Results of Operations," before investing in our common stock. While we believe that the risks and uncertainties described below are the material risks currently facing us, additional risks that we do not yet know of or that we currently think are immaterial may also arise and materially affect our business. If any of the following risks materialize, our business, financial condition and results of operations could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you may lose some or all of your investment.

Risks Related to Our Business

We have incurred net losses in every year since our inception and anticipate that we will continue to incur substantial and increasing net losses in the foreseeable future.

We are an immunotherapy company with a limited operating history. Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate efficacy or an acceptable safety profile, gain regulatory approval and become commercially viable. We have financed our operations primarily through the sale of equity securities and convertible debt securities. Since our inception, most of our resources have been dedicated to the preclinical and clinical development of our product candidates. The size of our future net losses will depend, in part, on our future expenses and our ability to generate revenue. We have no products approved for commercial sale and have not generated any revenue from product sales to date, and we continue to incur significant research and development and other expenses related to our ongoing operations. We reported a net loss of $24.4 million and $19.4 million for the three months ended June 30, 2018 and 2017, respectively, and a net loss of $45.9 million and $41.2 million for the six months ended June 30, 2018 and 2017, respectively. At June 30, 2018, we had an accumulated deficit of $355.1 million. We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of, and seek regulatory approvals for, our product candidates.

Even if we succeed in commercializing one or more of our product candidates, we will continue to incur substantial research and development and other expenditures to develop and market additional product candidates. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

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

Our operations have consumed substantial amounts of cash since inception. At June 30, 2018, our cash and cash equivalents and marketable securities were $305.9 million. We expect to continue to spend substantial amounts to continue the development of our product candidates. If we are able to gain regulatory approval for any of our product candidates, we will require significant additional amounts of cash in order to launch and commercialize any such product candidates. In addition, other unanticipated costs may arise. Because the design and outcome of our planned and anticipated clinical trials are highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing our product candidates, and conducting preclinical studies and clinical trials;
- the timing of, and costs associated with, obtaining regulatory approvals for our product candidates if clinical trials are successful;
- the cost of commercialization activities for our product candidates, if any of our product candidates is approved for sale, including marketing, sales and distribution costs;
- the cost of manufacturing our product candidates for clinical trials in preparation for regulatory approval and in preparation for commercialization and product launch;
- our ability to establish and maintain strategic licensing or other arrangements and the financial terms of such agreements;
- the costs involved in preparing, filing, prosecuting, maintaining, expanding, defending and enforcing patent claims, including litigation costs and the outcome of such litigation;
- the timing, receipt and amount of sales of, or royalties on, our future products, if any;
- competing cancer therapies and combinations; and
- other adverse market developments.

We do not have any committed external source of funds or other support for our development efforts other than our license agreements, including our collaboration and license agreement with Novartis, which may be terminated by Novartis upon 180 days' notice, our license agreements with Janssen, which may be terminated by Janssen upon delivery of notice, and our license agreement with Merck, which may be terminated by Merck upon 120 days' notice. Until we can generate sufficient product and royalty revenue to finance our cash requirements, which we may never do, we expect to finance our future cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing or distribution arrangements. Additional financing may not be available to us when we need it or it may not be available on favorable terms.

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. If we raise additional capital through public or private equity offerings, 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 financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our clinical trials or research and development programs or our commercialization efforts.

Risks Related to the Development and Commercialization of Our Current and Future Product Candidates

Our product candidates are based on novel technologies, and the development and regulatory approval pathway for such product candidates is unproven and may never lead to marketable products.

We do not have any products that have gained regulatory approval. Our immuno-oncology technology platforms are designed to leverage the patient's immune system to slow the growth and spread of, or eliminate, tumor cells. Any products we develop may not effectively modulate the immune response to slow the spread of or eliminate cancer cells. The scientific evidence to support the feasibility of immuno-oncology product candidates is preliminary and limited. Our business and future success depend on our ability to obtain regulatory approval of and then successfully commercialize our product candidates. Advancing these novel therapies creates significant challenges for us, including, among others:

- obtaining approval from regulatory authorities to conduct clinical trials with our product candidates;
- successful completion of preclinical studies and successful enrollment of clinical trials;
- successful completion of our clinical trials, including a favorable risk-benefit outcome;
- receipt of marketing approvals from the U.S. Food and Drug Administration, or FDA, and similar regulatory authorities outside the United States;

- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- establishing commercial manufacturing, supply and distribution arrangements;
- establishing a commercial infrastructure;
- acceptance of our products by patients, the medical community and third-party payors;
- establishing market share while competing with other therapies;
- successfully executing our pricing and reimbursement strategy;
- a continued acceptable safety and adverse event profile of our products following regulatory approval; and
- qualifying for, identifying, registering, maintaining, enforcing and defending intellectual property rights and claims covering our products.

All of our product candidates will require additional clinical and non-clinical development, regulatory review and approval in multiple jurisdictions, substantial investment, access to sufficient commercial manufacturing capacity and significant marketing efforts before we can generate any revenue from product sales. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive regulatory approval for any of our product candidates. If we are unable to develop or receive marketing approval for our product candidates in a timely manner or at all, our business, financial condition and results of operations may be materially and adversely affected.

We may not be successful in our efforts to use and expand our technology platforms to build a pipeline of product candidates.

A key element of our strategy is to use and expand our technology platforms to build a pipeline of product candidates, combine our product candidates with existing and novel therapies, and progress these product candidates and combinations through clinical development for the treatment of various diseases. Although our research and development efforts to date have resulted in a pipeline of product candidates directed at various cancers, we may not be able to develop product candidates that are safe and effective. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. If we do not continue to successfully develop and begin to commercialize product candidates, we will face difficulty in obtaining product revenues in future periods.

Clinical development involves a lengthy and expensive process with uncertain outcomes, and results of earlier studies and trials may not be predictive of future clinical trial results. Our clinical trials may fail to demonstrate adequately the safety and efficacy of one or more of our product candidates, which would prevent or delay regulatory approval and commercialization.

Before obtaining regulatory approvals for the commercial sale of our product candidates, we must demonstrate through lengthy, complex and expensive preclinical testing and clinical trials that our product candidates are both safe and effective for use in each target indication. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process.

Additionally, because our product candidates are based on new technologies and costs to treat patients with relapsed/refractory cancer and to treat potential side effects that may result from our product candidates may be significant, our clinical trial costs are likely to be significantly higher than for more conventional therapeutic technologies or drug products. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. For example, although CRS-207 and GVAX Pancreas generated positive results in our Phase 2a metastatic pancreatic cancer study when compared to GVAX Pancreas alone and evaluated in second line or greater; CRS-207 and GVAX Pancreas failed to meet the primary endpoint of an improvement in overall survival for patients with metastatic pancreatic cancer (third line and greater) in our Phase 2b ECLIPSE trial when compared to chemotherapy. Further, based on preliminary results in subsequent trials of CRS-207 in mesothelioma and ovarian cancer as well as business and commercial factors, we determined not to continue the advancement of CRS-207. There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. We cannot be certain that we will not face similar setbacks. Most product candidates that commence clinical trials are never approved as commercial products.

Any delay, suspension, termination or request to repeat or redesign a trial could increase our costs and prevent or significantly delay our ability to commercialize our product candidates.

We may experience delays in our ongoing clinical trials, and we do not know whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. The commencement or completion of clinical trials can be delayed or aborted for a variety of reasons, including delays or failures related to:

- generating sufficient preclinical, toxicology or other in vivo or in vitro data to support the initiation of human clinical studies;
- obtaining regulatory approval to commence a trial;
- identifying, recruiting and training suitable clinical investigators;
- reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining institutional review board/ethics committee, or IRB/EC, approval at each site;
- recruiting suitable patients to participate in a trial, which may be more challenging for our LADD programs following our determination not to continue the advancement of CRS-207;
- achieving an acceptable distribution of such patients based on treating institution and geography;
- patients not completing a trial or not completing post-treatment follow-up;
- clinical sites deviating from trial protocol, instructions or dropping out of a trial;
- regulatory agency-imposed clinical holds;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of product candidate for use in clinical trials.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs/ECs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose a clinical hold or suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, a negative finding from an inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions, lack of adequate funding to continue the clinical trial, or safety concerns raised by other clinical trials of therapies with similar mechanisms of action.

If we experience delays in the completion, or termination, of any clinical trial of our product candidates, the commercial prospects of that product candidate will be harmed, and our ability to generate product revenues from the product candidate will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues.

Actual or potential conflicts of interest arising from our relationships with investigators could adversely impact the FDA approval process.

Principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive cash compensation in connection with such services. We also provide grants to investigators' institutions from time to time. If certain of these relationships exceed specific financial thresholds, they must be reported to the FDA. If these relationships and any related compensation paid results in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected interpretation of the study, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized, which could result in the delay in approval, or rejection, of our marketing applications by the FDA.

Our product candidates may cause undesirable side effects or may have other properties that could halt their clinical development, prevent their regulatory approval, limit their commercial potential, if approved, or result in significant negative consequences.

Side effects or adverse events associated with the use of our product candidates may be observed at any time, including in clinical trials or when a product is commercialized, and any such side effects or adverse events could cause us or regulatory authorities to interrupt, delay or halt clinical trials, result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities, or negatively affect our ability to market our product candidates. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics.

To date, patients treated with our product candidates have experienced drug-related side effects some of which were Grade 3 adverse events, or AEs, which are considered moderate, and some of which were Grade 4 AEs which are considered severe. Examples of the AEs experienced include among others, fevers, chills, nausea, vomiting, fatigue, headaches, hypotension and listeriosis. We cannot provide assurances that there will not be further adverse events.

If unacceptable side effects arise in the development of our product candidates, we could suspend or terminate our clinical trials or the FDA or comparable foreign regulatory authorities could order us to cease clinical trials, require us to conduct additional animal or human studies or deny approval of our product candidates for any or all targeted indications. For example, in October 2016 after receiving notification that a blood culture sample taken from an indwelling port of a metastatic pancreatic cancer patient tested positive for *Listeria*, the FDA placed clinical trials involving our LADD investigational agents on partial clinical hold to pause new patient enrollment. While this hold was lifted in November 2016, we cannot provide assurances that our trials will not be placed on additional clinical holds in the future. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. We expect to have to train medical personnel using our product candidates to understand the side effect profiles for our clinical trials and upon any commercialization of any of our product candidates. Inadequate training in recognizing or managing the potential side effects of our product candidates could result in patient injury or death. In addition, if side effects are observed in competing product candidates that are perceived to have similarities to ours, regulators or patients may infer that our product candidates could cause similar side effects. Any of these occurrences may materially and adversely affect our business, financial condition and results of operations.

Additionally, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such product;
- regulatory authorities may require additional warnings on the label;
- the FDA could require a Risk and Evaluation Medication Strategy, or REMS, which could require the creation and management of a medication guide, communication plan or other elements to ensure safe use;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could materially and adversely affect our business, financial condition and results of operations.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

The timely completion of clinical trials in accordance with their protocols depends on, among other things, our ability to enroll a sufficient number of patients who remain in the studies until their conclusion. We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The enrollment of patients depends on many factors, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial’s primary endpoints;
- the proximity of patients to study sites;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;

- clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before completion.

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Because the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials in such clinical trial sites. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy and hematopoietic cell transplantation, rather than enroll patients in any future clinical trial.

Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates.

The market opportunities for our product candidates may be limited to those patients who are ineligible for established therapies or for whom prior therapies have failed, and may be small.

Cancer therapies are sometimes characterized as first line, second line or third line, and the FDA often approves new therapies initially only for third line use. When cancer is detected early enough, first-line therapy, usually chemotherapy, hormone therapy, surgery, radiotherapy or a combination of these is sometimes adequate to cure the cancer or prolong life without a cure. Second- and third-line therapies are administered to patients when prior therapy is not effective. We expect to initially seek approval of our product candidates as a therapy for patients who have received one or more prior treatments. Subsequently, for those products that prove to be sufficiently beneficial, if any, we would expect to seek approval potentially as a first-line therapy, but there is no guarantee that our product candidates, even if approved, would be approved for first-line therapy, and, prior to any such approvals, we may have to conduct additional clinical trials.

Our projections of both the number of people who have the cancers we are targeting, as well as the subset of people with these cancers who have received one or more prior treatments, and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these cancers. The number of patients may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. Even if we obtain significant market share for our product candidates, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications, including to be used as a first- or second-line therapy.

We are subject to a multitude of manufacturing, supply chain, storage and distribution risks, any of which could substantially increase our costs and limit the supply of our product candidates.

The process of manufacturing our product candidates is complex, highly regulated and subject to several risks, including:

- The manufacturing of drug and biologic products is susceptible to product loss due to contamination, equipment failure, improper installation or operation of equipment or vendor or operator error. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If foreign microbial, viral or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, these manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination;
- 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;
- We and our contract manufacturers must comply with the FDA's current good manufacturing practices, or cGMP, regulations and guidelines. Any failure to follow cGMP or other regulatory requirements or any delay, interruption or other issues that arise in the manufacture, fill-finish, packaging or storage of our product candidates as a result of a failure of our facilities or the facilities or operations of third parties to comply with regulatory requirements or pass any regulatory authority inspection could significantly impair our ability to develop and commercialize our product candidates, including leading to significant delays in the availability of product candidates for our clinical studies, the

termination or hold on a clinical study, or the delay or prevention of a filing or approval of marketing applications for our product candidates. Significant noncompliance could also result in the imposition of sanctions, including fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation. If we are not able to maintain regulatory compliance, we may not be permitted to market our products and/or may be subject to product recalls, seizures, injunctions or criminal prosecution; and

- Our STING, B-select and LADD product candidates are sensitive to temperature, which must be controlled during storage and transportation, which adds complexity and expense. We rely on third parties to provide controlled temperature storage and shipping. If any third-party provider fails to maintain proper temperature control or if a shipment is delayed in transit for a prolonged period of time, the product candidate could become unsuitable for use.

Any adverse developments affecting manufacturing operations for our product candidates and/or damage that occurs during shipping may result in delays, inventory shortages, lot failures, withdrawals or recalls or other interruptions in the supply of our drug substance and drug product. We may also have to write off inventory, incur other charges and expenses for supply of drug product that fails to meet specifications, undertake costly remediation efforts or seek more costly manufacturing alternatives. Inability to meet the demand for any of our product candidates, if approved, could damage our reputation and the reputation of our products among physicians, healthcare payors, patients or the medical community, which could materially and adversely affect our business, financial condition and results of operations.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to generate product revenue.

We currently have only limited marketing capabilities and no sales or distribution capabilities and have no marketed products. We intend to develop an in-house commercial organization and sales force, which will require significant capital expenditures, management resources and time. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable or decide not to establish internal sales, marketing and distribution capabilities, we will pursue collaborative arrangements regarding the sales and marketing of our products; however, we cannot assure you that we will be able to establish or maintain such collaborative arrangements, or if we are able to do so, that they will have effective sales forces. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of such third parties, and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates.

We cannot assure you that we will be able to develop in-house sales and distribution capabilities or establish or maintain relationships with third-party collaborators to commercialize any product in the United States or elsewhere.

A variety of risks associated with conducting clinical trials and marketing our product candidates internationally could materially and adversely affect our business, financial condition and results of operations.

We plan to seek regulatory approval of our product candidates outside of the United States and, accordingly, we expect that we will be subject to additional risks related to operating in foreign countries in conducting clinical trials and if we obtain the necessary approvals, including:

- differing legal and regulatory requirements in foreign countries;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other 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 revenue, and other obligations incident to doing business in another country;
- difficulties staffing and managing foreign operations, including clinical trials;

- workforce uncertainty in countries where labor unrest is more common than in the United States;
- potential liability under the Foreign Corrupt Practices Act of 1977 or comparable foreign regulations;
- challenges to and protecting our contractual and intellectual property rights, including in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geo-political actions, including war and terrorism.

These and other risks associated with our international operations may materially and adversely affect our business, financial condition and results of operations.

We face significant competition from other biotechnology and pharmaceutical companies, and our business, financial condition and results of operations will suffer if we fail to compete effectively.

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our competitors may be able to develop other compounds or drugs that are able to achieve similar or better results.

Many major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies and universities and other research institutions continue to invest time and resources in developing novel approaches to immuno-oncology. Promising results have spurred significant competition from major pharmaceutical and biotechnology companies alike. Our competitors in the field of diversified immuno-oncology include: AstraZeneca PLC, Amgen Inc., Bristol-Myers Squibb Company, Celgene Corporation, Eli Lilly and Company, GlaxoSmithKline plc, Incyte Corporation, Janssen Pharmaceuticals, Merck & Co., Novartis AG, Pfizer Inc., Roche Holding AG, and Sanofi SA. Our competitors in STING-pathway technology include Merck & Co. and Spring Bank Pharmaceuticals; for anti-APRIL include Visterra, Inc.; for pLADD include Advaxis, Inc.; and for anti-CTLA-4 include Bristol-Myers Squibb Company. Many of our competitors have substantially greater financial, technical and other resources than we do, such as larger research and development staff and experienced marketing, market access and manufacturing organizations and well-established sales forces.

Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors, either alone or with collaborative partners, may succeed in developing, acquiring or licensing on an exclusive basis drug or biologic products that are more effective, safer, more easily commercialized or less costly than our product candidates or may develop proprietary technologies or secure patent protection that we may need for the development of our technologies and products. We believe the key competitive factors that will affect the development and commercial success of our product candidates are efficacy, safety, tolerability, reliability, convenience of use, price and reimbursement.

Even if we obtain regulatory approval of our product candidates, the availability and prices of our competitors' products could limit the demand and the prices we are able to charge for our product candidates. We may not be able to implement our business plan if the acceptance of our product candidates is inhibited by price competition or the reluctance of physicians to switch from existing methods of treatment to our product candidates, or if physicians switch to other new drug or biologic products or choose to reserve our product candidates for use in limited circumstances.

We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management, scientific and medical personnel, including our President and Chief Executive Officer, our Chief Scientific Officer, our Chief Medical Officer and our Chief Financial Officer, as well as Vice President of Antibody Research and European site head in the Netherlands. The loss of the services of any of our executive officers other key employees and other scientific and medical advisors, and our inability to find suitable replacements, could result in delays in product development and harm our business. The Northern California region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all.

Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us on short notice. Although we have employment agreements with our key employees, these employment agreements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. We do not maintain "key person" insurance policies on the lives of these individuals or the lives of any of our other employees.

We will need to grow the size of our organization, and we may experience difficulties in managing this growth.

At June 30, 2018, we had 155 full-time employees, including 118 employees engaged in research and development. As our development and commercialization plans and strategies develop, we expect to need additional managerial, operational, sales, marketing, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our internal development efforts effectively, including the clinical and FDA review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to commercialize our product candidates will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain independent organizations, advisors and consultants to provide certain services, including substantially all aspects of regulatory approval, clinical management and manufacturing. We cannot assure you that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis or reasonable economic terms when needed, or at all. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval of our product candidates or otherwise advance our business.

If we are not able to effectively expand our organization by hiring new employees and expanding our groups of consultants and contractors, we may not succeed in further developing and commercializing our product candidates and, accordingly, may not achieve our research, development and commercialization goals.

Our internal computer systems, or those used by our CROs or other contractors, consultants or vendors, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors, consultants or vendors are vulnerable to damage from computer viruses and unauthorized access. Any such material system failure or security breach could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. 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 and commercialization of our product candidates could be delayed.

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

Our operations, and those of our CROs and other contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We rely on third-party manufacturers to produce and process our product candidates on a patient by patient basis. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption. Our corporate headquarters is in Northern California near major earthquake faults and fire zones. The ultimate impact on us, our significant suppliers and our general infrastructure of being located near major earthquake faults and fire zones and being consolidated in certain geographical areas is unknown, but our operations and financial condition could suffer in the event of a major earthquake, fire or other natural disaster.

Even if we obtain regulatory approval of our product candidates, the products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers and others in the medical community.

The use of STING Pathway Activator, B-select or LADD product candidates as potential cancer treatments, even if approved, may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers and others in the medical community. For example, certain of the product candidates that we are developing target a cell surface marker that may be present on non-cancerous cells as well as cancer cells. It is possible that our product candidates may kill these non-cancerous cells, which may result in unacceptable side effects, including death. Additional factors will influence whether our product candidates are accepted in the market, including:

- the clinical indications for which our product candidates are approved;
- physicians, hospitals, cancer treatment centers and patients considering our product candidates as a safe and effective treatment;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence and severity of any side effects;
- side effects or results reported for competing products or product candidates that are perceived to have similarities to ours;
- product labeling or product insert requirements of the FDA or other regulatory authorities, including limitations or warnings;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment in relation to alternative treatments;
- the availability of adequate coverage, reimbursement and pricing by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors and government authorities;
- adverse publicity or ethical or social controversies related to the use of our technologies or similar technologies;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies; and
- the effectiveness of our sales and marketing efforts.

If our product candidates are approved but fail to achieve or maintain market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability as a result of the clinical testing of our product candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if our product candidates cause or are perceived to cause injury or are found to be otherwise unsuitable during clinical testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management’s time and our resources;
- substantial monetary awards to trial participants or patients;

- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize any product candidate; and
- a decline in our share price.

We currently hold product liability insurance in amounts that we believe are customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks, but 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 sufficient product liability insurance at an acceptable cost to protect against potential product liability claims, which could inhibit the commercialization of products we develop, alone or with collaborators. Our insurance policies may have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Even if our agreements with any future corporate collaborators entitle us to indemnification against losses, such indemnification may not be available or adequate should any claim arise.

Risks Related to Our Reliance on Third Parties

We have entered into licensing agreements with third parties for certain product candidates and as a result have placed restrictions on our development of certain product candidates for particular indications. We may elect to enter into additional licensing or collaboration agreements to partner our product candidates in territories we currently retain. Our dependence on such relationships may adversely affect our business.

We have, and we may seek to enter into additional, collaboration agreements with other pharmaceutical or biotechnology companies. Any failure by our partners to perform their obligations or any decision by our partners to terminate these agreements could negatively impact our ability to successfully develop, obtain regulatory approvals for and commercialize our product candidates. In the event we grant exclusive rights to such partners, we would be precluded from potential commercialization of our product candidates within the territories in which we have a partner. For example, we have entered into a collaboration and license agreement with Novartis for the development and commercialization of STING Activator product candidates in oncology. Under this agreement, we have granted Novartis a co-exclusive license to develop such products worldwide and an exclusive license to commercialize such products outside of the United States. We have also entered into a worldwide development and commercialization agreement with Merck for the development of an anti-CD27 agonist. In addition, we have entered into exclusive research and license agreements with Janssen for the development and commercialization of ADU-741, GVAX for prostate cancer and ADU-214 for lung cancer. Under these agreements, we have granted Janssen exclusive rights to develop and commercialize LADD product candidates for prostate and lung cancers. We have granted Janssen exclusive rights to develop and commercialize LADD product candidates with certain antigens and antigen combinations implicated in lung and other cancers for all fields of use. In addition, any termination of our collaboration agreements will terminate the funding we may receive under the relevant collaboration agreement and may impair our ability to fund further development efforts and our progress in our development programs.

Our commercialization strategy for our product candidates may depend on our ability to enter into agreements with collaborators to obtain assistance and funding for the development and potential commercialization of our product candidates in the territories in which we seek to partner. Despite our efforts, we may be unable to secure additional collaborative licensing or other arrangements that are necessary for us to further develop and commercialize our product candidates. Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more collaboration agreements, collaborations may involve greater uncertainty for us, as we have less control over certain aspects of our collaborative programs than we do over our proprietary development and commercialization programs. For example, under our collaboration and license agreement with Novartis, we are responsible for a share of the worldwide joint development costs, which may be significant. If we elect to reduce our share of development funding as provided for under the agreement, our share in profits would decrease or convert to a royalty. We may determine that continuing a collaboration under the terms provided is not in our best interest, and we may terminate the collaboration. Our potential future collaborators could delay or terminate their agreements with us, and as a result our product candidates may never be successfully commercialized.

Further, our collaborators may develop alternative products or pursue alternative technologies either on their own or in collaboration with others, including our competitors, and the priorities or focus of our collaborators may shift such that our product candidates receive less attention or resources than we would like, or they may be terminated altogether. In addition, we could have disputes with our collaborators, including regarding development plans or the interpretation of terms in our agreements. Any such disagreements could lead to delays in the development or commercialization of our product candidates or could result in time-consuming and expensive litigation or arbitration, which may not be resolved in our favor.

We rely and will rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or otherwise conduct the trials as required or comply with regulatory requirements, we may not be able to obtain regulatory approval of or commercialize our product candidates when expected or at all.

We depend and plan to continue to depend upon independent investigators, other third parties and collaborators, such as universities, medical institutions, CROs and strategic partners, to conduct our preclinical and clinical trials under agreements with us. We have to negotiate budgets and contracts with CROs and study sites, which may result in delays to our development timelines and increased costs. We rely and plan to continue relying heavily on these third parties over the course of our clinical trials, and we control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with good clinical practices, or GCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of these third parties fail to comply with applicable GCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, such regulatory authorities will determine that any of our clinical trials comply with the GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMPs regulations. Our failure or any failure by these third parties to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Any third parties conducting our clinical trials are not our employees and, except for remedies available to us under our agreements with such third parties, we cannot control whether or not they devote sufficient time and resources to our ongoing preclinical, clinical and nonclinical programs. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies or other drug development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to complete development of, obtain regulatory approval of or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenue could be delayed.

If our relationships with any third parties conducting our trials are terminated, we may be unable to enter into arrangements with alternative third parties on commercially reasonable terms, or at all. Switching or adding third parties to conduct our clinical trials involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with third parties conducting our clinical trials, we cannot assure you that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material and adverse effect on our business, financial condition and results of operations.

We are subject to a multitude of manufacturing risks, any of which could substantially increase our costs, limit supply of our product candidates and interfere with obtaining product commercialization approvals.

We currently rely on outside vendors to manufacture clinical supplies of our product candidates and have limited experience manufacturing our product candidates. In order to develop our product candidates, apply for regulatory approvals and commercialize our products, if approved, we will need to develop, contract for, or otherwise arrange for the necessary manufacturing capabilities.

We will likely manufacture limited quantities of clinical trial materials ourselves in the future, but we currently rely on a limited number of contract manufacturing organizations, or CMOs, for our clinical product supplies. There are risks inherent in the manufacture of drug and biologic products that could affect the ability of our CMOs to meet our delivery time requirements or provide adequate amounts of material to meet our needs. Manufacturers of biologic products often encounter difficulties in production,

particularly in scaling up and validating initial production. Typical manufacturing problems include low product yields, quality control failures, product instability, operator error, shortages of qualified personnel, storage mistakes and unpredictable production costs. If contaminants are discovered in our supply of our product candidates or in the manufacturing facilities, manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination, thereby interrupting supply.

If in the future we develop our own manufacturing capabilities by building our own manufacturing facilities, we will incur significant expenditures. In addition, the construction and qualification of a drug substance facility may take several years to complete and there are many risks inherent in the construction of a new facility that could result in delays and additional costs, including the need to obtain access to necessary equipment and third-party technology, if any. In addition, we would likely need to continue to hire and train qualified employees to staff our facilities.

The manufacturing process for any products that we may develop is subject to the FDA and foreign regulatory authority approval process and we will need to meet, and will need to contract with CMOs who can meet, all applicable FDA and foreign regulatory authority requirements on an ongoing basis. In addition, if we receive the necessary regulatory approval for any product candidate, we also expect to rely on third parties to produce materials required for commercial supply. If we are unable to obtain or maintain CMOs for these product candidates, or to do so on commercially reasonable terms, we may not be able to successfully develop and commercialize our products.

To the extent that we have existing, or enter into future, manufacturing arrangements with third parties, we depend, and will depend in the future, on these third parties to perform their obligations in a timely manner and consistent with contractual and regulatory requirements. The failure of any CMO to perform its obligations as expected, or, to the extent we manufacture all or a portion of our product candidates ourselves, our failure to execute on our manufacturing requirements, could materially and adversely affect our business, financial condition and results of operations.

If any CMO with whom we contract fails to perform its obligations, our ability to provide our product candidates to patients in clinical trials would be jeopardized. Any delay or interruption in the supply of clinical trial materials could delay the completion of clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely.

We may not realize the benefits of acquisitions or strategic transactions, including our acquisition of Aduro Biotech Europe.

We acquired Aduro Biotech Europe in October 2015, and may acquire or license other businesses, products or technologies, as well as pursue strategic alliances, joint ventures or investments in complementary businesses. The success of acquisitions, including our acquisition of Aduro Biotech Europe, and any future strategic transactions, depends on a number of risks and uncertainties, including:

- unanticipated liabilities related to acquired companies;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- retention of key employees;
- diversion of management time and focus from operating our business to identification, negotiation or management of any strategic alliances or joint ventures or acquisition integration challenges;
- increases in expenses and reductions in our cash available for operations and other uses;
- disruption in our relationships with collaborators or suppliers as a result of such a transaction;
- stock issuances that dilute existing stockholders;
- competition for appropriate strategic alternatives;
- difficulty negotiating or executing any such arrangements; and
- possible write-offs or impairment charges relating to acquired businesses.

If any of these risks or uncertainties occur, we may not realize the anticipated benefit of any acquisition or strategic transaction. For example, Aduro Biotech Europe’s B-select antibody platform may fail to identify product candidates that are safe and effective, or at all. Additionally, foreign acquisitions, including our acquisition of Aduro Biotech Europe, are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations and the particular economic, political and regulatory risks associated with specific countries.

Risks Related to Government Regulation

The FDA regulatory approval process is lengthy, time-consuming and inherently unpredictable, and we may experience significant delays in the clinical development and regulatory approval of our product candidates or ultimately be unable to obtain regulatory approval for our product candidates, in which case our business will be substantially harmed.

We will not be permitted to market any of our product candidates in the United States until approval from the FDA is received. The time required to obtain approval by the FDA and comparable foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not previously submitted a biologics license application, or BLA, or a new drug application, or NDA, to the FDA, or similar marketing applications filings to comparable foreign authorities. A BLA or NDA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety, purity and potency, or safety and effectiveness for each desired indication. The BLA or NDA must also include significant information regarding the chemistry, manufacturing and controls for the product. We expect the novel nature of our product candidates to create further challenges in obtaining regulatory approval. For example, the FDA has limited experience with commercial development of immunotherapies for cancer. We also intend to obtain regulatory approval of future product candidates regardless of cancer type or origin, which the FDA may have difficulty accepting if our clinical trials only involve cancers of certain origins. Accordingly, the regulatory approval pathway for our product candidates may be uncertain, complex, expensive and lengthy, and approval may not be obtained.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a BLA, NDA or other submission, or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; or
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a product candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing,

marketing and promotion of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical trials as clinical studies conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the United States have requirements for approval of product candidates with which we must comply prior to marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Even if we receive regulatory approval of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any regulatory approvals that we receive for our product candidates may be subject to limitations on the approved indicated uses for which the products may be marketed or the conditions of approval, or contain requirements for potentially costly post-market testing and surveillance to monitor the safety and efficacy of the product candidates. We will be required to immediately report any serious and unexpected adverse events and certain quality or production problems with our products to regulatory authorities along with other periodic reports. The FDA may also require a risk evaluation and mitigation strategy, or REMS, as a condition of approval of our product candidates, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools.

In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our product candidates will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports and registration, as well as continued compliance with cGMPs and GCPs for any clinical trials that we conduct post-approval. We will also have to comply with requirements concerning advertising and promotion for any of our product candidates that receive regulatory approval.

Later discovery of previously unknown problems with our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or adverse publicity;
- holds on clinical trials;
- refusal by regulatory authorities to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of regulatory approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

Any new legislation addressing drug or biologic products could result in delays in product development or commercialization, or increased costs to assure compliance. In addition, the FDA's and other regulatory authorities' policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. 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 abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Coverage and reimbursement may be limited or unavailable in certain market segments for our product candidates, which could make it difficult for us to sell our product candidates profitably.

Successful sales of our product candidates, if approved, depend, in part, on the availability of adequate coverage and reimbursement from third-party payors. In addition, because our product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue from our product candidates.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Adequate coverage and reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs and treatments they will cover and the amount of reimbursement. Reimbursement by a third-party payor may depend upon a number of factors, including, but not limited to, the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement approval of a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. Even if we obtain coverage for a given product, the resulting reimbursement payment rates might not be adequate for us to achieve or sustain profitability or may require co-payments that patients find unacceptably high. Further, we plan to develop our product candidates for use in combination with other products, which may make them cost prohibitive or less likely to be covered by third-party payors. Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates.

In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific, clinical and cost-effectiveness data and support for the use of our product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained. We intend to seek approval to market our product candidates in both the United States and in selected foreign jurisdictions. If we obtain approval in one or more foreign jurisdictions for our product candidates, we will be subject to rules and regulations in those jurisdictions.

Our product candidates may be subject to government price controls that may affect our revenue.

There has been heightened governmental scrutiny in the United States and abroad of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. In the United States, at the federal level such scrutiny has resulted in several recent congressional inquiries and proposed legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. Congress and the Trump administration have each indicated that they will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Outside of the United States, particularly in the EU, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain coverage and reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

Third-party payors, whether domestic or foreign, governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to health care systems that could impact our ability to sell our products profitably. In particular, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Affordable Care Act, was enacted. The Affordable Care Act and its implementing regulations, among other things, subjected biologic products to potential competition by lower-cost biosimilars, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, provided incentives to programs that increase the federal government's comparative effectiveness research and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Some of the provisions of the Affordable Care Act have yet to be implemented, and there have been judicial and Congressional challenges to certain aspects of the Affordable Care Act, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the Affordable Care Act. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of any certain provisions of the Affordable Care Act or otherwise circumvent some of the requirements for health insurance mandated by the Affordable Care Act. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the Affordable Care Act have been enacted. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year (this requirement was commonly referred to as the "individual mandate)." Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain fees mandated fees under the Affordable Care Act, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Congress may consider other legislation to repeal or replace other elements of the Affordable Care Act. Thus, the full impact of the Affordable Care Act, or any law replacing elements of it, on our business remains unclear. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our drugs.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013, and will remain in effect through 2027 unless additional Congressional action is taken. In January 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 cancer treatment centers, 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 foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. For example, there have been several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer's patient programs, and reform government program reimbursement methodologies for pharmaceutical products. At the federal level, Congress and the Trump administration have each indicated that it will continue to pursue new legislative and/or administrative measures to control drug costs. Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our product candidates, if we obtain regulatory approval;
- our ability to set prices that we believe are fair for our products;
- our ability to generate revenue and achieve or maintain profitability;

- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the regulatory approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent regulatory approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

Our current and future relationships with customers and third-party payors in the United States and elsewhere may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with third-party payors, healthcare providers, patients and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act, which may constrain the business or financial arrangements and relationships through which we research, develop, sell, market and distribute any drugs for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy regulation by the U.S. federal and state governments and by governments in foreign jurisdictions in which we conduct our business. The applicable federal, state and foreign healthcare laws and regulations that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity can be found guilty of violating the statute without actual knowledge of the statute or specific intent to violate it. In addition, 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 False Claims Act;
- federal civil and criminal false claims laws, including the federal False Claims Act, and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid or other third-party payors that are false or fraudulent or knowingly making a false statement to improperly 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 created federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity can be found guilty of violating these statutes without actual knowledge of the statutes or specific intent to violate them;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;
- the federal Physician Payments Sunshine Act, created under the Affordable Care Act, and its implementing regulations, which require manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services, or HHS, information related to payments or other transfers of value

made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members and payments or other "transfers of value" made to such physician owners;

- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state and foreign 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 or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available under such laws, it is possible that some of our business activities could be subject to challenge under one or more of such laws. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Responding to investigations can be time-and resource-consuming and can divert management's attention from the business. Additionally, as a result of these investigations, healthcare providers and entities may have to agree to additional onerous compliance and reporting requirements as part of a consent decree or corporate integrity agreement. Any such investigation or settlement could increase our costs or otherwise have a material and adverse effect on our business, financial condition and results of operations.

If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, disgorgement, imprisonment, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, exclusion from participation in federal and state healthcare programs and the curtailment or restricting of our operations, any of which could harm our ability to operate our business and our financial results. In addition, the approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

If we or our third-party manufacturers use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by us and our third-party manufacturers. We and our manufacturers are subject to federal, state and local laws and regulations in the United States governing the use, manufacture, storage, handling and disposal of medical and hazardous materials. Although we believe that our and our manufacturers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could materially and adversely affect our business, financial condition and results of operations.

We are subject to governmental regulation and other legal obligations related to privacy, data protection and information security. Compliance with these requirements could result in additional costs and liabilities to us or inhibit our ability to collect and process data, and the failure to comply with such requirements could have a material adverse effect on our business, financial condition or results of operations.

Privacy and data security have become significant issues in the United States, Europe and in many other jurisdictions where we may in the future conduct our operations. As we receive, collect, process, use and store personal and confidential data, we are subject to diverse laws and regulations relating to data privacy and security, including, in the United States, the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, and, in the European Union (EU) and shortly in the European Economic Area (EEA), Regulation 2016/679, known as the General Data Protection Regulation, or GDPR. Compliance with these privacy and data security requirements is rigorous and time-intensive and may increase our cost of doing business, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation and reputational harm, which could materially and adversely affect our business, financial condition and results of operations.

In addition, the regulatory framework for the receipt, collection, processing, use, safeguarding, sharing and transfer of personal and confidential data is rapidly evolving and is likely to remain uncertain for the foreseeable future as new global privacy rules are being enacted and existing ones are being updated and strengthened. For example, on May 25, 2018, the GDPR took effect in Europe. The GDPR is directly applicable in each EU member state and applies to companies established in the EU as well as companies that collect and use personal data to offer goods or services to, or monitor the behavior of, individuals in the EU, including, for example, through the conduct of clinical trials. GDPR introduces more stringent data protection obligations for processors and controllers of personal data, and penalties and fines for failure to comply with GDPR are significant, including fines of up to €20 million or 4% of total worldwide annual turnover, whichever is higher.

Risks Related to Our Intellectual Property

If we are unable to protect our intellectual property rights or if our intellectual property rights are inadequate for our technology and product candidates, our competitive position could be harmed.

Our commercial success will depend in part on our ability to obtain and maintain patent and other intellectual property protection in the United States and other countries with respect to our proprietary technology and products. We rely on trade secret, patent, copyright and trademark laws, and confidentiality, licensing and other agreements with employees and third parties, all of which offer only limited protection. We seek to protect our proprietary position by filing and prosecuting patent applications in the United States and abroad related to our novel technologies and products that are important to our business.

The patent positions of biotechnology and pharmaceutical companies generally are highly uncertain, involve complex legal and factual questions and have been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patents, including those patent rights licensed to us by third parties, are highly uncertain. The steps we or our licensors have taken to protect our proprietary rights may not be adequate to preclude misappropriation of our proprietary information or infringement of our intellectual property rights, both inside and outside of the United States. Further, the examination process may require us or our licensors to narrow the claims for our pending patent applications, which may limit the scope of patent protection that may be obtained if these applications issue. The rights already granted under any of our currently issued patents or those licensed to us and those that may be granted under future issued patents may not provide us with the proprietary protection or competitive advantages we are seeking. If we or our licensors are unable to obtain and maintain patent protection for our technology and products, or if the scope of the patent protection obtained is not sufficient, our competitors could develop and commercialize technology and products similar or superior to ours, and our ability to successfully commercialize our technology and products may be adversely affected. It is also possible that we or our licensors will fail to identify patentable aspects of inventions made in the course of our development and commercialization activities before it is too late to obtain patent protection on them.

With respect to patent rights, we do not know whether any of the pending patent applications for any of our compounds or biologic products will result in the issuance of patents that effectively protect our technology or products, or if any of our issued patents or if any of our or our licensors' issued patents will effectively prevent others from commercializing competitive technologies and products. 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 or licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions.

Our pending applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. Because the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, issued patents that we own or have licensed from third parties may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in the loss of patent protection, the narrowing of claims in such patents or the invalidity or unenforceability of such patents, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection for our technology and products. Protecting against the unauthorized use of our or our licensor's patented technology, trademarks and other intellectual property rights is expensive, difficult and may in some cases not be possible. In some cases, it may be difficult or impossible to detect third-party infringement or misappropriation of our intellectual property rights, even in relation to issued patent claims, and proving any such infringement may be even more difficult. For example, two of our patents, U.S. Patent Nos. 7,842,289 and 7,935,804, have previously been subject to reexamination proceedings in the U.S. Patent and Trademark Office, or USPTO, at the request of a third party.

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.

Our commercial success depends upon our ability to develop, manufacture, market and sell our product candidates, and to use our related proprietary technologies without infringing the intellectual property rights of third parties. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our product candidates, including interference or derivation proceedings before the USPTO. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future. If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue commercializing our product candidates. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Under certain circumstances, we could be forced, including by court order, to cease commercializing our product candidates. In addition, in any such proceeding or litigation, we could also be found liable for monetary damages. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially and adversely affect our business, financial condition and results of operations. Any claims by third parties that we have misappropriated their confidential information or trade secrets could have a similar negative impact on our business, financial condition and results of operations.

While our product candidates are in preclinical studies and clinical trials, we believe that their use in these preclinical studies and clinical trials falls within the scope of the exemptions provided by 35 U.S.C. Section 271(e) in the United States, which generally exempts from patent infringement liability activities reasonably related to the development and submission of information to the FDA. As our product candidates progress toward commercialization, the possibility of a patent infringement claim against us increases. We attempt to ensure that our product candidates and the methods we employ to manufacture them, as well as the methods for their use that we intend to promote, do not infringe other parties' patents and other proprietary rights. We cannot assure you they do not, however, and competitors or other parties may assert that we infringe their proprietary rights in any event.

In addition, we are testing our product candidates administered with other product candidates or products that are covered by patents held by other companies or institutions. In the event that a labeling instruction is required in product packaging recommending that combination, we could be accused of, or held liable for, infringement of the third-party patents covering the product candidate or product recommended for administration with our product candidates. In such a case, we could be required to obtain a license from the other company or institution to use the required or desired package labeling, which may not be available on commercially reasonable terms, or at all.

We are aware of certain U.S. and foreign patents owned by a certain third party with claims that are broadly directed to a *Listeria* vaccine strain that contains certain proteins, some of these patents expire as late as 2021. These patents could be construed to cover CRS-207. While we do not currently expect a product launch of an Aduro product prior to expiration of the above patents and, therefore, the patents would not appear relevant to our commercialization plans, our approval could be accelerated or the patents could be extended.

If we breach any of our license agreements, it could have a material adverse effect on our commercialization efforts for our product candidates.

Our commercial success depends on our ability, and the ability of our licensors and collaborators, to develop, manufacture, market and sell our product candidates and use our licensors' or collaborators' proprietary technologies without infringing the property rights of third parties. For example, we have entered into license agreements with the Regents of the University of California related to our LADD product candidates, and license agreements with Karagen Pharmaceuticals, Inc. and the Regents of the University of California and a consortium of universities led by Memorial Sloan Kettering related to STING Activators, and we expect to enter into additional licenses in the future. If we fail to comply with the obligations under these agreements, including payment and diligence terms, our licensors may have the right to terminate these agreements, in which event we may not be able to develop, manufacture, market or sell any product that is covered by these agreements or may face other penalties under the agreements. Such an occurrence could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or reinstated agreements, which may not be available to us on equally favorable terms, or at all, or cause us to lose our rights under these agreements, including our rights to intellectual property or technology important to our development programs.

We have granted our partners rights to control certain matters related to our intellectual rights for licensed products. Our inability to control the filing, prosecution, maintenance and enforcement of such patents could materially and adversely affect our business, financial condition and results of operations.

As part of the license agreements with Janssen related to ADU-214 or ADU-741, we have granted Janssen the initial right and responsibility to file, prosecute, maintain and enforce any patents and patent applications that contain pending or issued claims that are specifically directed to the antigens contained in ADU-214 or ADU-741, including the rights to determine the strategy to apply for the extension of the term of certain licensed patents. As part of the license agreement with Merck related to anti-CD27, we have granted Merck the first rights to prosecute certain patent rights and rights to determine the strategy to apply for patent term extensions, and we are required to consult with Merck with respect to infringement matters related to certain licensed patents. Our inability to control these intellectual property rights could materially harm our business. For example, if a third party is infringing one of the antigen-specific patents by marketing a product that is identical or similar to ADU-214 for the treatment of lung cancer (such as a biosimilar of ADU-214), Janssen would have the initial right to enforce the antigen-specific patents against the third party and may make decisions with which we may not agree. Further, these partners may decide not to apply for extension of any term of a licensed patent that may otherwise be eligible for extension, which could decrease the royalties for the sale of products relating to such patents.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on all of our product candidates throughout the world would be prohibitively expensive, and our or our licensors' intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws and practices of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we and our licensors may not be able to prevent third parties from practicing our and our licensors' inventions in all countries outside the United States, or from selling or importing products made using our and our licensors' inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products, and may export otherwise infringing products to territories where we or our licensors have patent protection, but where enforcement is not as strong as that in the United States. These products may compete with our products in jurisdictions where we do not have any issued patents, and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our or our licensors' patents or marketing of competing products in violation of our proprietary rights generally in those countries. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business, could put our and our licensors' patents at risk of being invalidated or interpreted narrowly and our and our licensors' patent applications at risk of not issuing and could provoke third parties to assert claims against us or our licensors. We or our licensors may not prevail in any lawsuits that we or our licensors initiate and the damages or other remedies awarded, if any, may not be commercially meaningful.

The laws of certain foreign countries may not protect our rights to the same extent as the laws of the United States, and these foreign laws may also be subject to change. For example, methods of treatment and manufacturing processes may not be patentable in certain jurisdictions, and the requirements for patentability may differ in certain countries, particularly developing countries. Furthermore, generic and/or biosimilar product manufacturers or other competitors may challenge the scope, validity or enforceability of our or our licensors' patents, requiring us or our licensors to engage in complex, lengthy and costly litigation or other proceedings.

Generic or biosimilar product manufacturers may develop, seek approval for, and launch generic or biosimilar versions, respectively, of our products. The FDA has published four draft guidance documents on biosimilar product development. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biosimilar and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. However, complexities associated with the larger, and often more complex, structures of biological products, as well as the process by which such products are manufactured, pose significant hurdles to implementation, which are still being worked out by the FDA. To date, no biosimilar or interchangeable biologic has been licensed under the Biologics Price Competition and Innovation Act of 2009, or BPCIA, framework, although such approvals have occurred in Europe, and it is anticipated that the FDA will approve a biosimilar in the relatively near future. If any of our product candidates are approved by the FDA, the approval of a biologic product biosimilar to one of our products could materially and adversely affect our business, financial condition and results of operations. In particular, a biosimilar could be significantly less costly to bring to market and priced significantly lower than our products, if approved by the FDA.

Some jurisdictions may require us to grant licenses to third parties. Such compulsory licenses could be extended to include some of our product candidates, which may limit our potential revenue opportunities.

Many countries, including European Union countries, have compulsory licensing laws under which a patent owner may be compelled under certain circumstances to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our and our licensors' efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time, and our product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.

Given the amount of time required for the development, testing and regulatory review of new product candidates, such as our product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Currently, we own or license patent families that cover our LADD technology platform, which expire between 2022 and 2027, subject to any extensions, and we own or license patent families that cover *Listeria* strains engineered to express, or improve the expression of, particular antigens, which, if issued, will expire between 2031 and 2037. We also own or license patent families that cover STING Activators, which, expire, or if issued will expire, between 2025 and 2038, subject to any extensions. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

The BPCIA established legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an existing branded product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty. While it is uncertain when such processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We anticipate being awarded market exclusivity for each of our biological product candidates that is subject to its own BLA for 12 years in the United States, 10 years in Europe and significant durations in other markets. However, the term of the patents that cover such product candidates may not extend beyond the applicable market exclusivity awarded by a particular country. For example,

in the United States, if all of the patents that cover our particular biologic product expire before the 12-year market exclusivity expires, a third party could submit a marketing application for a biosimilar product four years after approval of our biologic product, and the FDA could immediately review the application and approve the biosimilar product for marketing 12 years after approval of our biologic. Alternatively, a third party could submit a BLA for a similar or identical product any time after approval of our biologic product, and the FDA could immediately review and approve the similar or identical product for marketing and the third party could begin marketing the similar or identical product upon expiry of all of the patents that cover our particular biologic product.

Additionally, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. The extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

Changes in patent law could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

As is the case with other pharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the pharmaceutical industry involves technological and legal complexity, and obtaining and enforcing pharmaceutical patents is costly, time-consuming and inherently uncertain. 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. For example, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our and our licensors' ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our and our licensors' ability to obtain new patents or to enforce existing patents and patents we and our licensors may obtain in the future. Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our and our licensors' patent applications and the enforcement or defense of our or our licensors' issued patents.

For instance, under the Leahy-Smith America Invents Act, or the Leahy-Smith Act, U.S. patent applications containing or at that at any time contained a claim not entitled to priority before March 16, 2013 are subject to a "first to file" system, in which the first inventor to file a patent application will be entitled to the patent. This "first to file" system requires us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to file any patent application related to our product candidates. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our licensors fail to maintain the patents and patent applications covering our product candidates, our competitive position would be adversely affected.

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time consuming and unsuccessful and have a material and adverse effect on our business, financial condition and results of operations.

Competitors may infringe our patents or misappropriate or otherwise violate our intellectual property rights. To counter infringement or unauthorized use, litigation may be necessary in the future to enforce or defend our intellectual property rights, to protect our trade secrets or to determine the validity and scope of our own intellectual property rights or the proprietary rights of others. Also, third parties may initiate legal proceedings against us or our licensors to challenge the validity or scope of intellectual property rights we own or control. These proceedings can be expensive and time consuming. Many of our current and potential competitors have the ability to dedicate substantially greater resources to defend their intellectual property rights than we can. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Litigation could result in substantial costs and diversion of management resources, which could harm our business and

financial results. In addition, in an infringement proceeding, a court may decide that a patent owned by or licensed to us 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. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly. 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. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments in any such proceedings. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of shares of our common stock.

We may be subject to claims by third parties asserting that our licensors, employees or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees and our licensors' employees, including our senior management, were previously employed at universities or at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Some of these employees, including each member of our senior management, executed proprietary rights, non-disclosure and non-competition agreements, or similar agreements, in connection with such previous employment. 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 third party. Litigation may be necessary to defend against such claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel or sustain damages. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products. Such a license may not be available on commercially reasonable terms or at all. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- Others may be able to make compounds or biologics that are the same as or similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed.
- We or our licensors or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or have exclusively licensed.
- We or our licensors might not have been the first to file patent applications covering certain of our inventions.
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights.
- It is possible that our pending patent applications will not lead to issued patents.
- Issued patents that we own or have licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges.
- Our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets.
- We may not develop additional proprietary technologies that are patentable.
- The patents of others may have an adverse effect on our business.

If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.

In addition to patent protection, we also rely on other proprietary rights, including protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of trade secrets and proprietary information, we enter into confidentiality agreements with our employees, consultants and collaborators upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. Our agreements with

employees also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our confidential information. The disclosure of our trade secrets would impair our competitive position and may materially and adversely affect our business, financial condition and results of operations.

Risks Related to Our Financial Results

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 may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. From time to time, in addition to existing agreements with Novartis, Janssen and Merck, we may enter into license or collaboration agreements with other companies that include development funding and significant upfront and milestone payments and/or royalties, which may become an important source of our revenue. Accordingly, our revenue may depend on development funding and the achievement of development and clinical milestones under current and any potential future license and collaboration agreements and sales of our products, if approved. These upfront and milestone payments may vary significantly from period to period and any such variance could cause a significant fluctuation in our operating results from one period to the next.

In addition, we measure compensation cost for stock-based awards made to employees at the grant date of the award, based on the fair value of the award as approved by the compensation committee and sub-committees, and recognize the cost as an expense over the employee's requisite service period. As the variables that we use as a basis for valuing these awards change over time, including our underlying stock price and stock price volatility, the magnitude of the expense that we must recognize may vary significantly.

Furthermore, 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 current and any future product candidates, which will change from time to time;
- our ability to enroll patients in clinical trials and the timing of enrollment;
- the cost of manufacturing our current and any future product candidates, which may vary depending on FDA guidelines and requirements, 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 timing and outcomes of clinical studies for our product candidates or competing product candidates;
- competition from existing and potential future drugs that compete with our product candidates, and changes in the competitive landscape of our industry, including consolidation among our competitors or partners;
- any delays in regulatory review or approval of our product candidates;
- the level of demand for our product candidates, if approved, which may fluctuate significantly and be difficult to predict;
- 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;
- our ability to commercialize our product candidates, if approved, inside and outside of the United States, either independently or working with third parties;
- our ability to establish and maintain collaborations, licensing or other arrangements;
- our ability to adequately support future growth;
- potential unforeseen business disruptions that increase our costs or expenses;

- future accounting pronouncements or changes in our accounting policies; and
- the changing and volatile global economic environment.

The cumulative effect 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 revenue or 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 revenue and/or earnings guidance we may provide.

The recently passed comprehensive tax reform bill could materially and adversely affect our business, financial condition and results of operations.

On December 22, 2017, President Donald J. Trump signed into law new tax legislation, the Tax Cuts and Jobs Act of 2017 (the "Tax Act"), which significantly changes the Internal Revenue Code of 1986, as amended. The Tax Act, among other things, contains significant changes to corporate taxation, including (1) reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%; (2) limitation of the tax deduction for interest expense, generally to 30% of adjusted earnings (as specifically calculated for this purpose); (3) for net operating losses generated after 2017, limitation of the deduction to 80% of current year taxable income, indefinite carryforwards, and elimination of carrybacks; (4) certain changes in the treatment of offshore earnings regardless of whether they are repatriated; (5) mandatory capitalization of research and development expenses beginning in 2022; (6) immediate deductions for certain new investments instead of deductions for depreciation expense over time; (7) further deduction limits on executive compensation; and (8) modifying, repealing and creating many other business deductions and credits, including the reduction in the orphan drug credit from 50% to 25% of qualifying expenditures. We continue to examine the impact this tax reform legislation may have on our business, financial condition and results of operations. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act is uncertain and our business, financial condition and results of operations could be materially and adversely affected.

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

Our ability to use our federal and state net operating losses, or NOLs, to offset potential future taxable income and related income taxes that would otherwise be due is dependent upon our generation of future taxable income, and we cannot predict with certainty when, or whether, we will generate sufficient taxable income to use all of our NOLs.

In addition, under Sections 382 and 383 of the Code, our ability to utilize these NOLs and other tax attributes, such as federal tax credits, in any taxable year may be limited if we have experienced an "ownership change" and such NOLs or other tax attributes were generated prior to such "ownership change." Generally, an "ownership change" occurs if a corporation undergoes a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders (generally, stockholders or groups of stockholders owning at least 5% of the corporation's stock, taking into account certain attribution rules) over a three-year period. Similar rules may apply under state tax laws. We have in the past experienced at least one ownership change that we believe will result in limitations in our ability to use certain of our NOLs and credits. In addition, we may experience future ownership changes as a result of future offerings or other changes in the ownership of our stock, some of which are beyond our control. As a result, our NOLs and tax credit carryforwards could be limited and, in the case of NOLs generated in 2017 and before, may expire unused. Any such material limitation or expiration of our NOLs may harm our future operating results by effectively increasing our future tax obligations.

Risks Related to Ownership of Our Common Stock

The price of our common stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock has been, and is likely to continue to be, highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume and as a result of the factors discussed in this "Risk Factors" section and elsewhere in this Quarterly Report on Form 10-Q among others.

In addition, the stock market in general, and the Nasdaq Global Select Market and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies

following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which could materially and adversely affect our business, financial condition and results of operations.

An active trading market for our common stock may not be maintained.

Our common stock is currently traded on the Nasdaq Global Select Market, but we can provide no assurance that we will be able to maintain an active trading market for our shares on the Nasdaq Global Select Market or any other exchange in the future. If there is no active market for our common stock, it may be difficult for our stockholders to sell shares without depressing the market price for the shares or at all.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our common stock.

We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation, if any, of their common stock.

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

Our executive officers, directors and 5% stockholders together beneficially own a significant percentage of our voting stock. These stockholders may be able to determine the outcome of matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that other stockholders believe are in their best interests.

Our reported financial results may be adversely affected by changes in accounting principles generally accepted in the United States.

We prepare our financial statements in conformity with accounting principles generally accepted in the United States. These accounting principles are subject to interpretation by the Financial Accounting Standards Board, or FASB, and the SEC. A change in these policies or interpretations could have a significant effect on our reported financial results, may retroactively affect previously reported results, could cause unexpected financial reporting fluctuations, and may require us to make costly changes to our operational processes and accounting systems.

Our revenue to date has been primarily derived from research and license agreements, which can result in significant fluctuation in our revenue from period to period, and our past revenue is therefore not necessarily indicative of our future revenue.

Our revenue is primarily derived from our research and license agreements, from which we receive upfront fees, contract research payments, milestone and other contingent payments based on clinical progress, regulatory progress or net sales achievements and royalties. Significant variations in the timing of receipt of cash payments and our recognition of revenue can result from significant payments based on the execution of new research and license agreements, the timing of clinical outcomes, regulatory approval, commercial launch or the achievement of certain annual sales thresholds. The amount of our revenue derived from research and license agreements in any given period will depend on a number of unpredictable factors, including our ability to find and maintain suitable collaboration partners, the timing of the negotiation and conclusion of collaboration agreements with such partners, whether and when we or our collaboration partners achieve clinical, regulatory and sales milestones, the timing of regulatory approvals in one or more major markets, reimbursement levels by private and government payers, and the market introduction of new drugs or generic versions of the approved drug, as well as other factors. Our past revenue generated from these agreements is not necessarily indicative of our future revenue. If any of our existing or future collaboration partners fails to develop, obtain regulatory approval for, manufacture or ultimately commercialize any product candidate under our collaboration agreement, our business, financial condition, and results of operations could be materially and adversely affected.

Once we are no longer an emerging growth company we will be subject to additional laws and regulations affecting public companies that will increase our costs and the demands on management and could harm our operating results.

As a public company we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, which requires, among other things, that we file with the Securities and Exchange Commission, or the SEC, annual, quarterly and current reports with respect to our business and financial condition as well as other disclosure and corporate governance requirements. However, as an emerging growth company we may take advantage of exemptions from various requirements such as an exemption

from the requirement to have our independent auditors attest to our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002 as well as an exemption from the "say on pay" voting requirements pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Once we are no longer an emerging growth company, we will be required to comply with these additional legal and regulatory requirements applicable to public companies and will incur significant legal, accounting and other expenses to do so. If we are not able to comply with the requirements in a timely manner or at all, our financial condition or the market price of our common stock may be harmed. For example, if we or our independent auditor identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses we could face additional costs to remedy those deficiencies, the market price of our stock could decline or we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

We will remain an emerging growth company until the earliest of (1) December 31, 2020, (2) the last day of the fiscal year (a) in which we have total annual gross revenue of at least $1.07 billion or (b) in which we are deemed to be a large accelerated filer, which requires the market value of our common stock that is held by non-affiliates to exceed $700.0 million as of the prior June 30th, and (3) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period. We cannot predict when we will no longer be an emerging growth company.

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

Sales of a substantial number of shares of our common stock in the public market could occur at any time. 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. Moreover, holders of certain shares of our common stock have rights, subject to certain 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. For example, we filed a registration statement on Form S-3 to register for resale shares held by Morningside Venture (IV) Investments Limited and Ultimate Keen Limited, which together hold 14,908,031 shares of our common stock. We have registered all currently reserved shares of common stock that we may issue under our equity compensation plans and intend to register in the future any additional reserved or issued shares of common stock. These registered shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our 2015 Plan, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital may be needed in the future to continue our planned operations, including conducting clinical trials, commercialization efforts, expanded research and development activities and costs associated with operating a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our common stock.

Pursuant to our equity incentive plans, our compensation committee is authorized to grant equity-based incentive awards to our employees, non-employee directors and consultants. Future grants of restricted stock units, options and other equity awards and issuances of common stock under our equity incentive plans will result in dilution and may have an adverse effect on the market price of our common stock.

Additionally, the number of shares of our common stock reserved for issuance under our 2015 Plan will automatically increase on January 1 of each year, beginning on January 1, 2016 and continuing through and including January 1, 2025, by 4% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. Unless our board of directors elects not to increase the number of shares available for future grant each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which means that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the chairman of the board of directors, the chief executive officer or by a majority of the total number of authorized directors;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue preferred stock on terms determined by the board of directors without stockholder approval and which preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing or cause us to take other corporate actions stockholders may desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

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

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

If securities or industry analysts 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. If one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price may decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our common stock could decrease, which might cause our stock price and trading volume to decline.

In addition, as required by the new revenue recognition standards under ASC 606, *Revenue from Contracts with Customers*, which applied beginning in the January 1, 2018, we will disclose the aggregate amount of transaction price allocated to performance obligations that are unsatisfied (or partially unsatisfied) as of the end of the reporting period. Market practices surrounding the calculation of this measure are still evolving. It is possible that analysts and investors could misinterpret our disclosure or that the terms of our research or license agreements or other circumstances could cause our methods for preparing this disclosure to differ significantly from others, which could lead to inaccurate or unfavorable forecasts by analysts and investors.

Regardless of accuracy, unfavorable interpretations of our financial information and other public disclosures could have a negative impact on our stock price. If our financial performance fails to meet analyst estimates, for any of the reasons discussed above or otherwise, or one or more of the analysts who cover us downgrade our common stock or change their opinion of our common stock, our stock price would likely decline.

Item 2. Recent Sales of Unregistered Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits

EXHIBIT INDEX

Exhibit No	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Restated Certificate of Incorporation of Aduro Biotech, Inc.	8-K	001-37345	3.1	04/20/2015	
3.2	Amended and Restated Bylaws of Aduro Biotech, Inc.	S-1/A	333-202667	3.5	04/06/2015	
4.1	Form of common stock certificate.	S-1/A	333-202667	4.1	04/06/2015	
4.2	Amended and Restated Investor Rights Agreement, by and among Aduro Biotech, Inc. and the stockholders named therein, dated December 19, 2014.	S-1	333-202667	4.2	03/11/2015	
10.1	Non-Employee Director Compensation Policy					X
31.1	Certification of the Chief Executive Officer Pursuant to Securities Exchange Act of Rules 13A-14(A) and 15D-14(A).					X
31.2	Certification of Chief Financial Officer Pursuant to Securities Exchange Act Rules 13A-14(A) and 15D-14(A).					X
32.1*	Certification Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
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 Exhibit 32.1 accompany this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed “filed” by the Registrant for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

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.

Aduro Biotech, Inc.

Date: August 1, 2018

By: /s/ Stephen T. Isaacs
Stephen T. Isaacs
Chairman, President and Chief Executive Officer
(Principal Executive Officer)

Aduro Biotech, Inc.

Date: August 1, 2018

By: /s/ Jennifer Lew
Jennifer Lew
Chief Financial Officer
(Principal Financial Officer)

Exhibit 10.1

ADURO BIOTECH, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY
APPROVED BY THE BOARD OF DIRECTORS ON MAY 24, 2018

Each member of the Board of Directors (the "***Board***") who is not also serving as an employee of Aduro Biotech, Inc. ("***Aduro***") or any of its subsidiaries (each such member, an "***Eligible Director***") will receive the compensation described in this Non-Employee Director Compensation Policy (the "***Director Compensation Policy***") for his or her Board service.

The Director Compensation Policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

Annual Cash Compensation

Each Eligible Director shall receive the cash compensation described below. The annual cash compensation amount set forth below is payable in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If an Eligible Director joins the Board or a committee of the Board ("***Committee***") at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid for the first fiscal quarter in which the Eligible Director provides the service, and regular full quarterly payments thereafter. All annual cash retainer fees are vested upon payment.

1. Annual Board Service Retainer:
   a. Eligible Directors other than the Non-Executive Chairperson: $40,000
   b. Non-Executive Chairperson: $65,000

2. Annual Committee Chair Service Retainer:[1]
   a. Chairperson of the Audit Committee: $15,000
   b. Chairperson of the Compensation Committee: $12,000
   c. Chairperson of the Nominating & Corporate Governance Committee: $8,000

3. Annual Committee Member Service Retainer:
   a. Member of the Audit Committee: $7,500
   b. Member of the Compensation Committee: $6,000
   c. Member of the Nominating & Corporate Governance Committee: $4,000
   d. Member of the Science & Technology Committee: $10,000

[1] Eligible Directors who serve as a Committee Chair will not receive the annual retainer for service as a member on such Committee.

Equity Compensation

The equity compensation set forth below will be granted under the Aduro, Inc. 2015 Equity Incentive Plan (the "***Plan***"), and will be documented on the applicable form of equity award agreement most recently approved for use by the Board (or a duly authorized committee thereof) for Eligible Directors. All stock options granted under the Director Compensation Policy will be nonstatutory stock options, with an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying Common Stock on the date of grant, and a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan).

1. Initial Option Grant: On the date of the Eligible Director's initial election to the Board (or, if such date is not a market trading day, the first market trading day thereafter), the Eligible Director automatically will be granted, without further action by the Board or Compensation Committee of the Board, a stock option to purchase 40,000 shares of Common Stock (the "***Initial Option Grant***"). The Initial Option Grant will vest one-third after the first year, with the remaining shares vesting quarterly in years two and three following the grant date, such that the Initial Option Grant will be fully vested on the third anniversary of the date of grant, subject to the Eligible Director's Continuous Service on each applicable vesting date. In addition, in the event of a Change in Control or a Corporate Transaction, any unvested portion of the Initial Option Grant will fully vest and become exercisable as of immediately prior to the effective time of such Change in Control or Corporate Transaction, subject to the Eligible Director's Continuous Service on the effective date of such transaction.

2. Annual Option Grant: On the date of each Aduro annual stockholder meeting, each Eligible Director automatically, and without further action by the Board or Compensation Committee of the Board, will be granted a stock option to purchase 20,000 shares of Common Stock (the "***Annual Option Grant***"). The Annual Option Grant will vest quarterly over one year from the grant date, such that the Annual Option Grant will be fully vested on the first anniversary of the date of grant, subject to the Eligible Director's Continuous Service on each applicable vesting date. In addition, in the event of a Change in Control or a Corporate Transaction, any unvested portion of the Annual Option Grant will fully vest and become exercisable as of immediately prior to the effective time of such Change in Control or Corporate Transaction, subject to the Eligible Director's Continuous Service on the effective date of such transaction.

Election to Receive Annual Cash Compensation in the Form of Stock Options

Each Eligible Director may elect, in writing, to receive his or her annual cash compensation in the form of stock options. Such election would apply to all annual cash compensation payable during the subsequent year of service. If elected, all stock options will be granted under the Plan and will be documented on the applicable form of equity award agreement most recently approved for use by the Board (or a duly authorized committee thereof) for Eligible Directors. All stock options granted under the Director Compensation Policy will be nonstatutory stock options with an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying Common Stock on the date of grant, will be granted on the date of the annual meeting of our stockholders, will vest monthly over one year form the grant date, , and will have a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan).

The number of stock options that an Eligible Director will receive in lieu of such annual cash compensation will be determined by dividing (i) the amount of annual cash compensation that would otherwise be paid during the upcoming year of service, by (ii) the Black-Scholes value of a share of Common Stock on the applicable grant date. Any election to receive stock options in lieu of annual cash compensation must be made by the Eligible Director at least five (5) business days prior to the date of the annual meeting of stockholders and such election will be irrevocable until the next annual meeting of the stockholders.

Expenses

The Company will reimburse Eligible Directors for ordinary, necessary and reasonable out-of-pocket travel expenses to cover in-person attendance at and participation in Board and/or Committee meetings; *provided*, that Eligible Directors timely submit to the Company appropriate documentation substantiating such expenses in accordance with the Company's travel and expense policy, as in effect from time to time.

Philosophy

The Director Compensation Policy is designed to attract and retain experienced, talented individuals to serve on the Board. The Board anticipates that the Board, or a duly authorized committee thereof, will generally review Eligible Director compensation on an annual basis following the IPO. The Director Compensation Policy, as amended from time to time, may take into account the time commitment expected of Eligible Directors, best practices and market rates in director compensation, the economic position of Aduro, broader economic conditions, historical compensation structure, the advice of the compensation consultant that the Compensation Committee or the Board may retain from time to time, and the potential dilutive effect of equity awards on our stockholders.

Under the Director Compensation Policy, Eligible Directors receive cash compensation in the form of retainers to recognize their level of responsibility as well as the necessary time commitment involved in serving in a leadership role and/or on Committees. Eligible Directors also receive equity compensation because we believe that stock ownership provides an incentive to act in ways that maximize long-term stockholder value. Further, we believe that stock-based awards are essential to attracting and retaining talented Board members. When stock options are granted, these stock options will have an exercise price at least equal to the Fair Market Value of Common Stock on the date of grant, so that stock options provide a return only if the Fair Market Value appreciates over the period in which the stock option vests and remains exercisable. We believe that the vesting acceleration provided in the case of a Change in Control or other Corporate Transaction is consistent with market practices and is critical to attracting and retaining high quality directors.

Exhibit 31.1

Certification of the Chief Executive Officer
Pursuant to
Securities Exchange Act of Rules 13A-14(A) and 15D-14(A)

I, Stephen T. Isaacs, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Aduro Biotech, 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 13(a)-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: August 1, 2018

/s/ Stephen T. Isaacs
Stephen T. Isaacs
Chairman, President and Chief Executive Officer

Exhibit 31.2

Certification of Chief Financial Officer
Pursuant to
Securities Exchange Act Rules 13A-14(A) and 15D-14(A)

I, Jennifer Lew, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Aduro Biotech, 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 13(a)-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: August 1, 2018

/s/ Jennifer Lew
Jennifer Lew
Chief Financial Officer

Exhibit 32.1

Certification Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Quarterly Report of Aduro Biotech, Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2018 (the "Report"), Stephen T. Isaacs, Chairman, President and Principal Executive Officer of the Company, and Jennifer Lew, Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The 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 Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 1, 2018

/s/ Stephen T. Isaacs
Stephen T. Isaacs
Chairman, President and Chief Executive Officer

/s/ Jennifer Lew
Jennifer Lew
Chief 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 Aduro Biotech, 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.